



***“Technical Assistance for the SA-EU
Dialogue Facility”***

(EuropeAid/137708/DH/SER/ZA)

**Report: *Environmental scan on the use of career
assessments in SA***

**Dialogue project: South Africa Dialogue Facility
EuropeAid 137708/DH/SER/ZA**

Senior Non-Key Expert : Maximus Monaheng Sefotho



A project implemented by
DAI human dynamics
GmbH & Co. KG

Glossary of Terms

Abbreviation	Term
CDP	Career Development Practitioners
CDS	Career Development Services
DHET	Department of Higher Education and Training
HPCSA	Health Professions Council of South Africa
HSRC	Human Sciences Research Council
IPER	Institute for Psychological and Edumetric Research
MCM	Maree Career Matrix
MSCI	My System of Career Influences
NIPR	National Institute for Personnel Research
PIU	Poverty, Inequality and Unemployment
RIASEC	Realist, Investigative, Artistic, Social, Enterprising, conventional
SACDA	South African Career Development Association
SAPI	South African Personality Inventory
SDS	Self-Directed Search

	Project Principal	Senior Non-key Expert (NKE)
Name:	SA-EU Dialogue Facility	Maximus Monaheng Sefotho
Address	Unit 5, Parklands Office Park 223 Bronkhorst Street Brooklyn, Pretoria SOUTH AFRICA	3 Palm road Waterkloof Ext 2 Waterkloof Palm Estate Pretoria South Africa
Contact	Ms Vuyelwa Masagwana	Dr. M. P. Sefotho E-mail: Malephole.sefotho@gmail.com +27701571257
Telephone	+27 (0)82 339 2131	+27 (0)726380868
E-mail	Teamleader@dialoguefacility.org	msefotho@uj.ac.za

Table of Contents

Glossary of Terms.....	ii
1. Executive summary	4
2. INTRODUCTION TO THE REPORT	5
<i>Terminology</i>	5
<i>Research approach</i>	7
Introduction	8
Scoping the context of career assessment in South Africa	8
<i>Socio-economic factors and accessibility of career assessments in SA</i>	10
<i>Career assessment in South Africa</i>	11
Legislation and policies for conducting career assessments in SA	13
Use of career assessments in South Africa	14
Assessments already being used in South Africa	14
<i>Career assessments developers in South Africa</i>	16
Quality assurance and compliance measures in place	18
Platforms used to access the tests	20
Career development practitioners	20
Stakeholders and beneficiaries	23
DISCUSSION.....	24
Gaps and enablers.....	25
FINAL CONCLUSIONS AND RECOMMENDATIONS.....	27
Annexure A: Sources.....	29

1. Executive summary

This desktop research was a response to a project call (EuropeAid/137708/DH/SER/ZA) to conduct an environmental scan on the use of career assessments in South Africa. The study aims to generate recommendations for the development of non-psychometric assessment guidelines relevant for the South African context.

The researcher followed the scoping review and applied the five step Arksey and O'Malley framework to conduct the search. The conceptual lenses that guided the study drew from constructivism. First, the context of assessment in South Africa was scanned. The context indicates dominance of the person-environment fit approach to career assessment. Second, the study presents the scenario on the socio-economic factors and accessibility of career assessments in South Africa with current statistics portraying unemployment rates. Third, the legislative framework that governs the health professions was reviewed. Fourth, a review of career assessment developers provided a sense of how commercial the enterprise has become and the products currently in use.

From the existing literature reviewed, there emerged five critical areas that call for urgent attention. These were:

- (1) Unclear position of career assessment within the context of psychometric assessment,
- (2) Harmful benevolent policy position,
- (3) Uncontrolled online testing,
- (4) Lack of non-psychometric (culture-language sensitive) testing instruments,
- (5) Highly commercialised testing context.

These five factors continue to promote inequitable access to career assessment, disadvantaging the poor who mainly reside in rural areas of South Africa.

2. INTRODUCTION TO THE REPORT

Terminology

The following terminology is critical in this report.

Psychological testing¹

“Psychological testing [is] the process of measuring psychology-related variables by means of devices or procedures designed to obtain a sample of behaviour”.

Psychological assessment²

“Psychological assessment [is] the gathering and integration of psychology -related data for the purpose of making a psychological evaluation that is accomplished through the use of tools such as tests, interviews, case studies, behavioural observation, and specially designed apparatuses and measurement procedures”.

Psychometric assessment³

Psychometric assessments are objective and standardised measuring instruments producing numerical data that can be statistically analysed and administered by psychologists. The instruments measure psychological constructs.

Non-psychometric assessment⁴

Non-Psychometric assessments are unstructured, non-standardised "subjective-intuitive procedures" or instruments measuring tasks based on subjective judgement. However, psychometric assessments are considered psychological instruments.

Psychological constructs⁵

“The concept ‘construct’ has been used to denote a large class of phenomena, including more classically defined traits⁶” Psychological constructs denote “objectively existing constituents of reality, namely, the particular psychological “objects” that are the focus of inquiry, that is,

¹ Cohen, R. J., & Swerdlik, M. E. (2017). *Psychological testing and assessment* (9th ed.). McGraw-Hill Education.

² Cohen, R. J., & Swerdlik, M. E. (2017). *Psychological testing and assessment* (9th ed.). McGraw-Hill Education.

³ Merenda, P. F. (2004) Psychometric tests. In Spielberger, C. D. (Ed.), *Encyclopedia of applied psychology*. San Diego, CA: Academic Press. Pp. 185–189.

⁴ Merenda, P. F. (2004) Psychometric tests. In Spielberger, C. D. (Ed.), *Encyclopedia of applied psychology*. San Diego, CA: Academic Press. Pp. 185–189.

⁵ Slaney, K., & Garcia, D. (2015). Constructing Psychological Objects: The Rhetoric of Constructs. *Journal of Theoretical and Philosophical Psychology*, 35(4), 244-259.

⁶ Slaney, K. L., & Garcia, D. A. (2015). Constructing psychological objects: The rhetoric of constructs. *Journal of Theoretical and Philosophical Psychology*, 35(4), 244.

whatever feature of reality...”. Examples: cognitions, emotions, attitudes, personality characteristics and intelligence, including mental disorders⁷.

Qualitative career assessment⁸

“A structured qualitative instrument, technique or process that facilitates participant reflection.” (McMahon et al. 2019, p. 421).

Edumetric tests

Edumetric tests measure progressive within-individual gains and the extent to which it reflects the within-individual growth that traditionally has been of primary interest to educational testing⁹.

Career development practitioners

Career Development Practitioner is an umbrella term that refers to any direct service provider in the career development field. This includes but is not limited to: career practitioners, career educators, career information specialists, career management consultants, work development officers, employment support workers, work experience coordinators, job developers, placement coordinators, career coaches, and vocational rehabilitation workers. Although the term “counsellor” has historically been used with many job titles in the field (e.g., employment counsellors, rehabilitation counsellors, career counsellors), in recent years there has been increasing recognition that a “career counsellor” has a specific scope of practice (see the Career Counselling Specialization). Employers are encouraged to use titles without “counselling” in them for all employees and service providers who are not professional counsellors/therapists¹⁰.

⁷ Fried, E. I. (2017). What are psychological constructs? On the nature and statistical modelling of emotions, intelligence, personality traits and mental disorders. *Health psychology review*, 11(2), 130-134.

⁸ McMahon, M., Watson, M., & Lee, M. C. (2019). Qualitative career assessment: A review and reconsideration. *Journal of Vocational Behavior*, 110, 420-432.

⁹ Carver, R. (1974). Two dimensions of tests: Psychometric and edumetric. *American Psychologist*, 29(7), 512-518.

¹⁰ <https://career-dev-guidelines.org/wp-content/uploads/2015/06/Glossary.pdf>

Research approach

This desktop study followed the scoping review with 'consultation exercise' conducted with key informants based on the Arksey and O'Malley framework as below¹¹;

Stage 1: identifying [and rearranging terms of reference]

Stage 2: identifying relevant studies

Stage 3: study selection

Stage 4: charting the data

Stage 5: collating, summarizing and reporting the results

Scoping reviews are increasingly used as an effective, rigorous and systematic approach to knowledge synthesis¹². The current desktop research is an environmental scan on the use of career assessments in South Africa. A team of two key experts one in South Africa and another in Europe discussed the research design and consulted on regular bases. A search was conducted in key journals related to the field of career assessment, namely; Journal of career assessment, South African Journal of Industrial Psychology, the South African Journal of Psychology, the Journal of Vocational Behavior, The Career Development Quarterly, the Journal of Career Development, the Journal of Employment Counseling, the International Journal for Educational and Vocational Guidance, the British Journal for Guidance and Counselling, and the Australian Journal of Career Development, among others.

Articles from the journals were screened for eligibility and inclusion and exclusion criteria applied for relevance to the study. Data were charted for analysis, collated and summarised for writing the narrative account of this report. The search for literature was opened wider with a focus on books and other relevant sources focussing on career assessment in South Africa.

¹¹ Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8(1), 19-32.

¹² Charlton, P., Doucet, S., Azar, R., Nagel, D. A., Boulos, L., Luke, A., ... & Montelpare, W. J. (2019). The use of the environmental scan in health services delivery research: a scoping review protocol. *BMJ open*, 9(9), e029805.

