AUSTRALIAN JOURNAL OF PSYCHOLOGY
2022, VOL. 74, NO. 1, e2121177 (11 pages)
https://doi.org/10.1080/00049530.2022.2121177

Psychometric properties, measurement invariance, and construct validity of the subjective career success inventory

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ABSTRACT

With the increased scholarly interest in career success measurements, this study investigated the construct validity and measurement invariance of the Subjective Career Success Inventory. A sample of 736 South African employees participated in the study. Latent variable modelling was performed to estimate and sequentially compare several independent cluster models of confirmatory factor analysis (ICM-CFA) (i.e., unidimensional, first-factor, second-factor, and bifactor models). The results supported the construct validity for an eight-dimensional construct with acceptable convergent and discriminant validity. We found measurement invariance across gender. Task performance was related to the eight subjective career success dimensions, providing evidence of nomological validity.

KEY POINTS

What is already known about this topic:

(1) The Subjective Career Success Inventory (SCSI) is increasingly being used to measure subjective career success, but studies reporting comprehensive psychometric properties for the SCSI are scarce.
(2) Literature indicates various factorial permutations for the instrument, and limited validation studies have been conducted on the SCSI.
(3) Although scholars have argued gender gaps in the experiences of career success, a thorough investigation of the SCSI has not been done to corroborate such differences.

What this topic adds:

(1) The eight-factor structure of the SCSI was confirmed within the South African context.
(2) The SCSI demonstrated invariance between males and females.
(3) Task performance was related to the eight SCSI dimensions, providing evidence of nomological validity.

ARTICLE HISTORY
Received 24 February 2022
Accepted 29 August 2022

KEYWORDS
Bifactor confirmatory factor analyses; construct validity; gender; measurement invariance; subjective career success

Introduction

Rapidly changing work environments, work structures and the introduction of new technologies have changed the world of work and, by implication, the career landscape significantly (International Labour Organization [ILO], 2019). Careers are becoming boundaryless, fragmented, global, diverse, and flexible, thus pivotal to career success (Hirschi & Koen, 2021). Although career success has predominantly been conceptualised and measured objectively (e.g., salary, promotions) (Ng & Feldman, 2014), how employees perceive success within these new changing career contexts is shifting. It has resulted in continuous scholarly interest in the more subjective component of career success (Spurk, 2021). It became important to measure these subjective components within the modern career landscape to assist organisations in designing jobs that will support the achievement of success in these subjective factors to influence the career commitment, productivity and tenure of employees (Shockley et al., 2016).

Incidentally, earlier literature points to three groups of subjective career success measures: 1) career satisfaction measurements, 2) studies measuring an overall perception of success, and 3), more recently, multidimensional measures of subjective career success. Concerning the latter, Shockley et al. (2016) developed the Subjective Career Success Inventory (SCSI), an eight-dimensional measure of subjective career success. This instrument addressed the limitations of previous career success measures and demonstrated rigour in its comprehensive multidimensional approach to measurement development in the field of subjective career success (Briscoe et al., 2021).

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Since its publication, the SCSI has widely and increasingly been administered. Despite the popularity and the strengths of the instrument, published studies reporting comprehensive psychometric properties for the SCSI are scarce: most studies include small Western samples and only utilise either a specific number of items or only some of the instrument dimensions. Such studies, thus, do not reflect and measure the true multidimensionality it was intended for. In addition, we could only find one study (Haenggli & Hirschi, 2020) presenting the SCSI as a second-order model. Our study will estimate and sequentially compare four independent cluster confirmatory factor (ICM-CFA) models (i.e., a unidimensional, first-order, second-order, and bifactor model) to determine the factor structure of the SCSI. Perceptions of career success may vary according to cultural influences, and career elements of value to employees vary from one culture or country to the next (Mayrhofer et al., 2016). Thus, the need to examine the specific meanings of career success within and between countries. Briscoe et al. (2021) also re-emphasized country-specific interrelationships between meanings. In addition, self-report measures require individuals to reflect on their career perceptions which cultural elements could also influence. With this in mind, this study was undertaken to remedy such shortcomings with a more comprehensive investigation into the psychometric properties of the SCSI within a larger South African sample.

