



Measures of career adaptability and employability in Bahasa Indonesia

Henriette van Rensburg¹ · Harsha N. Perera¹ · Peter McIlveen¹ ·
Fitriah Asad² · P. Nancey Hoare³

Received: 26 October 2021 / Accepted: 5 November 2022 / Published online: 18 November 2022
© The Author(s), under exclusive licence to Springer Nature B.V. 2022

Abstract

There is emergent evidence of the Career Adapt-Abilities Scale's utility in the Global South. The present research provides evidence about the measurement properties of a Bahasa Indonesia language version of the Career Adapt-Abilities Scale and comparator measures, the Career Futures Inventory-Revised and the Self-perceived Employability Scale, using a sample of students ($N=277$) enrolled in Indonesian college degrees. Furthermore, for the purpose of cross-cultural comparisons, the measurement properties of the Indonesian version of the Career Adapt-Abilities Scale were compared with an independent dataset ($N=387$) using an Australian English language version. The Indonesian version had acceptable measurement properties.

Keywords College students · Career Adapt-Abilities Scale · Career adaptability

Résumé

Mesures de l'adaptabilité et de l'employabilité de la carrière en indonésien Il existe des preuves émergentes de l'utilité de l'échelle d'adaptabilité de carrière dans les pays du Sud. La présente étude fournit des preuves des propriétés de mesure d'une version en indonésien de l'échelle d'adaptabilité de carrière (*Career Adapt-Abilities Scale*) et des mesures comparatives, le *Career Futures Inventory-Revised* et la *Self-Perceived Employability Scale*, en utilisant un échantillon d'étudiants ($N=277$) inscrits dans des universités indonésiennes. De plus, dans le but d'effectuer des comparaisons interculturelles, les propriétés de mesure de la version indonésienne de l'échelle d'adaptabilité de carrière ont été comparées à un ensemble de données

✉ Peter McIlveen
peter.mcilveen@usq.edu.au

¹ School of Education, University of Southern Queensland, Toowoomba, QLD 4350, Australia

² Faculty of Education & Teacher Training, UIN Sunan Ampel Surabaya, Surabaya, Indonesia

³ School of Psychology & Counselling, University of Southern Queensland, Toowoomba, Australia

indépendant ($N=387$) utilisant une version australienne en anglais. La version indonésienne présentait des propriétés de mesure acceptables.

Zusammenfassung

Maßnahmen zur beruflichen Anpassungsfähigkeit und Beschäftigungsfähigkeit auf indonesisch Es gibt neue Hinweise auf den Nutzen der Career Adapt-Abilities Scale im globalen Süden. Die vorliegende Forschung liefert Nachweise über die Messeigenschaften einer indonesischen Sprachversion (Bahasa Indonesia) der Career Adapt-Abilities Scale und Vergleichsmessungen, des Career Futures Inventory-Revised und der Self-Perceived Employability Scale, unter Verwendung einer Stichprobe von Studierenden indonesischer Hochschulen ($N=277$). Darüber hinaus wurden zum interkulturellen Vergleich die Messeigenschaften der indonesischen Version der Career Adapt-Abilities Scale mit einem unabhängigen Datensatz ($N=387$) unter Verwendung einer australisch-englischen Sprachversion verglichen. Die indonesische Version hatte akzeptable Messeigenschaften.

Resumen

Medidas de adaptabilidad profesional y empleabilidad en Bahasa Indonesia Existen pruebas emergentes de la utilidad de la Escala de Adaptación Profesional en el Sur Global. La presente investigación proporciona evidencia sobre las propiedades de medición de una versión en idioma bahasa indonesio de la Escala de Adaptación a la Carrera y las medidas de comparación, el Inventario de Futuros de Carrera-Revisado y la Escala de Empleabilidad Autopercebida, utilizando una muestra de estudiantes ($N=277$) matriculados en carreras universitarias indonesias. Además, con el fin de realizar comparaciones transculturales, se compararon las propiedades de medición de la versión indonesia de la Escala de Capacidades de Adaptación Profesional con un conjunto de datos independiente ($N=387$) que utilizaba una versión australiana en inglés. La versión indonesia tenía propiedades de medición aceptables.

A recent meta-analysis highlights extensive utilization of *career adaptability* as a construct in the vocational psychology and career development literature (Johnston, 2018; Rudolph et al., 2017). Savickas and Porfeli (2012) defined career adaptability as:

Career adaptability is an individual's resources for coping with current and anticipated tasks, transitions, traumas in their occupational roles. Career adaptability resources are the self-regulation strengths or capacities that a person may draw upon to solve the unfamiliar, complex, and ill-defined problems presented by developmental vocational tasks, occupational transitions, and work traumas (p. 662).