Introduction

Scoping the context of career assessment in South Africa

South Africa presents a unique assessment history of turbulence and context emerging from its legacy of apartheid¹³. Along with psychological and psychometric assessment, career assessment in South Africa is enshrined in complexity and controversy shaded by monopolistic positivist approaches to testing. The person-environment fit approach to career remains a dominant mode of assessment¹⁴ in South Africa, and it can be traced back to Parsons in 1909¹⁵. The field of psychology then was dominated by traditional logical-positivist worldview¹⁶ to understanding human behaviour through measurement. The person-environment fit approach was found to be "...inadequate reliability and validity of tests in the South African context, Western-based theoretical underpinnings, language and socio-economic bias, and inadequate norms for the South African context" (Bemath, 2020, p.2).

Contemporary approaches to career assessment, have made clarion calls for alternative assessment in the field of career guidance premised on postmodern approaches to career counseling¹⁷. In this section, the report concentrates on career assessment in South Africa, which in essence cannot be separated from general psychological testing. Historically, psychological testing in South Africa rests on a robust psychometric heritage¹⁸ that carries the stigma of social inequity. Consequently, there is a drought of literature regarding career assessment specifically. A critical review of career research undertaken between 1980 to 1997 indicated that there is a diversity of career assessment instruments, which mainly originate from the USA, however, little has been done to develop home-grown career assessment instruments¹⁹. To date, a list of classified and certified psychological tests provided by the HPCSA indicates only a handful of conspicuously labelled career related tests (see appendix

¹³ Laher, S., & Cockcroft, K. (2013). Contextualising psychological assessment in South Africa. *Psychological assessment in South Africa: Research and applications*, 1-16.

¹⁴ Bemath, N. (2020). Relevance of the person-environment fit approach to career assessment in South Africa – A review. *African Journal of Psychological Assessment*, 2(0), a22. <https://doi.org/10.4102/ajopa.v2i0.22>

¹⁵ McIlveen, P., & Patton, W. (2006). A critical reflection on career development. *International Journal for Educational and Vocational Guidance*, 6(1), 15-27.

¹⁶ McMahon, M., Patton, W., & Watson, M. (2003). Developing qualitative career assessment processes. *The Career Development Quarterly*, 51(3), 194-202.

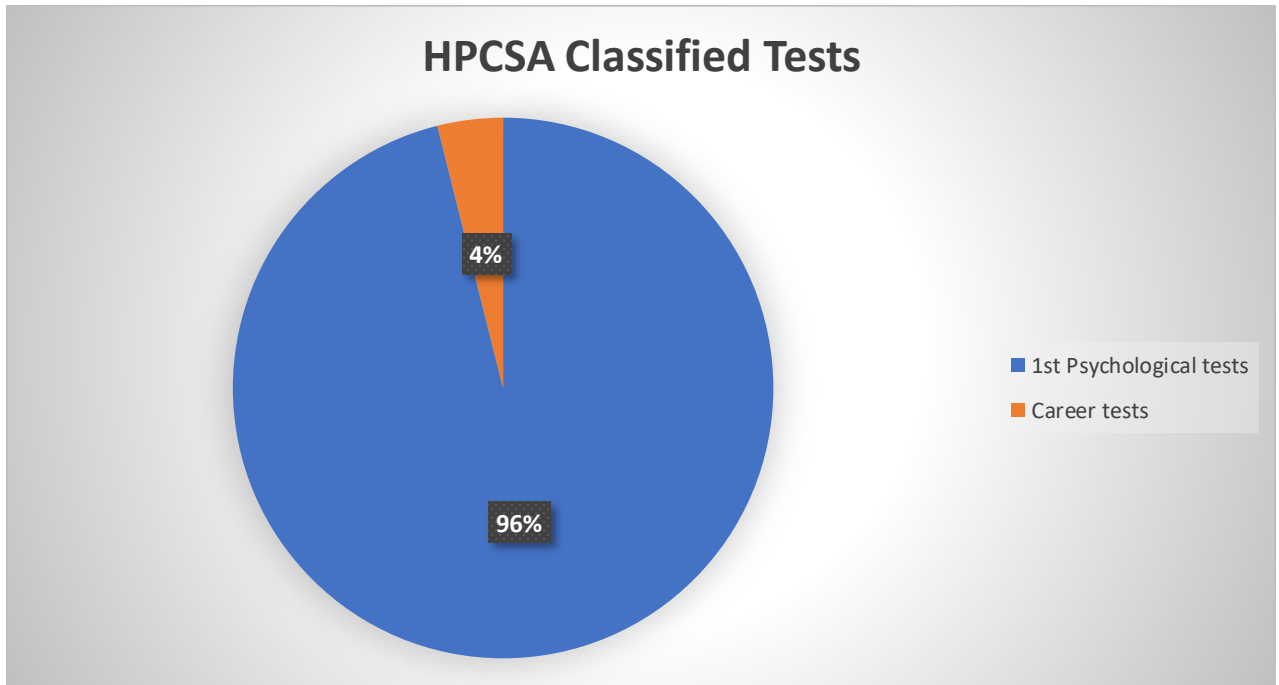
¹⁷ Maree, J. G. (2010). Brief overview of the advancement of postmodern approaches to career counseling. *Journal of Psychology in Africa*, 20(3), 361-367.

¹⁸ Bidoli, D. (2002). An introduction to psychological assessment in the South African context, C. Foxcroft and G. Roodt (Eds.): book review. *South African Journal of Psychology*, 32(1), 66-68.

¹⁹ Stead, G. B., & Watson, M. B. (1998). Career research in South Africa: Challenges for the future. *Journal of Vocational Behavior*, 52(3), 289-299.

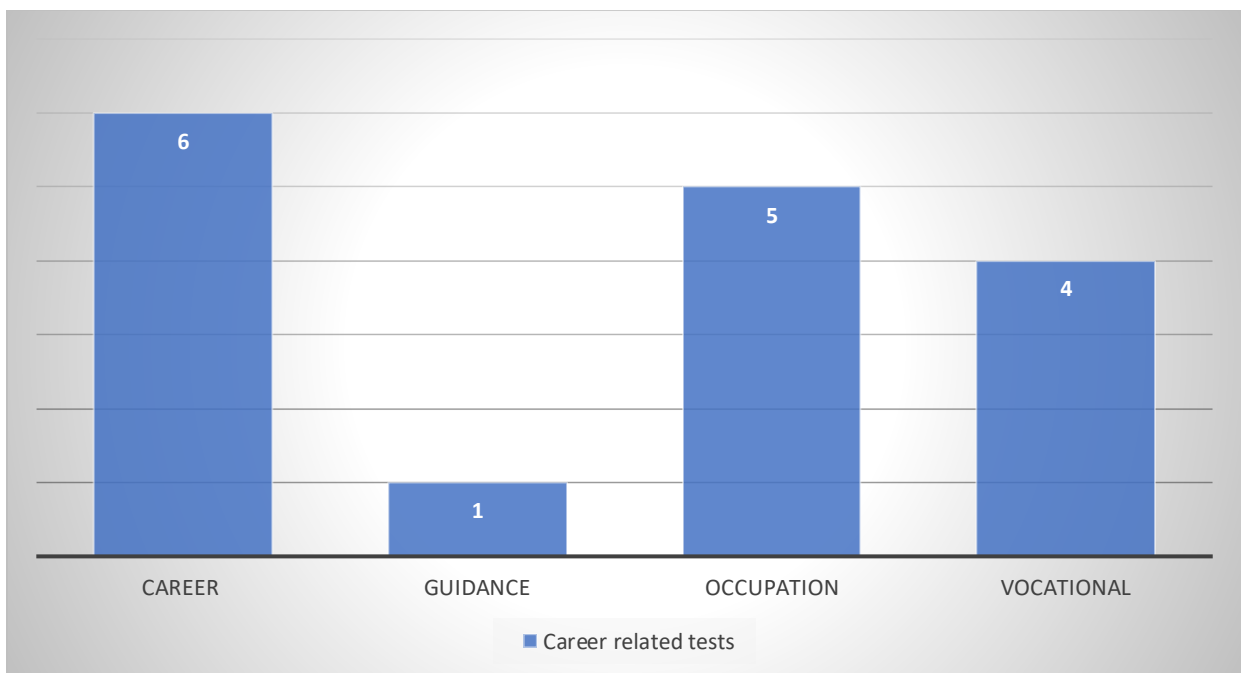
A). About 96% (393) represents all other tests while only 4% (16) represents career related tests. This low percentage indicates a critical gap in a service as important as career guidance.

Figure 1: HPCSA classified tests



A further disaggregation of the career related tests from the HPCSA classification list indicates an assessment scenario that calls for urgent attention.

Figure 2: Career related tests



Generally, career assessment instruments are used by trained professionals, but current trends of the on-line availability of tests present challenges in the regulation of access and use. The cyberspace is not necessarily regulated.

Socio-economic factors and accessibility of career assessments in SA

South Africa is currently faced with triple socio-economic factors of poverty, inequality and unemployment (PIU) generally among youth in the 14-35 age bracket²⁰. Poverty in South Africa is characterised as multidimensional²¹. The interconnectedness of poverty and unemployment exacerbates inequality. Table 1 shows unemployment by province.