This study's potential benefit is providing organisations with a psychometrically sound measure to identify the subjective career success factors that are important to their employees. Addressing these factors could benefit organisations by retaining their employees and enhancing their performance, as subjective career success has known relationships with work-related outcomes (Shockley et al., 2016).

The Subjective Career Success Inventory

According to Shockley et al. (2016), it is essential to understand the more subjective meaning of career success for individuals. In this regard, the SCSI aimed to create an overall measure that incorporates many subjective facets of career success that is distinct from career satisfaction and objective career success. Shockley et al. (2016) followed a mixed-method approach during their rigorous scale development process and developed a 24-item, eight-dimensional subjective career success measure (see Figure 1).

Validity and reliability

Overall, when considering published studies incorporating the SCSI (in Table 1), comprehensive descriptions of the factor structure or construct validation seem to be lacking. Although a multidimensional instrument, various researchers (see Table 1) seem to utilise and report the instrument's overall/aggregated subjective career success scores. While Najam et al. (2020) did report on the validity of the SCSI, this was for an overall subjective career success study variable (including only 12 of the original items). Valid evidence for using only specific items of the SCSI was not reported. Likewise, Mitterer (2020) and Ahmed et al. (2019) included some of the original items and no evidence for construct validity is reported. Such factorial permutations across samples become problematic as the true uniqueness and significance of the different sub-dimensions of the SCSI are lost and undermine our proper understanding of all aspects of subjective career success as intended by Shockley et al. (2016). Although Haenggli and Hirschi (2020) are the only other study reporting on the validity of the SCSI, subjective career success was presented as a higher/second-order construct. Using second-order factor models often goes unchallenged and does not help resolve dimensionality issues (Chen et al., 2006). Garrido et al. (2019) warn against treating substantively multidimensional scores as unidimensional, as such factors are expected to lead to biased item parameter estimates and loss of information. This study estimated and sequentially compared four ICM-CFA models (i.e., a unidimensional, first-order, second-order, and bifactor model) to determine the factor structure of the SCSI. Testing the factor structure of the SCSI across different populations with different nationalities (such as South Africa) and cultures from western countries will contribute to future research to permit data comparison and interpretation across cultures. As reflected in Table 1, the SCSI as both uni- and multidimensional measure of career success was found to be reliable. Consistent with the literature, this study hypothesised that:

H1: The SCSI is an eight-dimensional construct

H2: The SCSI displays acceptable convergent validity

H3: The SCSI displays acceptable internal consistency

Figure 1. Dimension descriptions of the SCSI. Reproduced from Shockley et al. (2016).

The relationship between subjective career success and performance

To further test for validity (i.e., discriminant and nomological), the relationship between subjective career success and performance will be determined. In most studies, the SCSI (as outcome variable) has been investigated in relation to various constructs (e.g., career commitment, self-efficacy). Recently, Spurk et al. (2019) taxonomy of antecedents and consequences relating to objective and subjective career success identified competitive performance as an aspect of career success. Studies typically investigate how an individual's performance level and/or rank affected career success and include aspects such as task performance, getting-ahead career orientation, and problem-solving. Shockley et al. (2016) postulated that previous multidimensional measures of career success incorporated aspects of performance and that, although they did not measure relationships between career success and performance, such relationships could be expected.

H4: The SCSI displays acceptable discriminant validity

H5: The SCSI is positively related to task performance

Table 1. Studies administering the SCSI.