Researchers' interest in career adaptability is evident in the development of different measures of career adaptability, including the original Career Futures Inventory (CFI; Rottinghaus et al., 2005), and its revised and short-form (CFI-R; McIlveen et al., 2013; Rottinghaus et al., 2012, 2017) and the Career Adapt-Abilities Scale

(CAAS; Savickas & Porfeli, 2012). Career adaptability's utility for research into career development covers topics such as work-family balance (Amarnani et al., 2018; McIlveen et al., 2018; Wang et al., 2018), work engagement (Jiang et al., 2018; Shabeer et al., 2018), and workers' international transitions (Presbitero & Quita, 2017), including refugees (Campion, 2018; Obschonka et al., 2018). Other research explores career adaptability's conceptual and empirical relations with constructs utilized in other mainstream psychological theory, including dispositional traits (Perera & McIlveen, 2017; Nilforooshan & Salimi, 2016; Woo, 2018), social support (Ataç et al., 2018; Ghosh & Fouad, 2017), self-efficacy (McLennan et al., 2017; Jiang et al., 2018; Kim & Lee, 2018), and subjective well-being (Ramos & Lopez, 2018).

A notable feature of the career adaptability literature is the availability of the CAAS in different nations and languages, particularly in the Asia Pacific region, including China (Hou et al., 2012), Korea (Tak, 2012), Taiwan (Tien et al., 2012), and the Philippines (Tolentino et al., 2013). More recently, researchers have compared the CAAS across nations, South Korea and Japan, and found acceptable measurement properties (Lee et al., 2020). The present research adds to the vocational psychology literature the first evidence of career adaptability's utility in another Asia Pacific nation, namely Indonesia. Indonesia is a geographically, ethnically, and linguistically diverse republic of more than 260 million people, with 300 ethnic cultures, spread across an archipelago of approximately 15 thousand islands. Indonesia has more than 700 local languages, and the official language is Bahasa Indonesia. Islam is the religion of approximately 90% of Indonesians, and 10% are Christian, Hindu and Buddhist. There is scant vocational psychology literature about education and employability in Indonesia; thus, now we present a precis to contextualize the present research.

Indonesia and higher education

Indonesia has more than 3000 higher education and training institutions, all supervised by the Ministry of Education and Culture. According to official data (OECD, 2015), more than 70% of these institutions are private operations, and the national government funds the remainder. Most established higher institutions, both public and private, are located on the main island Java and within metropolitan cities. There is inequality in the distribution of institutions throughout the country, with poorer regions having the fewest institutions of higher education. The number of students enrolled in higher institutions was over 5.8 million in 2015, and almost 40% studied with public institutions (Badan Pusat Statistik, 2019). Although there are some established private institutions with a guaranteed quality of education, public institutions offer a wide range of programmes, and people still consider the quality to be better (Sulisworo, 2016). Most private institutions, however, are small institutions that cater for a small number of students. This becomes problematic because these institutions rely solely on tuition fees, which makes it difficult to survive and maintain quality standards.

Related to the quality of higher education institutions, is the quality of their graduates. This issue of “graduate quality” is a concern amongst educators and the ASEAN Economic Community (AEC). The AEC is an initiative towards regional economic integration that opens the door to a free flow of capital, trade, and workers across ASEAN member countries. The quality of education and the competitiveness of university graduates on the labour market in Indonesia is still far behind at the international level, even at the level of ASEAN (Sulisworo, 2016). Thus, the higher education sector needs to recognize and understand the context of employability for their graduates to ensure that their students can live up to the expectations from governments and employers (Nugroho et al., 2012).

Employment in Indonesia

Employability is an emerging issue for Indonesia. Due to the growing of the Indonesian economy and the implementation of AEC, there is a significant demand for skilled workers that can contribute to the local and national economies. The research found that educational attainment is an essential factor that positively affects the willingness to work, and highly educated workers are very specific about the work that they want to do and refuse the work that is not accordance with their expectations (Suryadarma et al., 2005). The National Statistics Bureau reported that the number of unemployed people with tertiary education was high in 2019 (Badan Pusat Statistik, 2019). At the same time, the number of foreign workers in Indonesia increased by around 95,000. At the same time, the number of foreign workers in Indonesia increased by around 25% to 46,226. This increase was in line with the increase in foreign direct investment, and most foreign workers occupy highly skilled positions, such as manager, technician, and consultant. It is, therefore, crucial for the higher education system to focus on developing students’ competencies and skills to match job opportunities and improve their employability.