Table 1: Unemployment rate by province²²

	Official unemployment rate					Expanded unemployment rate				
	Oct-Dec 2019	Jul-Sep 2020	Oct-Dec 2020	Qtr-to-qtr change	Year-on-year change	Oct-Dec 2019	Jul-Sep 2020	Oct-Dec 2020	Qtr-to-qtr change	Year-on-year change
	Per cent			Percentage points		Per cent			Percentage points	
South Africa	29,1	30,8	32,5	1,7	3,4	38,7	43,1	42,6	-0,5	3,9
Western Cape	20,9	21,6	22,5	0,9	1,6	24,1	29,1	26,8	-2,3	2,7
Eastern Cape	39,5	45,8	47,9	2,1	8,4	47,7	51,2	52,4	1,2	4,7
Northern Cape	26,9	23,1	28,7	5,6	1,8	39,2	44,0	41,8	-2,2	2,6
Free State	35,0	35,5	33,4	-2,1	-1,6	42,3	42,6	39,9	-2,7	-2,4
KwaZulu-Natal	25,0	26,4	29,6	3,2	4,6	41,9	47,5	46,0	-1,5	4,1
North West	28,8	28,3	33,3	5,0	4,5	43,0	46,5	46,0	-0,5	3,0
Gauteng	30,8	33,7	34,1	0,4	3,3	35,3	41,0	41,0	0,0	5,7
Mpumalanga	33,6	27,8	33,0	5,2	-0,6	43,8	45,6	46,4	0,8	2,6
Limpopo	23,1	26,3	27,3	1,0	4,2	44,0	46,9	47,5	0,6	3,5

Source: Statistics South Africa (2021).

Notes: The official unemployment rate increased by 1,7 percentage points to 32,5% in Q4: 2020 compared to Q3: 2020.

The bleak picture regarding unemployment in South Africa presents challenges for the field of career development. While the contrary may be also true, that perhaps there are opportunities

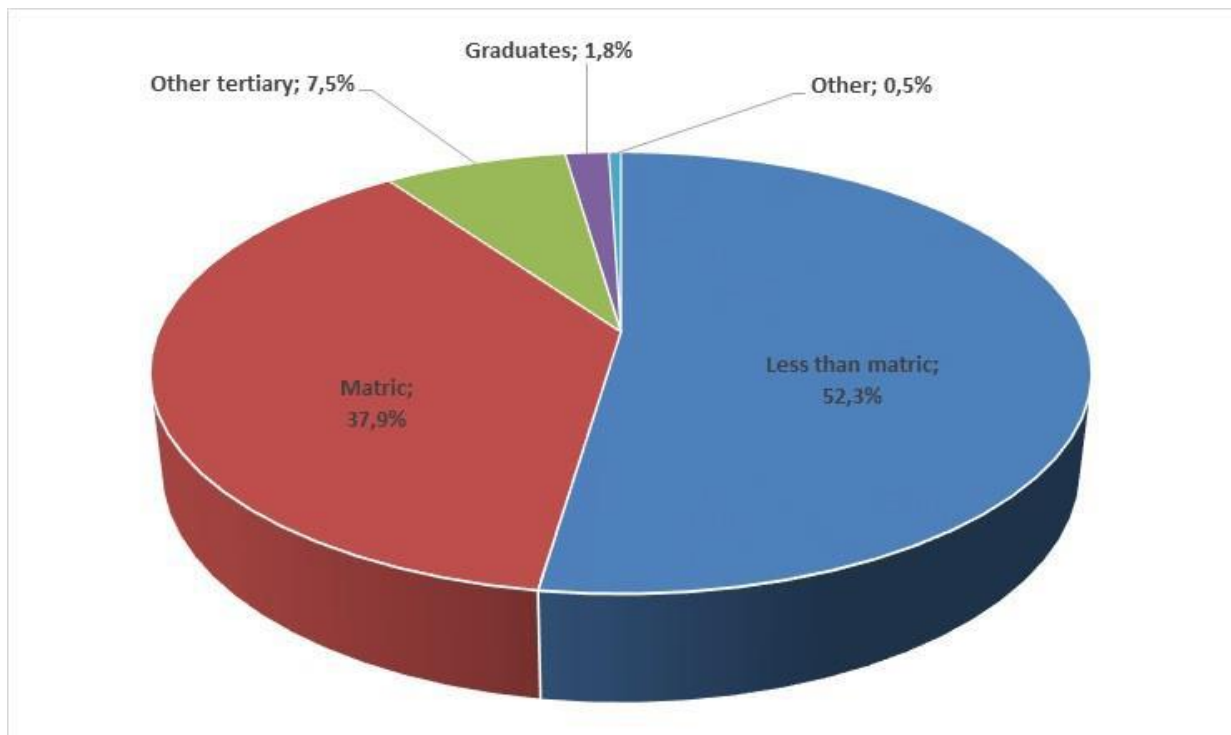
²⁰ Chibba, M., & Luiz, J. M. (2011). Poverty, inequality and unemployment in South Africa: Context, issues and the way forward. *Economic Papers: A journal of applied economics and policy*, 30(3), 307-315.

²¹ Rogan, M. (2016). Gender and multidimensional poverty in South Africa: Applying the global multidimensional poverty index (MPI). *Social Indicators Research*, 126(3), 987-1006.

²² Statistics South Africa (StatsSA). (2021). P0211 - Quarterly Labour Force Survey (QLFS), 4th Quarter 2020. Retrieved from: <http://www.statssa.gov.za>

for provision of career development services, the concern of many unemployed people may be on getting employment. However, access of the services remains a challenge based on that most would not be able to pay for career services. Below is the proportion of unemployment by education level.

Table 2: Proportion of unemployment by education level, Q4:2020



Source: Statistics South Africa (2021).

Unemployment is high among non-graduates according to figure 1 above. This is the cohort that mostly need career assessment services, but accessibility is a challenge.

Career assessment in South Africa

Career assessment is geared towards addressing key priority areas of unemployment, poverty and inequality in South Africa. The Career Development Services (CDS) section of the DHET is mandated to provide free quality career information, advice and counselling services that fill the social equity gap issues in the South African labour market. Career services are envisaged to be a vehicle to alleviating unemployment, poverty and inequality. The current study is aimed at assisting CDS to identify the gaps and enablers for “non-psychometric career assessment”

to develop equitable career assessment guidelines. That psychometric and non-psychometric assessments are psychological²³ and therefore regulated by statutes, implies that the assessments envisaged to be developed should not be characterised as psychological if they are to be client and practitioner inclusive.

Career assessment in South Africa emerges from a legacy and the policy of oppression²⁴ and inequality from the Apartheid era which has persisted to date. The CDS is geared to address the socio-economic factors for accessibility of career assessments created by unequal career services among the South African populations. The economic status of most families formerly marginalised did not allow youth aspiring for the world of work access to career services. Adult populations were similarly disadvantaged.

The current environmental scan on the use of career assessments in South Africa is benchmarked on an environmental scan of career advice services of 2012²⁵. Lack of ICT infrastructure exacerbates the problem of access for the majority of the population who live in far flung rural areas of South Africa. Thus, career assessment is among some of the services currently inaccessible to the majority of rural dwellers. Like an observation made by McMahon and Patton, career assessment and career development have a co-existence wrapped in an unresolved and uneasy relationship²⁶. In South Africa, career assessment is subsumed under psychological testing and psychometric assessments with more emphasis on the quantitative measurements that are prescribed by the professional board for psychology. Career assessment consequently suffers a similar fate of marginalisation characterised by a limited number of professionals adequately trained in psychometrics²⁷. An anomaly in the South African contexts as observed by Laher and Cockcroft, is that “a specialisation in psychometrics falls into the category of a psychometrist or a psychological counsellor – a level that is academically lower than that of a psychologist”. Notably, career assessments are not easily distinguishable from other psychological assessments.

²³ Merenda, P. F. (2004). Psychometric tests. In Spielberger, C. D. (Ed.), *Encyclopedia of applied psychology*. San Diego, CA: Academic Press. Pp. 185–189.

²⁴ Pillay, A. L. (2020). Prioritising career guidance and development services in post-apartheid South Africa. *African Journal of Career Development*, 2(1), 1-5.

²⁵ South African Qualifications Authority (SAQA). (2012). An environmental scan of career advice services in South Africa 2012. Pretoria, South Africa: SAQA.

²⁶ McMahon, M., & Patton, W. (2015). Incorporating career assessment into career counselling. In *Career Assessment* (pp. 49-58). Brill Sense.

²⁷ Laher, S., & Cockcroft, K. (2013). Current and future trends in psychological assessment in South Africa: Challenges and opportunities. *Psychological assessment in South Africa: Research and applications*, 535-552

Legislation and policies for conducting career assessments in SA

This section was informed by a policy mapping exercise to identify legislation and policies for conducting career assessment in South Africa. Legislation and policies should provide guidance for practice in professions such as career guidance. South Africa is renowned for its world class policies landscape. However, criticism labelled against the country in relation to psychological assessments is that it is heavily legislated.

The Health Professions Act, Act 56 of 1974, NOTICE 101 OF 2018 clearly stipulates that; No person shall perform any act deemed to be an act pertaining to the profession of psychology unless he or she is registered in terms of the Act in the relevant registration category of psychology. While the overall aim of the Act is well-intentioned, it must similarly guard against harmful beneficence, disregarding the wider side²⁸ of social justice, equity and free agency.

