

**Career Adapt-Abilities Scale - South African Form:  
Psychometric Properties and Construct Validity**

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**Abstract**

The Career Adapt-Abilities Scale – South African Form (CAAS) consists of four scales, each with six items that measure concern, control, curiosity, and confidence as psychosocial resources for managing occupational transitions, developmental tasks and work traumas. Internal consistency estimates for the subscale and total scores ranged from good to excellent. The factor structure was similar to the structure computed for combined data from 13 countries.

The South African population of roughly 50 million people comprises approximately 39.5 million blacks, five million whites, 4.5 million coloureds (people of mixed origin) and slightly more than one million Indians or Asians (Statistics South Africa, 2009). However, despite the fact that the vast majority of South Africans are Blacks, the term minority group was applied socio-politically in the past to Black South Africans and excludes the true minority groups of Indians, Whites and Orientals (Sibaya, Hlongwane & Makunga, 1996).

South Africa is diverse in its races, tribes, creeds, and 11 official languages -- nine of which are indigenous languages (The Rainbow Nation, 2010). Most South Africans speak more than one language and can communicate in English, which is widely used in official business and is the first (home) language of ten percent of South Africans. Zulu, Xhosa, Afrikaans, Pedi, Tswana, English and Sotho (in that order) are the languages with the most native speakers (The Rainbow Nation, 2010). Most South Africans are Christians – the South African Constitution guarantees freedom of religion and speech (Oakland, Wechsler, & Maree, in press).

In 1994, South Africa officially overturned apartheid. Nevertheless, many of the conditions that influenced test development and use during the apartheid era remain evident. For example, significant differences in school quality continue for White and Black learners as well as for learners living in poor rural areas, in townships, and the inner-city (Maree & Mokhuane, 2007). Regarding the educational support system in South Africa, the quality of the educational services provided to indigent Blacks is considerably lower than that provided to learners from affluent families (most of whom are white although the economic situation of many Black families is improving rapidly). It is especially at the Black schools in deprived socioeconomic contexts that the quality of education remains so poor despite the fact that South Africa spends a higher percentage of its gross national income on education than any other country in Africa.

Inadequate achievement in the gateway (to university study) subjects of mathematics and physical sciences is particularly noticeable among Black learners. An outcomes-based education system was introduced in 1997, but the results have been less than satisfactory, and a new education system will be introduced in 2012. Because of their generally poor achievement in Grade 12 examinations, numerous Black students still do not have access to sought-after fields of studies such as engineering. To exacerbate matters still further, close to 40% of students fail their first year of study -- especially students from traditionally disadvantaged communities (Mkhabela, 2004; Pandor, 2005, 2008). Many reasons can be advanced for this state of affairs including the fact that most Black learners, in particular, receive no or little career counselling at school. Their choice of a particular field of study is consequently often based on inadequate information.

Some social scientists believe that psychological tests on crystallized abilities (manifest abilities that develop over time) serve to maintain apartheid-established differences (Sehlapelo & Terre Blanche, 1996; Stead, 2002; Vandeyar, 2007). Issues associated with race and social and economic status are intertwined, including deprivation, which is getting steadily worse among the population. This is manifested in malnutrition, educational deprivation, poverty, unemployment, crime, and widespread reliance on government grants for survival.

International trends that emphasize applied research over basic research have also pertained in South Africa (Painter & Terre Blanche, 2004). Psychological testing, as one example of applied research, was introduced at the beginning of the 20<sup>th</sup> century when South Africa was a British colony. European and North American scholarship and technology have generally been accepted in South Africa and have provided the basis for the research conducted here. This scholarship and technology was most relevant to White South Africans (Stead & Watson, 1998).

Measures of aptitude, achievement and personality were developed mainly for use with the White population along with some parallel test forms for Black students including tests with separate racial norms. Few tests have been designed specifically for South Africa's diverse and largely Black population (Claassen, 1995; Foxcroft, 1997; Owen, 1991).

While the Career Adapt-Abilities Scale (CAAS)-International Form 2.0 has demonstrated excellent reliability and appropriate cross-national measurement equivalence (Savickas & Porfeli, this issue), its validity for use in South Africa needs further investigation. This article describes the CAAS-South African Form and reports on its psychometric properties including item statistics and internal consistency estimates. This research also compared the factor structure of the CAAS-South Africa with the multidimensional, hierarchical measurement model of the CAAS-International. No additional inventories were included.