The number of youth working was 60.17% of the total employed population in 2019, increasing about 4.28% from 55.89% in 2018 (Badan Pusat Statistik, 2019). The employment distribution indicates that many graduates preferred careers in the service sector, with 18.92% employed in trade, 5.10% in education, and 10.82% in transportation and lodging. Agriculture attracted a sizable proportion of youth employees, accounting for 29.46%, followed by manufacturing at 14.09%. The statistics also indicate an inequality in the distribution of employees between urban and rural areas. In Indonesia’s urban areas, the formal sector employed a sizable proportion of workers, accounting for 69.46% (Badan Pusat Statistik, 2019). Informal jobs, which are disproportionately concentrated in rural areas, significantly reduce rural unemployment. Male workers dominated both formal and informal employment, accounting for 64.70% and 56.%, respectively. Additionally, high migration and education levels result in a higher unemployment rate in urban areas than in rural areas. Unemployment remains high at 48.60% in 2019, with 7.50% of unemployed youth aged 15–24. This indicates that the job market has become more competitive. It is reasonable to assume that individuals with the knowledge, skills, and attitudes

preferred by employers will have a greater chance of finding work, thus increasing competition for remaining job seekers.

Aims of the research

The aims of present research are to assess the measurement of the CAAS and to explore its relations with another measure of career adaptability, the Career Futures Inventory-Revised (CFI-R; Rottinghaus et al., 2012) and perceived employability, the Self-Perceived Employability Scale (SPES; Rothwell et al., 2008) translated into Bahasa Indonesian language. We chose the CFI-R because it has been subject to follow-up studies which demonstrated its measurement properties and applications in career counselling contexts (Rottinghaus et al., 2017) including general and clinical populations (Park et al., 2019). We chose the SPES because we wished to explore career adaptability's relations with students' self-perceptions of their employability. Similar to Lee et al. (2020), who compared the CAAS across nations, the present study compared the measurement properties of the Indonesian version of the measures with an Australian sample. Comparing and contrasting measurement models across different cultures provides an additional source of evidence of validity.

Methods

Participants

The participants ($N=277$) were Indonesian students enrolled in bachelor degrees offered by universities in the capital of Indonesia, Jakarta, and a major metropolitan centre, Surabaya. The majority were female ($n=190$, 68.6%) with $M_{\text{age}}=20.15$ ($SD=1.47$). The degree disciplines varied amongst Education ($n=126$, 45.5%), Information Technology ($n=53$, 19.1%), Languages ($n=28$, 10.1%), Business ($n=13$, 4.7%), Engineering ($n=13$, 4.7%), Sciences (5, 1.8%), Health ($n=2$, 0.7%), Law ($n=1$, .4%), and undeclared ($n=36$, 13.0%). Their degree levels ranged across first year ($n=78$, 28.2%), second year ($n=93$, 33.6%), third year ($n=61$, 22.0%), and fourth year ($n=45$, 16.2%). All participants had taken classes in English language as part of their degree studies.

The study also used an archived, unpublished Australian dataset for the purpose of comparing CAAS measurement models across international samples. These data were drawn from a broad convenience sample of Australians ($N=387$), with a $M_{\text{age}}=25.90$ ($SD=9.31$), the majority of whom were female ($n=281$; 72.6%). Their levels of education ranged across high school ($n=153$; 29.5%), college ($n=88$, 22.7%), and university ($n=146$, 37.7%).

Procedure

Participants were invited via an email notice to volunteer for the research. The email was sent from the college administration, with instructions that participation

was entirely voluntary and not associated with their educational requirements, and included directions to an online survey hosted on the proprietary www.createsurvey.com online platform. The survey was open between January and March of 2018. Participation was voluntary and participants were free to withdraw from the study. The research project was approved by the Human Research Ethics Committee of the University of Southern Queensland with the approval of the participating universities in Indonesia.

Measures

A domestic Indonesian citizen translated the CAAS, CFI-R, and SPES into Bahasa Indonesian language. The translator held postgraduate degree qualifications in English language teaching. To ensure accuracy, two college teachers, who were Indonesian nationals, used back translation as a quality control method to check the drafts of the translated versions. These drafts were translated back into English to confirm their correctness in terms of the items' original meanings.

Career adapt-abilities scale

The international version of the CAAS (Savickas & Porfeli, 2012) with 24 items was used for this study. The CAAS uses a five-point Likert-type scale ranging from 1 (not strong) to 5 (strongest). Internal consistency reliabilities were acceptable for the total scale score ($\alpha = .90$) and the subscale scores for Concern ($\alpha = .70$; e.g. "Thinking about what my future will be like"), Control ($\alpha = .73$; e.g. "Making decisions by myself"), Curiosity ($\alpha = .79$; e.g. "Looking for opportunities to grow as a person"), and Confidence ($\alpha = .79$; e.g. "Performing tasks efficiently"). Participants rated their self-perceived strength for each item, ranging from 1 = *Not Strong* to 5 = *Strongest*. The CAAS has been translated into several languages for use in different nations in the Asia-Pacific region, such as China (Hou et al., 2012), Korea (Tak, 2012), Taiwan (Tien et al., 2012), and the Philippines (Tolentino et al., 2013).