The Employment Equity Act No. 55 of 1998, amended in 2020, is a fundamental policy that provides guidance for transformation and equity. Although not directly related to career assessment, the policy provides for equity in employment, and inferences could be drawn towards equitable career assessment as directed by the employment equity policy. Ironically, despite its aim of equity, the act discriminates in relation to assessment; by promulgating that tests may only be used by registered psychologists and psychometrists. This marginalises the majority of the people of South Africa who are thus prevented from accessing career assessment under the promulgation.

The National Policy for an Integrated Career Development Systems for South Africa ²⁹ is a recent policy for the field of career development. The policy aims to "...address the weaknesses, overlaps and gaps in the current provision of career development services³⁰". There is also emphasis on clarifying the responsibility for the provision of career development service. However, in its intent, the policy is silent on the services of career assessment. This is a gap that should not be overlooked as it stands to disadvantage many unemployed youth who are caught in the circle of joblessness that is perpetuated by the Covid-19 pandemic. Another important document is the Competency Framework for Career Development Practitioners in South Africa of 2016.

²⁸ Rivera, L. (2011). Harmful beneficence. *Journal of Moral Philosophy*, 8(2), 197-222.

²⁹ Modiba, M. R., & Sefotho, M. M. (2019). Life orientation teacher training needs in career guidance at rural high schools. *South African Journal of Education*, 39(1).

³⁰ Department of Higher Education and Training (2012). Framework for Cooperation in the Provision of Career Development (Information, Advice and Guidance) Services in South Africa. Retrieved from: www.dhet.gov.za

Use of career assessments in South Africa

The psycho-historical literature indicates that psychological assessments have been used in South Africa in the education sector and the industry with a general feeling that they have been used to segregate workers along the racial divide³¹. “Psychology, particularly psychometrics and assessment, had played a controversial role in the previous political dispensation of the country and there now arose a pressing need for research and practice in the field to redress the negative effects of these practices³²”. In South Africa, career assessment has a congenital existence with psychological and psychometric testing. However, there is an abysmal gap in literature that directly addresses career assessment in South Africa. “In the South African context, a national career advice service should be embedded in concepts such as lifelong career development and a qualitative approach towards delivering services”.

Assessments already being used in South Africa

Career services in South Africa constitute career information, advice and counselling. While it may be assumed that career information includes career assessment, this does not seem to be generally the case for ordinary citizens. However, career assessments that are popular in South Africa include:

MATRIX OF POPULAR PSYCHOMETRIC CAREER ASSESSMENTS (HPCSA accredited)

Table 3: Some career assessment tests

Test	Purpose	Range	Administration/availability Paper (P) Computerised (C) On-Line (OL)
Differential Aptitude Test (DAT)	Aptitude	DAT Form R: Grades 7 - 12 and adults	OL
Self-Directed Search (SDS)	Interest Questionnaire	Adolescent and young adults	OL
Career Attitudes and Strategies Inventory (CASI)	Assess attitudes related to career and identify career problems	17 to 77 years	OL
South African Vocational Interest Inventory (SAVII)	Interest Questionnaire	Students Grade 8 - 12 and Adults	OL

³¹ Owen, K. (1998). The role of psychological tests in education in South Africa: Issues, controversies, and benefits. HSRC Press.

³² Laher, S., & Cockcroft, K. (2014). Psychological assessment in post-apartheid South Africa: The way forward. *South African Journal of Psychology*, 44(3), 303-314.

Career Development Questionnaire (CDQ)	Career maturity and career decisions	Adolescents and young adults	OL
Career Portfolio (Curriculum based)	Subject and career choices	Grades 8-9 and 10-12	P
Career Portfolio (General)	Self and career exploration	Learners, students and adults	OL

Source: Mindmuzik Media 2021

Generally, a comprehensive survey of psychological test-use patterns has not been conducted in South Africa³³, let alone use of career assessments. Four years later since the observation made in 2004, a study on ‘investigating the use of psychological assessment in South African schools’ observed that the use of psychological tests was on moratorium³⁴. Literature is sparse on the use of career assessments in South Africa. This is a gap that is beyond the scope of this study, but which warrants serious consideration. Studies that analysed these instruments variously validated them as below:

Table 4: Reliability and validity of the tests

Test	Reliability	Validity	Acceptability	Equitability
Differential Aptitude Test (DAT)	Adequate reliability ³⁵	Validity questionable	Poor	Language problems
Self-Directed Search (SDS)	High internal consistency reliabilities ³⁶	Good validity	Very popular in South Africa	Different socio-economic circumstances
Career Attitudes and Strategies Inventory (CASI)	Sufficiently reliable ³⁷	cross-cultural validity	Acceptable	South African adults
South African Vocational Interest Inventory (SAVII)	Acceptable ³⁸ at (> .85)	Valid	Not applicable across genders	Translated into isiXhosa

³³ Foxcroft, C., Paterson, H., Le Roux, N., & Herbst, D. (2004). Psychological assessment in South Africa: a needs analysis: the test use patterns and needs of psychological assessment practitioners: final report. July.

³⁴ Setshedi, M. J. (2008). Investigating the use of psychological assessment in South African schools (Doctoral dissertation, University of the Witwatersrand).

³⁵ Foxcroft, C., Paterson, H., Le Roux, N., & Herbst, D. (2004). Psychological assessment in South Africa: a needs analysis: the test use patterns and needs of psychological assessment practitioners: final report. July.

³⁶ Van Wijk, C. H., & Fourie, M. (2017). The appropriateness of using the self-directed search questionnaire in developing countries: a pilot study with South African navy divers. *Open Journal of Social Sciences*, 5(2), 60-69.

³⁷ De Bruin, G. P., & Lew, C. C. (2006). Canonical correlation analysis of the career attitudes and strategies inventory and the adult career concerns inventory. *SA Journal of Industrial Psychology*, 32(3), 43-48.

³⁸ Rabie, S. (2017). A translation and psychometric investigation of the South African Career Interest Inventory across gender and race among secondary school learners (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Career Development Questionnaire (CDQ)	Higher than 0.90 ³⁹	Relatively high	Adequate psychometric properties	Previously disadvantaged youths
Career Portfolio (Curriculum based) Not a test	N/A	N/A	Invaluable ⁴⁰	Used by educators and learners
Career Portfolio (General) Not a test	N/A	N/A	Acceptable	Adults

Source: Mindmuzik Media 2021

While these tests are used mostly in schools, most Life Orientation teachers responsible for careers in the curriculum are not trained or qualified to administer them. Generally, educational psychologists administer these tests, but the majority of them are only found in urban schools. Socio-economic issues play a critical role in the availability of the tests in rural schools. Many rural schools might find career assessment a luxury they might not afford. Therefore, most schools would expose their learners to careers through career fairs.

Career assessments developers in South Africa

Foxcroft (1997) identified two largest developers of psychometric tests in South Africa as the Institute for Psychological and Edumetric Research (IPER) and the National Institute for Personnel Research (NIPR) of the Human Sciences Research Council (HSRC⁴¹). The edumetric- psychometric distinction is important for this report as it provides an alternative to both psychometric and non-psychometric domains which fall under the rubric of psychological domains. The test development unit at the HSRC was dissolved in 1994⁴², creating opportunities for test developers to find opportunities either in private practice, universities or open their own enterprises⁴³.

South Africa's development of original career assessment instruments paints a bleak picture, thus allowing for overreliance on internationally developed tests scarcely normed and standardised for local populations⁴⁴. The private organisations develop varieties of tests that

³⁹ Hoorn, C. (2013). Career Maturity amongst first year university students in a commerce faculty at a tertiary institution in the Western Cape (Doctoral dissertation, University of the Western Cape).

⁴⁰ Du Toit, F. G. (2010). An evaluation of a career guidance programme in rural schools in Mpumalanga. Unpublished Master's thesis). University of Johannesburg, Johannesburg, South Africa.

⁴¹ Foxcroft, C. D. (1997). Psychological Testing in South Africa: Perspectives Regarding Ethical and Fair Practices. *European Journal of Psychological Assessment*, 13(3), 229-235.

⁴² Laher, S., & Cockcroft, K. (2014). Psychological assessment in post-apartheid South Africa: The way forward. *South African Journal of Psychology*, 44(3), 303-314.

⁴³ Meiring, D., & Buckett, A. (2016). Best practice guidelines for the use of the assessment centre method in South Africa. *SA Journal of Industrial Psychology*, 42(1), 01-15.

⁴⁴ Stead, G. B., & Watson, M. B. (1998). Career research in South Africa: Challenges for the future. *Journal of Vocational Behavior*, 52(3), 289-299.

are not only focused on career assessment. Aptitude tests seem to be more popular and less focus is given towards career assessment, however, a more eclectic approach is adopted.

Institutions of higher learning also play a pivotal role in career assessment test development. However, a skills gap in test development exists in South Africa⁴⁵. Some test developers include: The My System of Career Influences (MSCI⁴⁶; McMahon, Patton, & Watson, 2005; McMahon, Watson & Patton, 2005), the Maree Career Matrix ⁴⁷(MCM) and the South African Personality Inventory ⁴⁸(SAPI). Table 3 presents some of the psychometric assessments currently available.