Authors	Sample Size	Sample Composition	Description of Construct Validation	Reliabilities
Haenggli and Hirschi (2020)	*n* = 574	German sample (55% women) employed in private industry	Validity of the higher-order career success construct representing the scale scores of the respective subscales	α = 0.95
Najam et al. (2020)	*n* = 360	Middle management employees working in Pakistan's service	EFA, CFA and convergent validity	α = 0.82 Utilised only 12 items
Mitterer (2020)	*n* = 164	Mainly Caucasian employees in private sector		α = 0.91 Only utilised 13 items
Ahmed et al. (2019)	*n* = 233	Employees working in banking, insurance, and health in Pakistan		α = 0.78
Cheng et al. (2019)	*n* = 247	Mainly Caucasian employees residing in USA		Overall subjective career success α = 0.96
Ibrahim and Amari (2018)	*n* = 228	Women academic staff working in Riyadh, KSA	Measurement model fit SCS $\chi 2\backslash df$ = 1.59 RMSEA = 0.05; CFI =.98	α = 0.83

Measurement invariance

Shockley et al. (2016) suggested that the exploration of gender differences with the SCSI might uncover valuable distinctions between men and females because of known gender gaps in the experiences of career success. For example, Crisan (2021) found that, compared to male academics, female academics are more inclined to have higher subjective career success. Furthermore, the literature points to women facing multiple problems and barriers in their careers and are therefore inclined to experience lower subjective career success (Santos, 2016). Research (O'Neil et al.; Santos, 2016) pointed out that most career success research conducted is based on male-defined constructions of work and career success. Research studies (e.g., Dolan et al., 2011 and Dyke and Murphy, 2006 as cited in Santos, 2016) concur that women's definitions of success may rely more on internal criteria (e.g., work-life balance, work stability and maintaining healthy relationships and a sense of personal achievement) than on external, traditionally male, corporate criteria (e.g., income and position within the company). Shockley's instrument measures aspects such as meaningful work, personal life and recognition, which seem to be important factors, especially for women, as were discussed. The SCSI seems to address meaningful dimensions of subjective career success that might be more appealing to both genders. However, before we can make any comparisons between gender groups, measurement invariance of the SCSI should be established. No studies were found that tested for measurement invariance across gender using the SCSI, and this study aimed to address this gap. The following hypothesis was formulated:

H6: The SCSI displays measurement invariance between genders

Method

Research design and participants

Our study utilised a cross-sectional, electronic, survey-based research design using non-probability sampling. One year of working experience was a requirement. Participants were informed about the purpose of the study and assured of their anonymity and confidentiality. Ethical approval was obtained from the relevant institution to conduct the study.

The sample ($N = 736$) comprises 56% females, and the majority were White (77%). 12% of the respondents indicated that they were African, 4.2% of mixed race and 5.4% Indian. More than half of the sample stated that their home language is Afrikaans (65%), followed by English (23%) and African (11%) home language speakers. The age range was from 20 to 73 years (mean = 41 years; standard deviation = 6), with half of the sample younger than 39 years. Employees were well-educated, possessing either a degree (30%) or a postgraduate qualification (40%).

Most of the respondents (58%) had been employed within their current organisation for more than one year but less than five years. Seven respondents who did not complete the questions related to the constructs under investigation were excluded from the original data set (N = 743). The only missing values in the data set were on some of the characteristics of the sample.

Measuring instruments

Subjective career success

The SCSI (Shockley et al., 2016) comprised 24-items with eight dimensions each measured by three items: Recognition, Quality work, Meaningful work, Influence, Authenticity, Personal life, Growth and development, and Satisfaction. See Figure 1 for item examples. Items are scored on a 5-point Likert-type scale ranging from 1 ("not at all") to 5 ("a great deal"), and respondents are required to respond to the statements "Taking in consideration their career as whole". Shockley et al. (2016) reported the following alpha values: overall SCSI ($\alpha = 0.94$), and for the specific dimensions, alphas ranged between 0.77 and 0.92. Previous studies reported alpha coefficients ranging between 0.78 and 0.92 (see Table 1).

Performance

Performance was measured using the task performance subscale of Koopmans's et al. (2014) Individual Work Performance Questionnaire. This subscale consists of five items measured on a 5-point Likert-type scale, ranging from 1 ("seldom") to 5 ("always"). Task performance measures individuals' self-perceived performance of tasks about their work, e.g., "I kept in mind the results that I had to achieve in my work". Van der Vaart (2021) reported the following values for the scale on a South African sample: $\alpha = 0.89$and $\rho = 0.92$.