Career futures inventory-revised

In the present study, we used the Career Futures Inventory-Revised (CFI-R; Rottinghaus et al., 2012) to index adaptability in our examination of convergent validity evidence for the CAAS responses. The CFI-R uses a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Coefficients of internal consistency were Career Agency ($\alpha = .84$; e.g. "I can perform a successful job search"), Negative Career Outlook ($\alpha = .73$; e.g. "It is unlikely that good things will happen in my career"), Occupational Awareness ($\alpha = .62$; e.g. "I am good at understanding job market trends"), Support ($\alpha = .76$; e.g. "My family is there to help me through career challenges"), and Work-Life Balance ($\alpha = .75$; e.g. "I am good at balancing multiple life roles such as worker, family member, or friend"). Responses ranged from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Research into CFI-R's measurement

properties has affirmed its factor structure (Rottinghaus et al., 2017) and invariance across student and clinical samples (Park et al., 2019).

Self-perceived employability scale

We used the 8-item total score of the Self-Perceived Employability Scale (Rothwell et al., 2008) and it had an internal consistency of Cronbach $\alpha = .90$. An example item is: “I feel I could get any job so long as my skills and experience are reasonably relevant”. We used the total score for this study because the original validation study (Rothwell et al.) raised queries about the subscales’ measurement properties (e.g. internal consistency). Responses ranged from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. This measure has been used in studies of students’ employability (Gunawan et al., 2019), including studies requiring translation into another languages, including Chinese (Cheung et al., 2018), Spanish (Vargas et al., 2018), Portuguese (Monteiro et al., 2020), Italian (Lodi et al., 2020), and French (Atitsogbe et al., 2019).

Statistical analyses

The analyses were conducted in four phases using SPSS and MPlus. First, Confirmatory Factor Analysis (CFA) was conducted to test the expected hierarchical, multidimensional structure of the CAAS data. The CAAS items were specified to load on the concern, control, curiosity, or confident first-order factors, per the a priori scoring key. These first-order factors, in turn, were specified to load onto a second-order global adaptability factor, with covariances between disturbances terms of the first-order factors fixed to zero.

The second phase of the analyses involved tests of the convergence and divergence of the CAAS scores with respect to scores from the CFI-R. These Multitrait-Multimethod (MTMM) tests were conducted in accordance with an abridged taxonomy of hierarchically nested models (Widaman, 1985), comprising the following four nested models: (a) a null model with no trait or method factors (MTMM-1); (b) a model with two orthogonal method factors (MTMM-2); (c) a model with one general trait factor and two orthogonal method factors (MTMM-3); and (d) a model with a priori higher-order career adaptability structure and two orthogonal method factors (MTMM-4). For MTMM-3, items from the CAAS and CFI-R defined the general factor. For MTMM-4, the higher-order global career adaptability factor was indexed by the first-order CAAS factors (i.e. concern, curiosity, confidence, control) and first-order CFI-R factors (i.e. CA, NCO, OA, Support, WLB). Across the models, method factors were specified as independent-clusters CFA factors with null relations with trait factors. Per the taxonomy of nested model comparison, evidence of convergence is obtained if the best fitting model provides an appreciably better fit to the data than the model positing no trait factors. Divergent evidence is obtained if the best-fitting model shows an appreciable improvement in fit relative to the model positing only one general trait factor.

Third, latent mean differences across age and gender were investigated using Multiple-Indicator-Multiple-Causes (MIMIC) models. The MIMIC modelling

involved the examination of three models. First, a saturated model (MIMIC-1) was tested with paths specified from age and gender (coded as a binary predictor: 0=Male, 1=Female) to all item indicators but not the first- and second-order latent variables. Age was centred on its mean for these analyses. Second, a threshold-invariant model (MIMIC-2) was examined with paths from the predictors to the first-order latent variables, but not the second-order latent variable, and manifest indicators being freely estimated. No substantial degradation in the fit of the threshold-invariant model relative to the saturated model is indicative of support for the equivalence of item thresholds. A final model (MIMIC-3) was tested, with paths from the predictors to the second-order latent variable freely estimated and paths to the first-order factors and items fixed to zero. No appreciable decrement in fit of this model relative to MIMIC-2 is suggestive of support for the equivalence of first-order construct intercepts.