Table 5: Test developers RSA

Encapsulate - Psychometric Assessment ⁴⁹ - https://www.encapsulate.co.za/		
Products	Types	
Online Skills Assessments	Competency assessments	Technical skills assessment
Online Assessment Tools	Personality assessment	Entry-level assessment
Psychometric Assessments	Competency assessment	Improve hiring quality by 50%
Career & Subject Choice	Career choice assessment	Subject choice assessment
HFMTalentindex ⁵⁰ - https://www.hfmentalentindex.co.za/		
Products	Types	
Volume Candidate Screening	Accurate predictor of job success	Candidate ranking, analytics and comprehensive reports
Online Selection Assessment	Complete battery of online selection assessments in 90 minutes	Competency-based results in relation to the role
Learning Agility Assessments	selection, development and talent management	South Africa's 1st validated Learning Agility measurements
Online Development Assessment	Gauge which development is feasible	The report is directly available online
Psychometric Assessment BIOSS ⁵¹ SA - https://www.bioss.co.za		
Products	Types	
Capability Interviews	Career Path Appreciation (CPA)	Modified Career Path Appreciation (MCPA)
ELDI 360° (individual's self-assessment)	Professional Competence	Conceptual Flexibility
PsyMetrics Assessments (over 20 assessment)	Cognitive / Skills	Competency-Based
JvR Psychometrics ⁵² . JvR Africa Group - https://jvrafricagroup.co.za		
Products	Types	
Career Interest Profile ® Version 6(CIP v6)	Assessment Scales (JvR Online/Soft copy) – HPCSA not Classified	AREAS OF APPLICATION • Educational settings • Career counselling settings • Career redirection setting • Mid-career guidance
Career Values Scale (CVS)	Assessment Scales	AREAS OF APPLICATION

⁴⁵ Laher, S., & Cockcroft, K. (2014). Psychological assessment in post-apartheid South Africa: The way forward. *South African Journal of Psychology*, 44(3), 303-314.

⁴⁶ McMahon, M., & Patton, W. (2015). Incorporating career assessment into career counselling. In *Career Assessment* (pp. 49-58). Brill Sense.

⁴⁷ Maree, J. G. (2016). Maree Career Matrix. Randburg, South Africa: JvR Psychometrics.

⁴⁸ Hill, C., Nel, J.A., Van de Vijver, F.J.R, Meiring, D., Valchev, V.H., Adams, B.G. et al. (2013). Developing and testing items for the South African Personality Inventory (SAPI). *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, 39(1), Art. #1122, 13 pages. <http://dx.doi.org/10.4102/sajip.v39i1.1122>

⁴⁹ <https://encapsulate.co.za/contact-us/>

⁵⁰ <https://www.hfmentalentindex.co.za/>

⁵¹ <https://www.bioss.co.za/what-we-do/psychometric-assessment/>

⁵² <https://jvrafricagroup.co.za/catalogue/maree-career-matrix>

		<ul style="list-style-type: none"> • Career directions • Individual development
Maree Career Matrix (MCM) – HPCSA certificate	Assessment Scales	AREAS OF APPLICATION <ul style="list-style-type: none"> • Exploring new avenues in career development for clients. • Pinpointing areas of academic study that can build skills, and as a result increase career options. • Supporting personal counselling by identifying career areas that can be explored to help meet individuals' career journey needs. • Examining individuals' career-related self-concept and self-efficacy.
The PISA Psychometric Assessment Centre ⁵³- https://psytest.co.za/gr-10-12-career-guidance-assessments/		
Products		Types
Aptitude test for school beginners	School Readiness Assessment	Aptitude Test for School Beginners Brochure
Gr 7 - 9 career guidance assessments	Aptitude Test - Differential Aptitude Test (DAT)	Personality Profiling - Jung Personality Questionnaire (JPQ)
Gr 10 - 12 career guidance assessments	Personality Profiling - Jung Personality Questionnaire (JPQ)	Interest Questionnaires - South African Vocational Interest Inventory (SAVII)

Quality assurance and compliance measures in place

Quality assurance and compliance measures in career assessment must be directly linked to professional code of ethics within the field of test development. The principal custodian of quality assurance is the HPCSA. The council oversees through its processes of certifying and classifying the tests, that quality assured tests are made available and are administered only by professionals qualified to do so. The following legal frameworks are fundamental to quality assurance and compliance: *Employment Equity Act (No. 55. of 1998)*, *Employment Equity Amendment Act (No. 47 of 2013)* and *the Health Professions Act 56/1974 (HPA)*. The scoping exercise conducted in Australia identifies *quality standards, quality practice, quality outcomes* ⁵⁴as fundamental to quality assurance and compliance. Assessment Standards South Africa (ASSA), a non-profit organisation has been given the responsibility to review and ensure tests carry high standards in terms of psychological properties they are designed to test.

As part of quality assurance in the globalised cyberspace, South Africa needs to ascertain whether the tests accessed online are self-assessed or administered through a practitioner. Web and computer career assessment is growing exponentially based on technological advancement. John Holland's Self-Directed Search (SDS) is a self-scored and self-administered career assessment instrument that is accessible online ⁵⁵. Although easy to relate

⁵³ <https://psytest.co.za/contact-us/>

⁵⁴ McMahan, M. (2004). Scoping Paper--Shaping a Career Development Culture: Quality Standards, Quality Practice, Quality Outcomes. Australian Government Department of Education, Science and Training.

⁵⁵ Dozier, V. C., Sampson, J. P., & Reardon, R. C. (2013). Using Two Different Self-Directed Search (SDS) Interpretive Materials: Implications for Career Assessment. *Professional Counselor*, 3(2), 67-72.

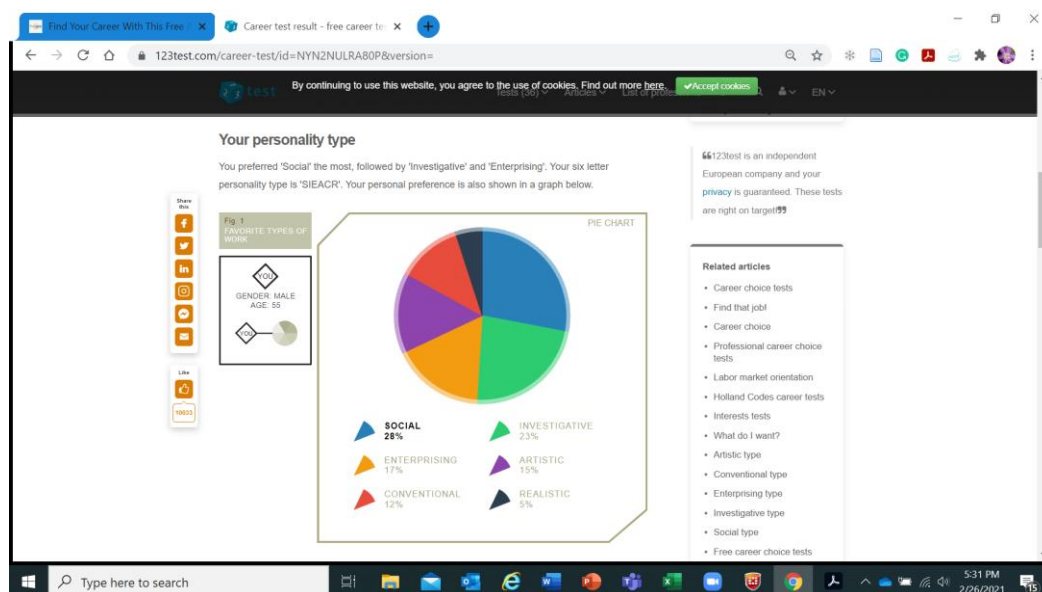
to, the self-scored results often need a career counsellor interpretation⁵⁶. If proper technology is in place, online assessment can also provide benefits of unsupervised test administration, reduction of errors and the economy of time⁵⁷. However, a margin of error will always be expected.

Compliance as mandated by the Employment Equity Act is still problematic in many respects. For instance, multi-cultural career measurement development is still in its infancy. Development of instruments that are non-psychological and qualitative is still very minimal although there are remnants of trans-language inclusion.

Interpretation of test results and follow-up

While computer generated results may be quick to obtain and interpretation may be required, according to Tredoux, controversy continues in South Africa over professional control over computerised testing. Psychology professionals are required to take personal responsibility for assessment work, but it is not clear how this is regulated since it is unclear if a policy exists for regulation. Similarly, no comprehensive research has been conducted on the use of tests in South Africa⁵⁸.

Figure 3: Sample of self-assessment report



⁵⁶ Barak, A. (2003). Ethical and professional issues in career assessment on the Internet. *Journal of Career Assessment*, 11(1), 3-21.

⁵⁷ Tredoux, N. (2013). 29 Using computerised and internet-based testing in South Africa. *Psychological*, 424.

⁵⁸ Foxcroft, C., Paterson, H., Le Roux, N., & Herbst, D. (2004). *Psychological assessment in South Africa: a needs analysis: the test use patterns and needs of psychological assessment practitioners: final report*. July.

Source: Self-developed

Figure 3 is an example of a test I took as a measure to see how the platform encourages the test taker to follow all the processes involved. Coincidentally the SDS is the instrument generally used as alluded to in this report that it is popular among the South African users. In most career exhibitions around the country, most presenters make use of the RIASEC model to explain and guide learners to understand different careers and how they can identify a career of choice. The model appears versatile to use through online and reports generated, like the one in figure 3 are relatively user friendly as they immediately point towards possible choices.