## **Method**

### **Participants**

A total of 435 participants with a mean age of 15.49 years ( $SD = 1.32$ ) voluntarily completed the CAAS-South Africa. The sample consisted of 59.1% girls, 92.18% Africans, 7.36% Caucasians, .23% Asians, and .23% other races or biracial. Purposeful sampling ( $n = 469$ ) was used in the study. Grade 9 and 11 learners from the three English-medium secondary schools in the Molopo area in Mafikeng (two of which were public schools and one a private school) participated in the study. All three schools were integrated (multiracial) with English the language of instruction. The mother tongue of the learners was any of the 11 official South African languages as well as any other African language.

Permission to conduct the research and publish the findings was requested and obtained in writing from the North-West Department of Education, the participating schools and the

learners and their parents. Assurance was given that no individual participants would be identified.

## **Measure**

**Career Adapt-Abilities Scale – South African Form.** The CAAS-International Form contains 24 items that combine to yield a total score indicating career adaptability (for the items, see Savickas & Porfeli, this issue). The participants responded in English to each item on a scale from 1 (not strong) to 5 (strongest). The 24 items are divided equally into four subscales that measure the adapt-ability resources of concern, control, curiosity and confidence. The item descriptive statistics and loadings from the confirmatory factor model are shown in Table 1. The total score for the CAAS-International has a reported reliability of .92, which is higher than the subscale scores for concern (.83), control (.74), curiosity (.79) and confidence (.85) (Savickas & Porfeli, this issue). The reliabilities of the subscales for this sample are given in Table 1. The reliabilities were slightly lower than those for the total international sample. The reliability for the total score was .91, which was higher than the subscale scores for concern (.77), control (.71), curiosity (.78) and confidence (.80).

## **Results**

For the CAAS-South Africa, the mean for the total score was 3.88 with a standard deviation of .48. This compares to a mean score of 3.81 (SD = .53) for the CAAS- International. The item means and subscale standard deviations for the CAAS-South Africa appear in Table 1. The item means indicate that the typical response was in the range of strong to very strong. The skewness and kurtosis values for the CAAS-South Africa items ranged from -.112 to 0.04 and from -0.86 to 0.86 respectively, suggesting that the items conform to the assumptions of confirmatory factor analysis for this sample. The subscale mean scores and standard deviations

for the CAAS-South Africa appear in Table 1. The subscale means were similar for the South African and International Forms. The mean score for Concern was 3.99 in the South African Form and 3.82 in the International Form, Control was 3.98 in the South African Form compared to 3.92 in the International Form, Curiosity was 3.65 in the South African Form compared to 3.73 in the International Form, and Confidence was 3.75 in the South African Form compared to 3.87 in the International Form. The scale means and standard deviations for the CAAS-South Africa appear in Table 1. The skewness and kurtosis values for the CAAS-South Africa constructs ranged from -0.30 to 0.00 and from -0.58 to -0.28 respectively, suggesting that the items conform to the assumptions of correlation-based statistics for this sample. Furthermore, the four subscales correlated from 0.79 to 0.93 with the adaptability total score.

Confirmatory factor analysis (CFA) showed that data for the CAAS-South Africa fit the theoretical model very well. The fit indices were RMSEA = 0.046 and SRMR = 0.048, which is in line with established joint fit criteria (Hu & Bentler, 1999). The fit indices compare favourably with the fit indices for the CAAS-International model, which are RMSEA = 0.053 and SRMR = 0.039 (Savickas & Porfeli, this issue, Table 2, row M1b). The standardized loadings (see Table 1) suggest that all items are strong indicators of the second-order constructs, which are, in turn, strong indicators of the third-order adaptability construct.

A comparison of the CAAS-South Africa hierarchical factor model with the CAAS-International model indicates that the loadings of first-order items on the second-order factors of adaptability are very similar. The most notable differences are for curiosity 2 (Looking for opportunities to grow as a person) (.19) and confidence 3 (Learning new skills) (.22). Of the second-order constructs, the most notable differences are for concern (.77) and confidence (.80).

Based on the results of the statistical analyses reported here, I concluded that the CAAS-South Africa performs similarly to the CAAS-International in terms of psychometric characteristics and factor structure. In the study, the total scale and four subscales each demonstrated good to excellent internal consistency estimates and a coherent multidimensional, hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources. These results should bolster confidence that the CAAS-South Africa and CAAS-International function similarly.

### **Discussion**

Globally, qualitative approaches based on the elicitation of life stories and personal narratives have emerged strongly in recent decades. The consensus now is that a combined qualitative-quantitative approach, based on a deep sense of respect for clients, an emphasis on the meaning clients need to find in their lives and the difference they need to make in society, as well as their personal stories, can be used by practitioners to remedy previous shortcomings in the profession and help clients design their lives more meaningfully (Maree, in press).