The final phase of the analyses involved tests of the full measurement and structural invariance of the CAAS structure across the Indonesian and Australian samples to examine the cross-cultural generalizability of the measurement structure and explore latent means differences in adaptability across the group. These multiple-group invariance tests were conducted in line with the taxonomy of invariance tests for ordered categorical data proposed by Millsap and Yun-Tein (2004), which was adapted for these higher-order models. This involved sequential and additive tests of (a) first-order configural invariance and the invariance of (b) first-order factor loadings (i.e. first-order weak invariance), (c) thresholds (i.e. first-order strong invariance), and (d) uniquenesses (i.e. first-order strict invariance). Following this, the invariance of the second-order model was tested with the baseline model specified according to the first-order strictly invariant model. This involved the testing of (e) second-order configural invariance and, sequentially and additively, invariance of the (f) second-order loadings, (g) intercepts of the first-order factors, (h) first-order factor disturbances, (i) second-order variance, and (j) second-order factor mean. The Australian sample served as the baseline/reference group for these MG invariance tests. An important assumption of models based on ordered-categorical data and limited information estimators is that the same number of response categories is used across groups. Empty cells can also lead to model convergence problems and inaccurate parameter estimates due to difficulties computing polychoric correlations (Flora & Curran, 2004). Accordingly, we collapsed adjacent sparse categories for CAAS Item 5, which did not have any observations in the lowest category of response for the Indonesian sample.

Results

Data screening

There were no missing data in the Indonesian data set. However, we deleted data submitted by participants who took less than 5 min or greater than 30 min to complete the survey. This decision was taken because it would be impossible to complete the survey in less than five minutes, and inappropriate to take longer than 30 min.

The average time of completion for retained cases was 14 min. The Australian data set was archival and previously screened of missing cases and outliers.

Latent structure

The test of the expected second-order model provided a marginally acceptable fit to the data, $\chi^2(248)=670.714$, $p<.001$, CFI=.904. TLI=.893, RMSEA=.078 (90% CI .071, .086). Loading estimates from the model are shown in Table 1. λ_{cs} refers to completely standardized factor loading using the variance of both the manifest indicator and latent variable for standardization. The first-order Control ($\lambda_{cs}=.481-.867$, $M=.620$), Curiosity ($\lambda_{cs}=.570-.773$, $M=.675$), and Confidence ($\lambda_{cs}=.558-.759$, $M=.673$) factors were well-defined with uniformly moderate to strong and statistically significant loadings. The Concern first-order factor was also relatively well-defined with a majority of strong and significant loadings ($\lambda_{cs}=.106-.779$, $M=.675$). Only the loading of Item 6 (“Concerned about my career”) was small and non-significant. The higher-order adaptability factor ($\lambda_{cs}=.807-.936$, $M=.888$) was also well-defined with uniformly strong and significant higher-order loadings.

Convergence and divergence

Fit indices for the four MTMM models are shown in Table 2. MTMM-4, specifying the hierarchical, multidimensional structure of career adaptability, estimated from the CAAS and CFI-R item data, with the two orthogonal method factors, provided the best fit to the data. Notably, in support of convergence, MTMM-4 provided an appreciably better fit to the data than MTMM-2, which posited two method factors and no trait factors. In the MTMM-4 solution, the higher-order adaptability trait factor was well-defined with all loadings from the first-order CAAS ($\lambda_{cs}=.669-.917$, $M=.821$) and CFI-R ($\lambda_{cs}=.457-.967$, $M=.717$) factors significant and large, accounting for the distinct measurement tools. Taken together, the results support the convergence of the CAAS scores with the CFI-R scores. To assess divergent validity evidence, we compared MTMM-4 with MTMM-3, the latter positing one general trait factor and two orthogonal method factors. MTMM-4 provided an appreciably better fit to the data than MTMM-3, indicating discrimination amongst the first-order adaptability constructs and supporting the hierarchical, multidimensional model of career adaptability.

Latent means differences

Next, latent mean differences in adaptability over gender and age were examined using MIMIC models. The test of the saturated model resulted in a marginally acceptable fit to the data, $\chi^2(248)=666.583$, $p<.001$, CFI=.911. TLI=.883, RMSEA=.078 (90% CI .071, 0.086). The threshold-invariant MIMIC model also provided an acceptable fit to the data, $\chi^2(288)=706.244$, $p<.001$, CFI=.911. TLI=.900, RMSEA=.073 (90% CI .066, .079), and, notably, no appreciable degradation in fit relative to the saturated model, MD $\chi^2(40)=64.131$, $p=.009$, $\Delta CFI=.000$, $\Delta RMSEA=-.005$. These results are suggestive of the