Platforms used to access the tests

Online platforms are used to provide access to varieties of services on the internet. In this report, online platforms refer to digital marketplaces, search engines and social media that advertise and make available career development services such as career assessments and others.

Platforms	Free	Paid
https://www.careerguidance.co.za/		X
https://www.mindconnect.co.za		X
https://www.fundi.co.za/fundiconnect/career-quiz/		Study Loans
https://omnicor.co.za/career-transition-systems/		Consultancy
https://www.careermap.co.za/		
https://www.careerhelp.org.za/	X	
http://www.pacecareers.com/footprint.html	X	
https://www.careerjunction.co.za/	X	

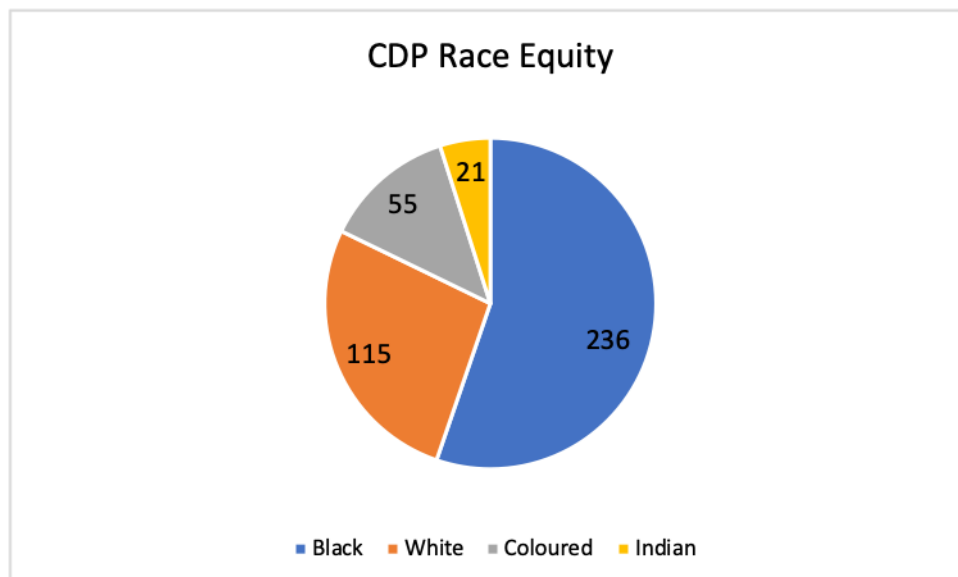
Career development practitioners

Career practitioners in South Africa is not a clearly defined group. Diverse people from different entities generally identify as practitioners. Career guidance is not currently the domain of one particular entity that is legally recognised and mandated to train and accredit practitioners. The South African Career Development Association (SACDA) is positioned to fill this gap once it is ready to fulfil the mandate. The environmental scan identifies practitioners as coming from: schools, workplaces, higher education, communities, the departments of labour and education and the private sector. In specific terms, career practitioners South Africa

could be regarded as; Life Orientation teachers, career information officers, career advisors and career guidance practitioners/career counsellors. In contrast, elsewhere the inclusion of counsellors is prohibited as they are regarded as trained and qualified people⁵⁹. Given the description above, career development practitioners imply anyone working in the field of career development, whether qualified, accredited or not. This state of affairs has to change in order for career development to be a focused field in South Africa.

In positioning itself for the role of developing standards for practice and practitioners, the gap in defining and demarcating who the career development practitioner is becomes crucial. Some general statistics of practitioners from SACDA are presented in this chapter even though not sufficiently disaggregated.

Figure 4: Career development practitioners by race

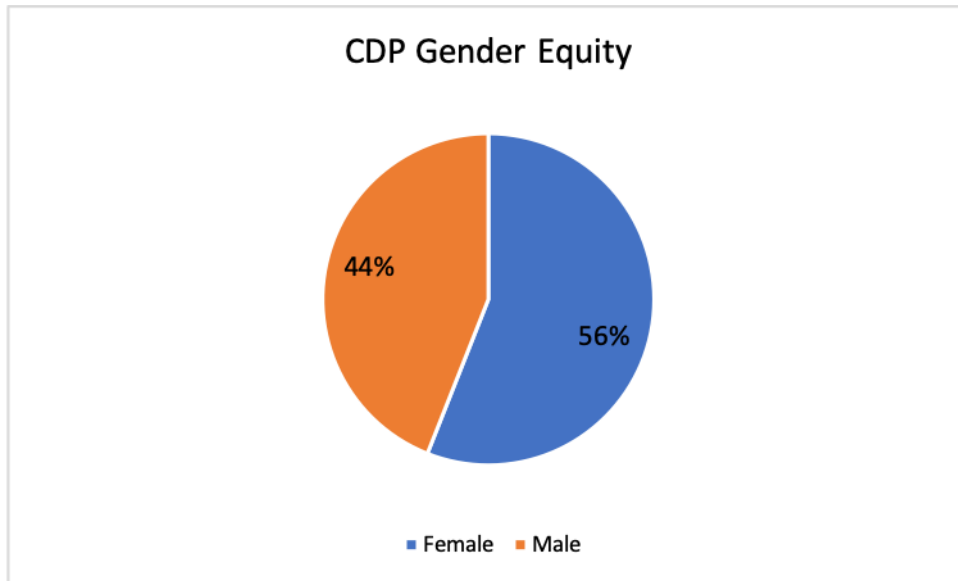


Source: SACDA 2021

The distribution of career practitioners by race is important for the social justice issue of equity. However, it is not clear what qualifications the practitioners hold relative to accreditation by SACDA. Further investigation is required to unpack the proportions of practitioners by the services they are qualified to offer to the consumers of career development services. Representation by gender is presented below.

⁵⁹ <https://career-dev-guidelines.org/wp-content/uploads/2015/06/Glossary.pdf>

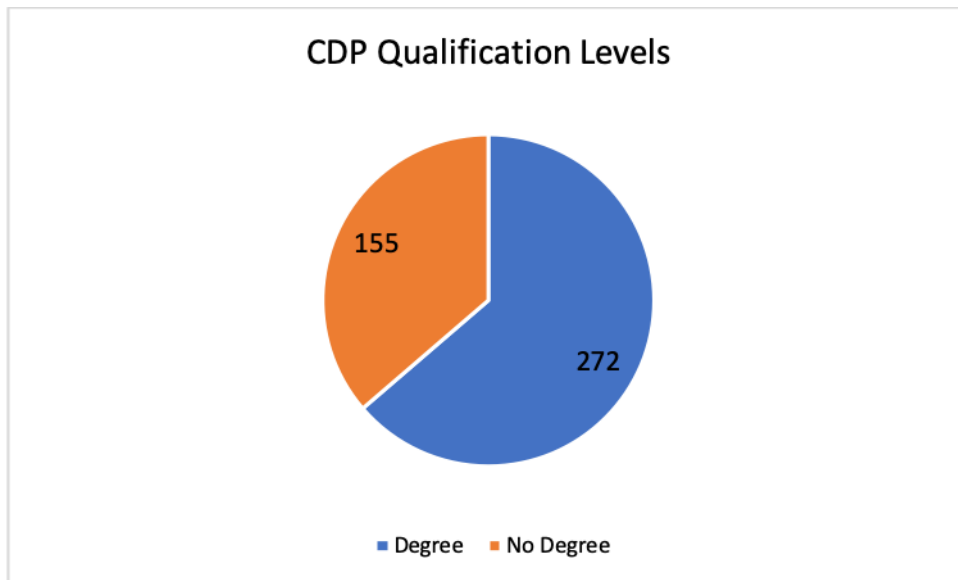
Figure 5: Career development practitioners by gender



Source: SACDA 2021

There appears to be a fair distribution between males and females. This is encouraging, given that the important fields of early childhood education, education and educational psychology may present less representation of males. Career practitioner representation of qualifications is presented below.

Figure 6: Career practitioner qualification levels



Source: SACDA 2021

According to figure 6 above, 36.30% of career practitioner does not have first degree. It is critical that further analysis of the types of qualifications career practitioners registered with SACDA is developed in order to provide a more holistic picture. As discussed earlier in the report, interpretation of career assessment results is critical, therefore, it requires adequately trained practitioners.

Stakeholders and beneficiaries

Essentially, stakeholders and beneficiaries of career development services, mainly career assessment, are the South African society. That career development is considered a lifelong and inclusive process provides that all citizens of South Africa be considered as stakeholders and beneficiaries. The list below was adapted from the environmental scan⁶⁰.

• SAQA
• South African College Principals Organisation
• Sector Education and Training Authorities (SETAs)
• National Artisan Moderation Body
• Department of Basic Education (DBE)
• All provincial education departments
• National Youth Development Agency (NYDA)
• Department of Labour (DoL)
• Department of Public Service and Administration (DPSA)
• Department of Correctional Services
• The Department of Higher Education and Training
• South African Career Development Association (SACDA)
• South African Graduate Development Association (SAGDA)
• Higher Education South Africa (HESA)

This list may not be exhaustive, and it is expected to change as the context demands. However, it may be necessary to tighten its advocacy skills so that more practitioners take part in the activities of the association as stakeholders.