Statistical analyses

We used IBM SPSS version 26 (for descriptive statistics and correlation analyses) and MPlus version 8.3 for conducting the analyses. First, for the factorial validity of the SCSI, we investigated convergent, discriminant and nomological validity. We employed a competing measurement modelling strategy using maximum likelihood as an estimator to determine the factor structure of the SCSI. We estimated and sequentially compared four ICM-CFA models (i.e., a unidimensional, first-order, second-order, and bifactor model). We used the following goodness-of-fit indices and cut-off points (Kline (2016) to determine model fit: (1) absolute fit indices: the root mean square error of approximation (RMSEA): < 0.08, and the standardised root mean square residual (SRMR): < 0.08; (2) incremental fit indices: the Tucker-Lewis index (TLI): > 0.90, and the comparative fit index (CFI): > 0.90; and (3) comparative fit indices: the Akaike information criterion (AIC) and the Bayesian information criterion (BIC).

To test convergent validity, we (1) inspected the standardised factor loadings of the items that should be ≥ 0.50 and calculated both the (2) average variance explained (AVE) that needed to be ≥ 0.50 and the (3) construct validity that needed to be ≥ 0.70 (Hair et al., 2014). Raykov (2009) has, however, suggested that it is more appropriate to calculate composite reliability coefficients (ρ) for latent variables than to calculate construct validity. We also reported Cronbach's alpha values to make a comparison with other researchers' values.

To establish discriminant validity, we first determined whether the square root of the AVE of each latent variable accounted for more variance in its associated indicator variables than the variance it shared with other latent variables in the same model (Hair et al., 2014). We used Henseler's et al. (2015) heterotrait-monotrait ratio of correlations (HTMT) to assess discriminant validity. HTMT could be used either as a criterion or a statistical test to assess discriminant validity. We used HTMT as a criterion to compare the value of the HTMT to a predefined threshold: 0.85 (Kline, 2016) or 0.90 (Gold et al., 2001). HTMT values higher than this threshold and thus closer to 1.00 indicate a lack of discriminant validity.

Measurement invariance was investigated based on gender. To establish measurement invariance, we used multi-group confirmatory factor analysis. First, we established configural invariance (similar factor structures across groups), followed by testing for metric invariance (similar factor loadings across groups) and scalar invariance (similar factor loadings and intercepts across groups). A non-significant chi-square value between males and females ($p > 0.05$) and a change in CFI with values not exceeding 0.01 indicate that the models are equivalent in terms of fit (Wang & Wang, 2020). Only after configural, metric and scalar invariance had been established could the latent mean score differences between males and females be compared. This was done by constraining the males' mean score to one and using the male group as the reference group while freely estimating the females' mean score. A significant difference between genders would be present if the females' latent mean score differed significantly from zero (Wang & Wang, 2020).

For nomological validity of the SCSI, we evaluated the correlations between the eight subjective career dimensions and task performance.

Results

Factorial validity

The factorial structure of the SCSI was estimated by testing four competing measurement models using a confirmatory factor analyses process:

- Model 1: Based on previous studies (Cheng et al., 2019; Ibrahim & Amari, 2018) a unidimensional confirmatory factor model was tested where all 24 items load onto a single factor.
- Model 2: An eight-factor model as per the original factor structure of Shockley et al. (2016) was tested. All items were allowed to load onto their respective a priori factors. Variables/factors were allowed to correlate, but no error terms were permitted to correlate.
- Model 3: Similar to the study of Haenggli and Hirschi (2020), we tested an eight-factor model which was allowed to load onto a second-order factor of subjective career success.
- Model 4: A bifactor model was tested. Items loaded onto their respective a priori factors but were also allowed to load onto a general subjective career success factor. The eight latent variables in this bifactor model were orthogonal (uncorrelated) to the general factor. We could not find evidence in the literature of the testing of a bifactor model.