Table 1 First-and-second-order-factor loadings from the retained hierarchical solution in the Indonesian sample

Latent variable and indicators	λ	λ_{cs}	SE^a	h^2
Concern				
CAAS-1	1.000 ^b	.670	.040	.448
CAAS-2	0.897	.629	.046	.395
CAAS-3	1.380	.779	.037	.607
CAAS-4	0.840	.604	.043	.364
CAAS-5	1.147	.719	.044	.517
CAAS-6	0.118	.106	.064	.011
Control				
CAAS-7	1.000 ^b	.632	.043	.399
CAAS-8	0.728	.510	.048	.260
CAAS-9	2.135	.867	.031	.752
CAAS-10	1.313	.731	.034	.534
CAAS-11	0.702	.496	.047	.246
CAAS-12	0.673	.481	.047	.231
Curiosity				
CAAS-13	1.000 ^b	.682	.034	.446
CAAS-14	1.306	.773	.038	.598
CAAS-15	0.918	.651	.039	.423
CAAS-16	0.744	.570	.039	.325
CAAS-17	1.077	.709	.036	.503
CAAS-18	0.957	.666	.036	.444
Confidence				
CAAS-19	1.000 ^b	.714	.033	.510
CAAS-20	0.890	.672	.036	.452
CAAS-21	0.755	.610	.039	.372
CAAS-22	0.658	.558	.042	.311
CAAS-23	1.039	.727	.031	.529
CAAS-24	1.143	.759	.029	.576
Career adaptability				
Concern	1.000 ^b	.807	.022	.652
Control	0.749	.878	.024	.770
Curiosity	0.911	.932	.023	.868
Confidence	0.762	.936	.032	.875

$N=344$

λ unstandardized factor loading, λ_{cs} completely standardized factor loading

^aThese values are based on standardized estimates

^bThese loadings are fixed to 1.00 to establish the metric of the latent variable. h^2 = model-based communality estimates. All factor loadings are statistically significant at $p < .001$ with the exception of the loading of Item Concern 6 on the Concern first-order factor ($p = .096$)

Table 2 Fit statistics for the multitrait-multimethod model

Model	χ^2	df	CFI	TLI	RMSEA	90% CI	MD χ^2 (df)	Δ CFI	Δ RMSEA
MTMM-1	9716.561***	1326	.000	.000	.250	.148, .154	–	–	–
MTMM-2	4240.534***	1274	.646	.632	.092	.089, .095	2718.516 (52)***	+.646	.059
MTMM-3	2150.711***	1222	.889	.880	.052	.049, .056	825.757 (52)***	+.246	-.040
MTMM-4	1916.608***	1213	.916	.908	.046	.042, .050	212.618 (9)***	+.027	-.006

MTMM multitrait-multimethod, *df* degrees of freedom, *CFI* comparative fit index, *TLI* Tucker–Lewis index, *RMSEA* root mean square error of approximation, *CI* Confidence interval, *MD χ^2* chi-square different test for the WLSMV estimator operationalized via the DIFFTEST function in Mplus

*** $p < .001$

invariance of item thresholds. Finally, MIMIC-3 provided an acceptable fit to the data, $\chi^2(294) = 703.578$, $p < 0.001$, $CFI = .913$, $TLI = .904$, $RMSEA = .071$ (90% CI .064, .078), and, importantly, no appreciable degradation in fit relative to the more complex threshold invariance model, $MD \chi^2(6) = 4.758$, $p = .575$, $\Delta CFI = +.002$, $\Delta RMSEA = -.002$. These results support the invariance of the first-order factor intercepts. In this final model, there was no significant effect of gender ($\gamma_s = 0.190$, $p = .160$) or age ($\gamma_s = -0.035$, $p = .402$) on global career adaptability. γ_s denotes partially standardized coefficients using only the variances of the latent variables for standardization.

Cross-country generalizability

Finally, we examined the invariance of the CAAS responses per the retained higher-order model across the Indonesian and Australian samples. Table 3 shows the fit statistics and indices for the invariance model. The first-order configural invariance model (MGM-1) provided an acceptable fit to the data. This baseline model was compared to the more restrictive first-order weak invariance model in which the item factor loadings were fixed to equality across the samples. The test of the weak invariance model resulted in an acceptable fit to the data and, importantly, no appreciable decrement in fit relative to the configurally invariant model. The weak invariance model was then compared to a model of first-order strong invariance (MGM-3) with additional equality constraints imposed on the item thresholds. Although MGM-3 provided a marginally acceptable fit to the data in absolute terms, relative to the first-order weak invariance model, the model of first-order strong invariance showed an appreciable degradation in fit.