It was correctly predicted some time ago that a small core of permanent employees, a sizeable number of workers whose sought-after skills were bought, and a large number of temporary workers would become commonplace in companies by the year 2000 (Handy, in Hughes, 1997). Today, in order to keep abreast of technological changes, workers have to become lifelong learners, receive ongoing training and acquire the skill to adapt to changing career contexts and deal with repeated transitions. They need to master cutting-edge technological skills in order to remain relevant in a highly competitive job market. Multi-skilling, for instance, is crucial.

Put differently, career adaptability has become fundamentally important for workers who must deal with repeated and escalating change and its effects on their lives, negotiate repeated transitions, and design successful lives. The 21<sup>st</sup> century labour market will dictate assessment strategies and control feedback to workers who should be encouraged to become critical thinkers, creative problem solvers, and skilled decision makers who can adapt to various demands made on them by various work contexts in order to become employable instead of being trained linearly for one specific job only.

Given the rising unemployment in South Africa, the issues outlined above are cause for grave concern, not only here but in many other developing countries as well. The situation in South Africa is exacerbated by the high failure rate of students at institutions of higher learning and the effect this has on the lives of millions of people and on the national economy where the required 6% economic growth rate is far from being achieved. The lack of career counselling contributes to high drop-out and failure rates during tertiary training, which reinforces the low social and economic position of poor and marginalized people in the country. Very few disadvantaged students ever receive adequate career counselling and often arrive at institutions of higher learning without a clear idea of what their prospective careers actually entail. Research also shows that intervention programmes to correct this situation have largely failed.

The government and society's disappointing response to the above dilemma is not the only reason for concern about the current state of career counselling in South African institutions of higher learning. South Africa has also done little in terms of indigenizing career counselling and advancing theory building in career counselling. This despite the fact that the fourth economic wave and the accompanying changes in the global economy of the 21<sup>st</sup> century have



radically altered the workplace and are influencing the theory and practice of career counselling throughout the world.

There is a pressing need for assessment instruments that can be administered to all South Africans to assist them to make viable career choices. This includes the need for instruments that can assess young people's career adaptability and enable career counsellors to help such people in particular become more capable of adapting to changing learning, studying and work contexts. The CAAS-South Africa is seemingly an ideal instrument that counsellors can use to assess their clients and help them acquire the skills referred to above. Based on the results reported here, the CAAS-South Africa can now apparently also be used by researchers and practitioners to measure adaptability resources among students. Further research will determine the CAAS-South Africa's validity for use with employed adults. However, given the success of the CAAS-International with employed adults, we believe that local researchers will soon begin to use the scale with adults who are anticipating occupational transitions.

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Table 1  
 Career Adapt-Abilities Scale: Items, Standardized Loadings, Descriptive Statistics and Internal Consistency Reliabilities.

<b>Construct</b>	<b>Item (First-Order Indicators)</b>	<b>Mean</b>	<b>SD</b>	<b>Loading</b>
Concern	1. Thinking about what my future will be like	4.31	0.81	0.55
	2. Realizing that today's choices shape my future	4.06	0.89	0.58
	3. Preparing for the future	3.80	0.87	0.69
	4. Becoming aware of the educational and career choices that I must make	3.73	0.85	0.63
	5. Planning how to achieve my goals	3.70	0.90	0.67
	6. Concerned about my career	4.34	0.80	0.46
Control	1. Keeping upbeat	3.60	0.81	0.48
	2. Making decisions by myself	4.05	0.88	0.51
	3. Taking responsibility for my actions	3.90	0.86	0.55
	4. Sticking up for my beliefs	4.23	0.83	0.57
	5. Counting on myself	4.09	0.81	0.57
	6. Doing what's right for me	4.04	0.77	0.59
Curiosity	1. Exploring my surroundings	3.59	0.92	0.58
	2. Looking for opportunities to grow as a person	3.96	0.87	0.61
	3. Investigating options before making a choice	3.60	0.89	0.65
	4. Observing different ways of doing things	3.53	0.86	0.67
	5. Probing deeply into questions I have	3.36	0.93	0.61
	6. Becoming curious about new opportunities	3.89	0.91	0.59
Confidence	1. Performing tasks efficiently	3.66	0.80	0.59
	2. Taking care to do things well	3.73	0.76	0.66
	3. Learning new skills	4.01	0.79	0.57
	4. Working up to my ability	3.79	0.80	0.66
	5. Overcoming obstacles	3.68	0.81	0.68
	6. Solving problems	3.62	0.90	0.65
<b>Construct</b>	<b>Construct (Second-Order Indicators)</b>	<b>Mean</b>	<b>SD</b>	<b>Loading</b>
Adaptability	1. Concern	3.99	0.58	0.79
	2. Control	3.98	0.53	0.87
	3. Curiosity	3.65	0.62	0.88
	4. Confidence	3.75	0.57	0.93

\*Note: All of the loadings are statistically significant at  $\alpha = 0.01$