In all of the models tested, the cross-loadings were constrained to zero. Goodness-of-fit results for the models tested are presented in Table 2.

All the models tested demonstrated acceptable fit (except model 1). A comparison between models 2, 3 and 4 indicated no superior model. The CFI and TLI values of all the models were above the suggested cut-off values and SRMR values below the suggested cut-offs. Although the RMSEA values of these three models met the minimum criteria of ≤0.08, the 90% confidence intervals of the RMSEA overlapped between the models, indicating little differentiation. We compared models 2, 3 and 4 to determine whether they differed significantly. Cheung and Rensvold (2002) suggested that if changes in the RMSEA, CFI and TLI of models that were compared were greater than 0.01, it indicated that the models differed significantly. A comparison between Model 2 and Model 3 indicated that the former seemed to be the better fit ($\chi^2 = 377.15$; $\Delta df = 20$; $\Delta CFI = 0.04$; $\Delta TLI = 0.04$; $\Delta RMSEA = 0.03$). When comparing Model 2 with Model 4, results indicated that Model 2 fitted the data better than the bifactor Model 4 ($\Delta\ \chi^2 = 285.54$; $\Delta df = 4$; $\Delta CFI = 0.03$; $\Delta TLI = 0.04$; $\Delta RMSEA = 0.01$). Howard et al. (2018) posited that information criteria (e.g., AIC and BIC) were particularly useful in comparing alternative models, with lower values supporting a better-fitting model. Model 2 displayed the lowest chi-square value and its' AIC and BIC values were the lowest, suggesting that this model was the most parsimonious one (with fewer parameters estimated) (Howard et al., 2018). Based on all the results of our study, we concluded that Model 2 was the most preferred model (see Figure 2). Further, this model showed congruence with Shockley's original theoretical conceptualisation of the SCSI, supporting hypothesis 1.

Convergent and discriminant validity

A full measurement model was constructed based on the most parsimonious measurement model (Model 2) in which task performance was included as a latent variable. The model yielded the following fit statistics: $\chi^2 = 895.29$; $df = 341$; CFI = 0.95; TLI = 0.94; RMSEA = 0.05 (0.04; 0.05); SRMR = 0.05; AIC = 45,453.38; BIC = 46,019.335. All the items' standardised factor loadings, varying between 0.61 and 0.82, were significantly higher than the suggested 0.50 cut-off score (Wang & Wang, 2020) and loaded significantly ($p < 0.01$) on the corresponding factors. The AVE scores (≥0.50), Cronbach's coefficients ($\alpha > 0.70$) and composite reliabilities ($\rho \geq 0.70$) of each of the constructs (displayed in Table 3) met the suggested criteria providing support for hypotheses 2 and 3.

With regard to discriminant validity, the square root of the AVE should be larger than the inter-correlation value of each inter-correlation measure.

Table 2. Fit statistics of the measurement models.

Models	χ^2	*df*	CFI	TLI	RMSEA	90% CI	SRMR	AIC	BIC
Model 1:	3010.44*	252	0.68	0.65	0.12*	[0.12, 0.13]	0.09	38,641.05	38,172.34
Model 2:	634.17*	224	0.95	0.94	0.05	[0.05, 0.05]	0.04	36,320.79	36,780.91
Model 3:	1011.32*	244	0.91	0.90	0.07*	[0.06, 0.70]	0.06	36,657.94	37,026.04
Model 4:	919.71*	228	0.92	0.90	0.04*	[0.06, 0.07]	0.06	36,592.33	37,040.04

χ^2 = chi-square statistic; *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = confidence intervals; SRMR = standardised root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion.
*$p < 0.001$.