Given this evidence that the item thresholds were not fully invariant, suggesting some level of differential item functioning, we performed items of partial invariance of item thresholds. Based on ex post facto modification indices, we identified six thresholds, spanning four items, that contributed most to model misfit, and freed these thresholds parameters one a time. At the same levels of the career adaptability first-order

Table 3 Fit statistics and indices for the invariance model across the Australian and Indonesian samples

Model	χ^2	df	CFI	TLI	RMSEA	90% CI	MD χ^2 (df)	Δ CFI	Δ RMSEA
MGM1 (FO Configurational IN)	1546.313	492	.939	.932	.080	.076, .085	–	–	–
MGM2 (IN FO FL)	1515.570	512	.942	.938	.077	.072, .081	43.961 (20)**	+ .003	– .033
MGM3 (IN FO FL + Th)	1994.896	579	.919	.922	.086	.082, .090	607.087 (67)***	– .023	– .009
MGM4 (IN FO FL + Thp)	1723.852	573	.934	.936	.078	.074, .082	308.777 (61)***	– .008	+ .001
MGM5 (IN FO FL + Thp + FO Uniq)	1978.527	597	.921	.927	.083	.079, .088	259.681 (24)***	– .013	+ .005
MGM6 (IN FO FL + Thp + FO Uniqp)	1782.455	593	.932	.936	.078	.074, .082	124.856 (20)***	– .002	.000
MGM7 (SO Configurational INV)	1772.526	597	.932	.938	.077	.073, .081	–	–	–
MGM8 (INV SO FL)	1729.660	600	.935	.940	.075	.071, .079	12.505 (3)**	+ .003	– .002
MGM9 (INV SO FL + FO Factor Int)	1891.453	603	.926	.932	.080	.076, .084	103.826 (3)***	– .009	+ .005
MGM 10 (INV SO FL + FO Factor Intp)	1748.865	602	.934	.940	.076	.072, .080	19.654 (2)***	– .001	+ .001
MGM 11 (INV SO FL + FO Factor Intp + FO Factor Dist)	1889.402	606	.926	.933	.080	.076, .084	100.099 (4)***	– .008	+ .004
MGM 12 (INV SO FL + FO Factor Intp + FO Factor Dist + SO FV)	1563.775	607	.945	.950	.069	.065, .073	10.002 (1)**	+ .019	– .011
MGM 13 (INV SO FL + FO Factor Intp + FO Factor Dist + SO FM)	1639.917	608	.941	.946	.071	.067, .076	20.481 (1)	– .004	+ .002

df degrees of freedom, MD χ^2 change in χ^2 relative to the preceding model computed using the Mplus DIFFTEST function, Δ CFI change in comparative fit index, Δ RMSEA change in root mean square of approximation, MGM multiple-group model, INV invariance, FO First-order, SO second-order, FL factor loadings, Th Thresholds, Thp partial threshold, Uniq uniquenesses, Uniqp partial uniquenesses, FVCV factor variance–covariance matrix, FM factor means, Int Intercepts, Dist disturbances

*** $p < .01$, ** $p < .05$

dimensions, thresholds 3 and 4 for Items 6 and 7, and threshold 4 for Items 9 and 14, systematically differed across the samples. The results support the partial invariance of the item thresholds to the extent that the fit of this model did not show an appreciable decrement relative to the first-order weak factorial invariance model (i.e. MGM-2).

Next, a model of first-order strict invariance (MGM-5) was tested with equality constraints imposed on the item uniquenesses in addition to the invariant loadings and partially invariant thresholds. The test of this model resulted in an acceptable fit to the data; however, relative to the model of partial threshold invariance, MGM-5 provided an appreciable decrement in fit. Accordingly, we pursued tests of partial first-order strong invariance in which *ex post facto* modification indices were used to identify four item residual variances that contributed most to misfit (Residual for Items 6, 7, 11, and 16). After freeing these unique factors in the comparison sample, the final model of partial strict invariance (MGM-6) did not fit the data appreciably worse than the partial strong invariance model (i.e. MGM-4).