⁶⁰ South African Qualifications Authority (SAQA). (2012). An environmental scan of career advice services in South Africa 2012. Pretoria, South Africa: SAQA.

DISCUSSION

Literature reviewed in this study positively identified gaps and enablers for suggestions towards the development of guidelines. Due to historical influences on career assessment, use of terminology was found to be challenging. Literature presents both psychometric and non-psychometric assessments as psychological assessments⁶¹. If this approach is followed and accepted, then need arises for alternative terminology that will not cause controversy that it is addressing psychology related issues.

Literature points towards embracing contemporary approaches to career assessment. Emerging from the philosophical underpinnings of constructivism, more emic approaches to assessment are encouraged where indigenous perceptions of personality and individual understanding and interpretation on own experiences are validated. An outcry of non-availability of training of psychometrists was found to be a critical problem in South Africa. However, it is also identified as a global phenomenon. This observation however, skews favour towards psychometry and deemphasises opportunities for development of non-psychological/non-psychometric assessments that address the language barriers in current assessment instruments. The scan revealed that career assessment is not well developed and distinguishable from other psychometric assessments in South Africa.

Policy context regarding assessment as a whole is trapped by the harmful beneficence complex. While the policies appear to safeguard the wellbeing of assessment beneficiaries, by design the discriminate against the majority of the populations with less resources, those who cannot afford to pay for psychological services. The prohibition for non-psychologists, non-registered practitioners to not use psychometric tests appear to be anti social equity. If no alternative assessment tools are allowed, both practitioners and users of career assessments will continuously be segregated.

Very few assessment instruments were found to be developed locally. The standardizations and norming of internationally acquired instruments still falls short of addressing the multi-cultural tapestry of the South African society. While it is appreciated that test development takes a long time, efforts to redress the legacy of the past do not seem to taken seriously. For instance, no evidence was found of test developers who represent the diversity of the South African society. Test development and distribution have turned to be exclusionary lucrative enterprises with perhaps very little sense of social responsibility.

⁶¹ Slaney, K., & Garcia, D. (2015). Constructing Psychological Objects: The Rhetoric of Constructs. *Journal of Theoretical and Philosophical Psychology*, 35(4), 244-259.

The online space is presenting both challenges and opportunities. While South Africa has policies in place to regulate test usage, it has no jurisdiction in the cyberspace. The internet has opened up spaces for self-searches with little information on the authenticity of tests easily available. The heavy-handed control on the use of psychometric assessments by unregistered persons may face challenges in this space.

Career development practitioners present another unclear aspect of the career development field in South Africa. It is not clear who is considered a career practitioner and what the meaning thereof is. Although a gap, this is equally an opportunity for CDS and SACDA to provide guidance into the correct terminology to be used. However, in the bigger scheme of things, SACDA stands a chance to provide direction along with the HPCSA. It would be in the interest of the society if there could be openness and synergy in resolving the challenges faced by career development in South Africa.

Gaps and enablers

The study identified various gaps and enablers to be used for recommendation for the project.

Table 6: Gaps and enablers of career assessment

Gaps	Enablers	Opportunities identified
Social equity gap	Alternative assessments	Inclusive approaches
Policy silent on services of career assessment	CDS to develop Guidelines	Recommendations for inclusion in policy review
Literature drought that directly addresses career assessment	Research on career assessment	Multi-disciplinary research
No alternative to positivist assessments	Qualitative career assessments	Indigenous narratives
Career assessment test development	Universities and professional bodies	Benchmarking internationally
Career development practitioner mapping	SACDA and stakeholders	SACDA and stakeholders
Career development practitioner standards	SACDA and Stakeholders	SACDA's mandate

The social equity gap in career development assessment may be addressed through alternative assessments that emphasise assessing the viability not validity⁶². The National

⁶² Neimeyer, G. J. (Ed.). (1993). Counseling psychologist casebook series, Vol. 2. Constructivist assessment: A casebook. Sage Publications, Inc.

Policy for an Integrated Career Development Systems for South Africa does not provide guidelines on career assessment services, it is silent⁶³. Literature drought that directly addresses career assessment may benefit from greater use of narrative assessment⁶⁴. Indigenous narrative assessment home-grown instruments may address the no alternative to positivist assessments on the basis of the need for fair testing practices⁶⁵. Career assessment test development in South Africa requires to follow a paradigm shift and become more inclusive. South African universities ought not to relinquish the training task to other institutions. Career development practitioner mapping is urgently required for purposes of accountability. SACDA needs to urgently implement its mandate to develop career practitioner standards. Similarly, “the context of a country like South Africa also poses an access problem; many citizens and communities do not have access to ICT infrastructure such as computers. However, in this case, a⁶⁶ channel like a mobile phone makes information more accessible”.

The framework outlined in Figure 7 depicts concepts and relationships that could be used as lenses for developing the career assessment guidelines. The framework argues that alternative ways of assessing have to be promulgated and developed for there to be social equity in accessing career development assessment.

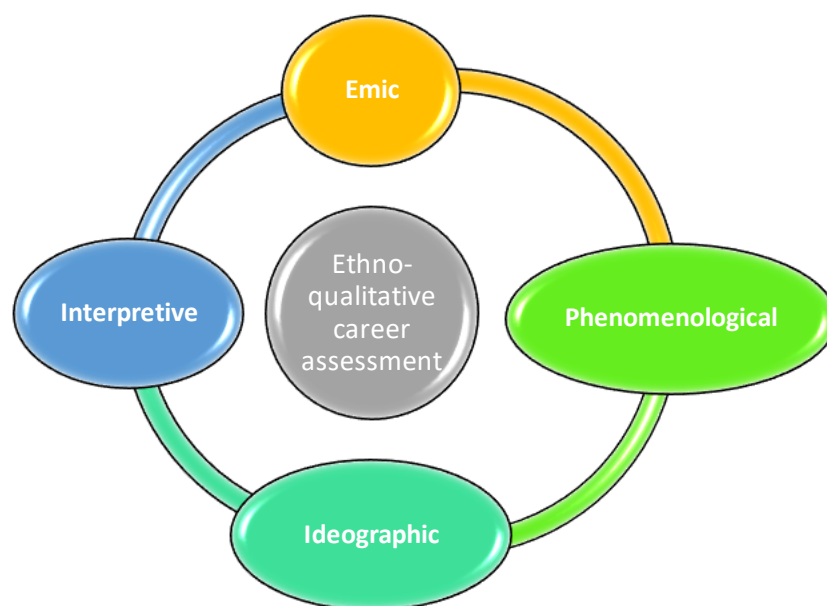
⁶³ Department of Higher Education and Training (2012). Framework for Cooperation in the Provision of Career Development (Information, Advice and Guidance) Services in South Africa. Retrieved from: www.dhet.gov.za

⁶⁴ McMahon, M., Watson, M., & Lee, M. C. (2019). Qualitative career assessment: A review and reconsideration. *Journal of Vocational Behavior*, 110, 420-432.

⁶⁵ Foxcroft, C. D. (1997). Psychological Testing in South Africa: Perspectives Regarding Ethical and Fair Practices. *European Journal of Psychological Assessment*, 13(3), 229-235.

⁶⁶ South African Qualifications Authority (SAQA). (2012). An environmental scan of career advice services in South Africa 2012. Pretoria, South Africa: SAQA.

Figure 7: conceptual mapping: Constructivist ethno-qualitative career assessment



The emic approach to career assessment instruments development appears fundamental for equity in accessing the tests on the basis of culture and language⁶⁷. The ideographic approach focused on idiosyncratic personal constructs that promote deep personal significance⁶⁸. The interpretivist approach fosters self-agency in human action⁶⁹, such as career assessment. The phenomenological approach promotes lived experiences which can be interpreted hermeneutically to determine the essence of the phenomenon⁷⁰.

FINAL CONCLUSIONS AND RECOMMENDATIONS

This report has pooled together information that is deemed relevant to be used in developing guidelines for career assessment tools. General observations from literature indicate the need to develop context relevant instruments. This is not a problem only peculiar to career assessment, it is also prevalent in other psychometric assessments. South Africa presents a challenging social and cultural context, where the multiple cultures and languages in the country are a challenge for developing instruments that will accommodate them all. However, the study found that constructivist approaches are better positioned to provide fertile ground

⁶⁷ Laher, S., & Cockcroft, K. (2014). Psychological assessment in post-apartheid South Africa: The way forward. *South African Journal of Psychology*, 44(3), 303-314.

⁶⁸ Neimeyer, G. J. (Ed.). (1993). *Counseling psychologist casebook series, Vol. 2. Constructivist assessment: A casebook*. Sage Publications, Inc.

⁶⁹ Neimeyer, G. J. (Ed.). (1993). *Counseling psychologist casebook series, Vol. 2. Constructivist assessment: A casebook*. Sage Publications, Inc.

⁷⁰ Giorgi, A. (2008). Difficulties encountered in the application of the phenomenological method in the social sciences. *Indo-Pacific Journal of Phenomenology*, 8(1), 1-9.

though qualitative, narrative and culturally based ways of assessing people. If the great impediment identified, harmful benevolence, could be addressed while maintaining quality, equitable career assessment could redress the marginalised majority currently not accessing the services.

It appears plausible from engagement with literature that some suggestions for guidelines may be considered. Table 7 presents recommendations developed from the scoping exercise undertaken for this study.