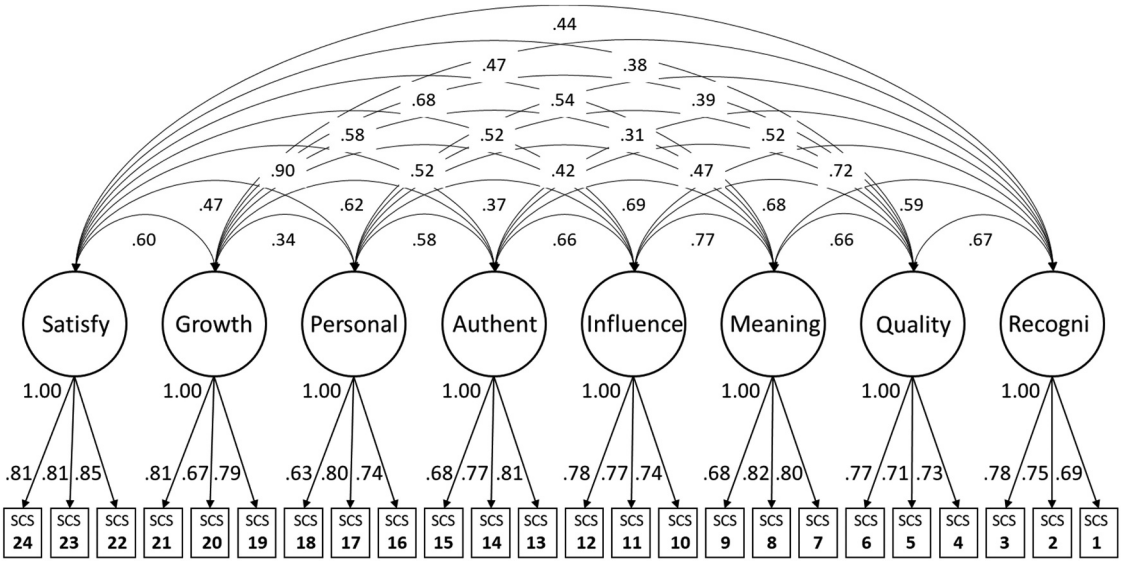

Figure 2. Measurement model of the SCSI.

Table 3. Descriptive statistics, reliabilities, correlations and AVE Values.

Variable	Mean	SD	α	-	AVE	1	2	3	4	5	6	7	8	9
1. Recognition	4.13	0.73	0.78	0.78	0.51	**0.71**								
2. Quality work	4.35	0.59	0.78	0.78	0.54	0.52++	**0.74**							
3. Meaningful work	4.09	0.74	0.80	0.81	0.59	0.46+	0.51++	**0.77**						
4. Influence	3.91	0.79	0.81	0.81	0.59	0.57++	0.54++	0.63++	**0.77**					
5. Authenticity	9.94	0.78	0.80	0.80	0.57	0.39+	0.36+	0.54++	0.52++	**0.76**				
6. Personal life	3.91	0.76	0.76	0.77	0.53	0.32+	0.26	0.33+	0.30+	0.46+	**0.73**			
7. Growth and development	4.12	0.65	0.80	0.80	0.58	0.31+	0.45+	0.43+	0.43+	0.52++	0.29	**0.76**		
8. Satisfaction	4.08	0.78	0.86	0.90	0.68	0.36+	0.38+	0.55++	0.48+	0.75++	0.39+	0.51++	**0.82**	
9. Task performance	4.87	0.76	0.80	0.81	0.46	0.39+	0.51++	0.43+	0.41+	0.42+	0.30+	0.42+	0.39+	**0.68**

SD = Standard deviation; α = Cronbach's alpha; - = composite reliability; AVE = average variance extracted. All correlations are statistically significant ($p < 0.01$). +Correlation is practically significant $r > 0.30$ (medium effect). ++Correlation is practically significant $r > 0.50$ (large effect). Square root of AVE values is displayed in bold above the diagonal.

As illustrated in Table 3, all square root AVE values, ranging between 0.68 and 0.82, were higher than the inter-correlational values between the latent variables. Furthermore, the HTMT value of 0.85 between the SCSI dimensions was lower than the threshold of 0.90 (Henseler et al., 2015), suggesting that the eight dimensions of the SCSI were dependent on each other. The HTMT value of 0.66 between all the constructs was lower than the suggested threshold values, suggesting that the SCSI measure was independent of task performance. Thus, the SCSI displayed acceptable discriminant validity, supporting hypothesis 4.

Nomological validity

The inter-correlations between the SCSI constructs and task performance (reported in Table 3) were all significant ($p < 0.01$). All eight of the subjective career success dimensions correlated positively with each other and were in the proposed direction. These correlational values varied between 0.26 and 0.75. Task performance displayed practical significant positive relationships with all eight of the subjective career success dimensions supporting the nomological validity of the SCSI (supporting Hypothesis 5).

Measurement invariance based on gender

To assess measurement invariance, we followed three steps. First, we computed the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy value for each gender group to determine if the sample sizes were adequate to compute measurement invariance. The KMO measure of sampling adequacy values of 0.92 for both males ($n = 321$) and females ($n = 408$) were higher than the suggested cut-off of 0.70, indicating that measurement invariance could be estimated. Second, we established measurement invariance between the two gender groups (see Table 4). Non-

Table 4. Fit statistics for measurement invariance by gender.

Model	χ^2 (*df*)	CFI	SRMR	RMSEA	Model comparison	$\Delta\chi^2$	ΔCFI	*p*
M1: Configural invariance	932.72(448)	0.94	0.05	0.06	-			
M2: Metric invariance	955.24(464)	0.94	0.05	0.05	M2 vs M1	22.52	0.00	0.13
M3: Scalar invariance	974.73(480)	0.93	0.06	0.05	M3 vs M1	42.00	0.01	0.11
					M3 vs M2	19.48	0.01	0.24

χ^2 = chi-square statistic; *df* = degrees of freedom; CFI = comparative fit index. SRMR = standardised root mean square residual; RMSEA = root mean square error of approximation.

significant χ^2 differences and changes in CFI smaller or equal to 0.01 were found between the configural, metric and scalar invariance models, suggesting that the SCSI was invariant between the two groups, supporting hypothesis 6. Since we had established invariance, we compared the latent mean score differences between males and females. The results indicated that the factor mean of the Influence dimension (–0.13, $p = 0.04$) was significantly ($p < 0.05$) lower in males than in females. The factor means of the other dimensions of the SCSI were not significantly different between the two samples. The results were as follows: Recognition (0.01, $p = 0.88$); Quality work (0.07, $p = 0.08$); Meaningful work (0.03, $p = 0.51$); Authenticity (–0.07, $p = 0.28$); Personal life (0.10, $p = 0.14$); Growth and development (–0.05, $p = 0.27$); Satisfaction (–0.07, $p = 0.25$).

Common method bias

Since we utilised self-reported measures, we tested for the presence of common method bias using several statistical approaches. The results of Harman's single test, indicated that the total variance explained (accounted for by one factor) was 35%, and thus lower than the recommended threshold value of 50% (Tehseen et al., 2017). In addition, a confirmatory factor analytical approach using a single-factor indicator (on which all observed variables were directly loaded) failed to produce a single factor and the results indicated poor fit (CFI = 0.66; SRMR = 0.09; RMSEA = 0.11). Third, a single unmeasured latent common methods variance latent factor was added to the measurement model (as suggested by Podsakoff et al., 2003), which did not show any significant loss in the factor loadings. High intercorrelations ($r \geq 0.90$) between latent variables were not found among the latent variables. Therefore, common method bias was not a serious issue in our study.

Discussion

Given the lack of comprehensive psychometric properties reported in the literature for the SCSI, our study contributed significantly towards the measurement of subjective career success as a multidimensional instrument within the South African context.