Table 7: Recommendations for guidelines

Developing the career assessment guidelines
<ul style="list-style-type: none"> • Engage legal entities to redress harmful benevolence in relation to career assessment services.
<ul style="list-style-type: none"> • Empower CDS to mobilise career assessment (non-psychometric) instrument development.
<ul style="list-style-type: none"> • Support SACDA in its mandate to develop career practitioner standards to match the competencies.
<ul style="list-style-type: none"> • Develop a career assessment training course to be delivered through higher education institutions and private sector.
Key stakeholders
<ul style="list-style-type: none"> • Conduct a mapping exercise and skills audit of career practitioners.
<ul style="list-style-type: none"> • Conduct a mapping exercise of internal and external stakeholders for career development services.

<ul style="list-style-type: none"> • Mobilise utilisation of CDS career centres and encourage stakeholder to share their experiences through the <i>African Journal of Career Development</i> as the main channel.
<ul style="list-style-type: none"> • Establish synergy with the HPCSA.
<p>Designing the virtual study tour</p>
<ul style="list-style-type: none"> • Extend the virtual tour beyond the EU to find best practices around the globe.
<ul style="list-style-type: none"> • Include non-registered career practitioners to share their experiences of career assessment and the instruments they use.
<ul style="list-style-type: none"> • Develop a network that will continue to support the effort beyond the project.

Source: Self-developed from literature

Annexure A: Sources

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8(1), 19-32.

Barak, A. (2003). Ethical and professional issues in career assessment on the Internet. *Journal of Career Assessment*, 11(1), 3-21.

Bemath, N. (2020). Relevance of the person-environment fit approach to career assessment in South Africa –A review. *African Journal of Psychological Assessment*, 2(0), a22. <https://doi.org/10.4102/ajopa.v2i0.22>

Bidoli, D. (2002). An introduction to psychological assessment in the South African context, C. Foxcroft and G. Roodt (Eds.): book review. *South African Journal of Psychology*, 32(1), 66-68.

Carver, R. (1974). Two dimensions of tests: Psychometric and edumetric. *American Psychologist*, 29(7), 512-518.

Charlton, P., Doucet, S., Azar, R., Nagel, D. A., Boulos, L., Luke, A., ... & Montelpare, W. J. (2019). The use of the environmental scan in health services delivery research: a scoping review protocol. *BMJ open*, 9(9), e029805.

Chibba, M., & Luiz, J. M. (2011). Poverty, inequality and unemployment in South Africa: Context, issues and the way forward. *Economic Papers: A journal of applied economics and policy*, 30(3), 307-315.

Cohen, R. J., & Swerdlik, M. E. (2017). *Psychological testing and assessment* (9th ed.). McGraw-Hill Education.

De Bruin, G. P., & Lew, C. C. (2006). Canonical correlation analysis of the career attitudes and strategies inventory and the adult career concerns inventory. *SA Journal of Industrial Psychology*, 32(3), 43-48.

Department of Higher Education and Training (2012). *Framework for Cooperation in the Provision of Career Development (Information, Advice and Guidance) Services in South Africa*. Retrieved from: www.dhet.gov.za

Dozier, V. C., Sampson, J. P., & Reardon, R. C. (2013). Using Two Different Self-Directed Search (SDS) Interpretive Materials: Implications for Career Assessment. *Professional Counselor*, 3(2), 67-72.

Du Toit, F. G. (2010). *An evaluation of a career guidance programme in rural schools in Mpumalanga*. Unpublished Master's thesis). University of Johannesburg, Johannesburg, South Africa.

Foxcroft, C. D. (1997). Psychological Testing in South Africa: Perspectives Regarding Ethical and Fair Practices. *European Journal of Psychological Assessment*, 13(3), 229-235.

Foxcroft, C., Paterson, H., Le Roux, N., & Herbst, D. (2004). *Psychological assessment in South Africa: a needs analysis: the test use patterns and needs of psychological assessment practitioners: final report*. July.

Fried, E. I. (2017). What are psychological constructs? On the nature and statistical modelling of emotions, intelligence, personality traits and mental disorders. *Health psychology review*, 11(2), 130-134.

Giorgi, A. (2008). Difficulties encountered in the application of the phenomenological method in the social sciences. *Indo-Pacific Journal of Phenomenology*, 8(1), 1-9.

Hill, C., Nel, J.A., Van de Vijver, F.J.R, Meiring, D., Valchev, V.H., Adams, B.G. et al. (2013). Developing and testing items for the South African Personality Inventory (SAPI). *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, 39(1), Art. #1122, 13 pages.

Hoorn, C. (2013). *Career Maturity amongst first year university students in a commerce faculty at a tertiary institution in the Western Cape* (Doctoral dissertation, University of the Western Cape).

<http://dx.doi.org/10.4102/sajip.v39i1.1122>

<https://career-dev-guidelines.org/wp-content/uploads/2015/06/Glossary.pdf>

<https://career-dev-guidelines.org/wp-content/uploads/2015/06/Glossary.pdf>

<https://encapsulate.co.za/contact-us/>

<https://jvrafricagroup.co.za/catalogue/maree-career-matrix>

<https://psytest.co.za/contact-us/>

<https://www.bioss.co.za/what-we-do/psychometric-assessment/>

<https://www.hfmentalentindex.co.za/>

Laher, S., & Cockcroft, K. (2013). Contextualising psychological assessment in South Africa. *Psychological assessment in South Africa: Research and applications*, 1-16.

Laher, S., & Cockcroft, K. (2013). Current and future trends in psychological assessment in South Africa: Challenges and opportunities. *Psychological assessment in South Africa: Research and applications*, 535-552.

Laher, S., & Cockcroft, K. (2014). Psychological assessment in post-apartheid South Africa: The way forward. *South African Journal of Psychology*, 44(3), 303-314.

Maree, J. G. (2010). Brief overview of the advancement of postmodern approaches to career counseling. *Journal of Psychology in Africa*, 20(3), 361-367.

Maree, J. G. (2016). *Maree Career Matrix*. Randburg, South Africa: JvR Psychometrics.

McIlveen, P., & Patton, W. (2006). A critical reflection on career development. *International Journal for Educational and Vocational Guidance*, 6(1), 15-27.

McMahon, M. (2004). *Scoping Paper--Shaping a Career Development Culture: Quality Standards, Quality Practice, Quality Outcomes*. Australian Government Department of Education, Science and Training.

McMahon, M., & Patton, W. (2015). Incorporating career assessment into career counselling. In *Career Assessment* (pp. 49-58). Brill Sense.

McMahon, M., Patton, W., & Watson, M. (2003). Developing qualitative career assessment processes. *The Career Development Quarterly*, 51(3), 194-202.

McMahon, M., Watson, M., & Lee, M. C. (2019). Qualitative career assessment: A review and reconsideration. *Journal of Vocational Behavior*, 110, 420-432.

Meiring, D., & Buckett, A. (2016). Best practice guidelines for the use of the assessment centre method in South Africa. *SA Journal of Industrial Psychology*, 42(1), 01-15.

Merenda, P. F. (2004) Psychometric tests. In Spielberger, C. D. (Ed.), *Encyclopedia of applied psychology*. San Diego, CA: Academic Press. Pp. 185–189.

Modiba, M. R., & Sefotho, M. M. (2019). Life orientation teacher training needs in career guidance at rural high schools. *South African Journal of Education*, 39(1).

Neimeyer, G. J. (Ed.). (1993). *Counseling psychologist casebook series, Vol. 2. Constructivist assessment: A casebook*. Sage Publications, Inc.

Owen, K. (1998). *The role of psychological tests in education in South Africa: Issues, controversies, and benefits*. HSRC Press.

Pillay, A. L. (2020). Prioritising career guidance and development services in post-apartheid South Africa. *African Journal of Career Development*, 2(1), 1-5.

- Rabie, S. (2017). A translation and psychometric investigation of the South African Career Interest Inventory across gender and race among secondary school learners (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Rivera, L. (2011). Harmful beneficence. *Journal of Moral Philosophy*, 8(2), 197-222.
- Rogan, M. (2016). Gender and multidimensional poverty in South Africa: Applying the global multidimensional poverty index (MPI). *Social Indicators Research*, 126(3), 987-1006.
- Setshedi, M. J. (2008). Investigating the use of psychological assessment in South African schools (Doctoral dissertation, University of the Witwatersrand).
- Slaney, K., & Garcia, D. (2015). Constructing Psychological Objects: The Rhetoric of Constructs. *Journal of Theoretical and Philosophical Psychology*, 35(4), 244-259.
- South African Qualifications Authority (SAQA). (2012). An environmental scan of career advice services in South Africa 2012. Pretoria, South Africa: SAQA.
- Statistics South Africa (StatsSA). (2021). P0211 - Quarterly Labour Force Survey (QLFS), 4th Quarter 2020. Retrieved from: <http://www.statssa.gov.za>
- Stead, G. B., & Watson, M. B. (1998). Career research in South Africa: Challenges for the future. *Journal of Vocational Behavior*, 52(3), 289-299.
- Tredoux, N. (2013). 29 Using computerised and internet-based testing in South Africa. *Psychological*, 424.
- Van Wijk, C. H., & Fourie, M. (2017). The appropriateness of using the self-directed search questionnaire in developing countries: a pilot study with South African navy divers. *Open Journal of Social Sciences*, 5(2), 60-69.