We tested four competing ICM-CFA measurement models to establish the factor structure of the SCSI. Our findings fully supported using a 24-item eight-factor ICM-CFA model within the South African context, implying that an individual's perception of subjective career success is best explained by various facets rather than merely an overall evaluation of success. Our findings illustrate that subjective career success, measured with the SCSI, should not be calculated as a single score, as important information relating to each of the sub-dimensions will be lost, which has been the critique against previous studies incorporating the SCSI (Table 1). We selected the eight-factor model as the parsimonious model based on the good model fit and the fact that it reflects the original theoretical model of Shockley et al. (2016). Thus, contradictory to previous studies incorporating the SCSI, our findings reveal that the SCSI is best utilised when all the instrument items are used to measure the eight dimensions. However, it should be noted that within our sample, the second-order factor model and the bifactor model also showed acceptable model fit. In this sense, users can consider incorporating subjective career success as a higher-order factor when testing within a larger nomological network of latent variables.

Regarding convergence validity, our results indicated that the items measured the same underlying latent construct. Further support for convergent validity of the SCSI was evident in the instrument's reliability, where our study provides acceptable internal consistency values at both lower- and upper-bound levels.

Discriminant validity was also fully supported, showing that the eight SCSI dimensions were genuinely distinct from each other and other constructs (i.e., task performance). In line with previous suggestions on the relationship of subjective career success with competitive performance (Spurk et al., 2019), our results revealed significant positive correlations between the

SCSI dimensions and task performance (thus showing nomological validity for the instrument).

Furthermore, our findings significantly contribute to the notion that males and females may experience subjective career success differently. In this sense, we performed a multigroup confirmatory factor analysis to test whether the SCSI was invariant across gender. Overall, the SCSI demonstrated full configural, metric and scalar invariance between males and females. Thus, within the context of our study, it was possible to use the SCSI to determine perceptual differences between males and females regarding the eight dimensions of the SCSI. In contrast with previous research (Kirchmeyer, 2002; Shockley et al., 2016) we found a significant difference between males and females regarding the Influence factor. Compared to males, females experienced higher levels of Influence, suggesting that influencing in the workplace is a more critical aspect of subjective career success for females than for males. Within the South African context, and given our specific sample (mainly Afrikaans-speaking females), this result can be explained by the stigmatisation of women in the workplace. In South Africa, females are underrepresented in leadership positions; therefore, they do not always have the authority to influence (Osituyo, 2018). Our findings suggest that should women have the opportunity or feel that they are in a position to influence others or contribute to decision-making in their organisation, they would experience career success.

Thus, when considering the multidimensionality of the SCSI and the differences between genders, our findings provide a more nuanced explanation of males' and females' differences in their experiences of the facets of subjective career success.

Limitations and future research

The cross-sectional nature of the research design does not allow for testing causal relationships. Future research with a longitudinal design is needed to study the stability of the SCSI scale over time since individuals' perceptions of their career success can change over time (Spurk et al., 2019).

Although we established factorial validity, the omission of dependent variables to evaluate the concurrent (and predictive) validity of the SCSI should be noted. Future studies could assess the SCSI scale in relation to other outcomes of career success, such as withdrawal attitudes (e.g., intention to leave) and career attitudes (e.g., greater psychological well-being, heightened self-esteem, and organisational success) (Spurk et al., 2019). Researchers can further explore convergent validity by establishing associations with other multidimensional measures of career success, such as the scale developed by Pan and Zhou (2015).

This study only tested invariance across genders. Future studies could perhaps test for invariance across career stages since perceptions of subjective career success might vary across the career stages (Shockley et al., 2016).

Conclusion

Given the increased scholarly interest in measuring subjective career success within cross-cultural domains, our study provides extensive psychometric evidence for using the SCSI within the South African context. This instrument provides an alternative to previous measures for the multidimensional measurement of subjective career success (Briscoe et al., 2021; Pan & Zhou, 2015). The SCSI can be regarded as a valid and reliable instrument for assessing perceived subjective career success as operationalised by Shockley et al. (2016) in a South African context. The organisational implications of establishing a measure encompassing multiple meanings of career success are substantial and can result in integrating individual career mastery with organisational career planning and balancing the dualities of cross-border standardisation and contextual responsiveness (Yuan & Chan, 2016).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

Data is available upon request from the authors.

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