We then examined the invariance of the higher-order structure, with the partial first-order invariance model (MGM-6) serving as the baseline model from which the second-order configural invariance model was specified (MGM-7). MGM-7 provided an acceptable fit to the data. Support was also found for the invariance of the second-order loadings (MGM-8), but not for the invariance of the first-order factor intercepts (MGM-9), with the latter model showing a near-appreciable decrement in fit relative to MGM-8. Accordingly, we pursued tests of partial invariance of the first-order factor intercepts in which modification indices were used to identify one factor intercept that was non-invariant (i.e. the intercept for the first-order concern factor). When this invariance restriction was relaxed in a model of partial invariance of the first-order factor intercepts (MGM-10), the model provided an acceptable fit to the data and, notably, no appreciable decrement in fit relative to the MGM-8. Following from this, we examined a model of second-order strict invariance with additional equality restrictions imposed on the first-order factor disturbances (MGM-11). The test of this model resulted in an acceptable fit to the data and no appreciable decrement relative to the MGM-10. Support was also found for the invariance of the second-order factor variance (MGM-12). For the test of the second-order factor mean invariance model (MGM-13), even though the degradation in the CFI and TLI did not reach the commonly used thresholds for inferring an appreciable decrement, these cut-offs tend to perform less well in tests of latent mean invariance. Accordingly, we examined second-order latent mean differences from the less restrictive MGM-12. When the second-order career adaptability mean was constrained to zero in the Australian sample (for statistical identification), Indonesians' latent career adaptability was significantly higher (.380 SD, $p < .001$).

In summary, Table 4 presents the final descriptive statistics and correlations among the four CAAS subscales (i.e. Concern, Control, Curiosity, Confidence), the CFI-R subscales (i.e. Career Agency, Negative Career Outlook, Occupational Awareness, and Work-life Balance), and the SPES total score for employability.

Table 4 Descriptive statistic and correlation of measures

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Concern	22.91	3.54	–									
2. Control	22.53	3.81	.51**	–								
3. Curiosity	22.73	3.75	.54**	.62**	–							
4. Confidence	22.74	3.68	.55**	.61**	.70**	–						
5. CA	38.36	5.23	.35**	.44**	.39**	.46**	–					
6. NCO	9.53	3.25	–.12*	–.12*	–.18**	–.21**	–.22**	–				
7. OA	20.05	2.97	.21**	.24**	.24**	.28**	.57**	0.06	–			
8. Support	15.84	2.79	.26**	.23**	.27**	.34**	.62**	–.25**	.43**	–		
9. WLB	14.56	2.56	.24**	.33**	.24**	.39**	.69**	–.15*	.54**	.50**	–	
10. Emp	55.20	9.75	.44**	.38**	.41**	.40**	.50**	–0.05	.41**	.42**	.42**	–

CA Career Agency, NCO negative career outlook, OA occupational awareness, WLB Work-life Balance, Emp employability

p* < .05, *p* < .01

Discussion

The present research is the first published account of the validity of CAAS in an Indonesian sample. Whilst the career adaptability construct is often associated with career construction theory (Savickas & Porfeli, 2012), the present findings demonstrate the measurement properties of two distinct indicators of career adaptability—the CAAS and the CFI-R. In addition, the present study also affirmed the utility of the SPES, as a self-report measure of students' perceptions of their employability.

The original project that established the international versions of the CAAS (Savickas & Porfeli, 2012), and the research and development of versions in other non-Western nations, is inspiration for a multilateral project to further explore the measurement properties of the CAAS in the global South region. The present study compared the measurement properties of the CAAS between two countries (viz. Australia and Indonesia), which adds further evidence of the measure's validity. The present findings contribute to the body of evidence that the CAAS has potential in the South-East Asian region, for example, in China (Hou et al., 2012), Korea (Tak, 2012), Philippines (Tolentino et al., 2013), and Taiwan (Tien et al., 2012).

The Control, Curiosity, and Confidence subscales were well defined. Although the Concern subscale was acceptable, item 6 (“Concerned about my career”) of the Concern subscale was problematic. In their reporting on the CAAS international study, Savickas and Porfeli (2012) noted issues with item six, as did other researchers (e.g. McKenna et al., 2016; Teixeira et al., 2012). We suspect that the connotative meaning of the word “concern” in the Indonesian language may be a cause of the item's statistical properties. Instead of the item's original intended meaning as a positive outlook for the future, the word “concern” in Bahasa Indonesia may be interpreted in a negative manner such as worry or apprehension.

The CAAS subscales moderately correlated with the Career Agency subscale of the CFI-R, with a range of $r = .35$ to $r = .46$. These moderate coefficients would be expected given that Career Agency is conceptually similar to career adaptability. Similarly, the CAAS subscales also have moderate correlations with the Self-Perceived Employability Scale, ranging from $r = .38$ to $r = .44$, and with Career Agency, $r = .50$. Conversely, the CAAS subscales have conceptually appropriate lower negative correlations with Negative Career Outlook, with a range of $r = -.12$ to $r = -.22$. Evidently, a pessimistic mindset measured by Negative Career Outlook had no relation with the students' knowledge of the world of work, as measured by Occupational Awareness ($r = .06$) and employability ($r = -.05$). In summary, the correlations' directions and magnitudes are theoretically plausible and are evidence of the measures' convergent and divergent validity.

Practical implications

Many Indonesian students (more than 20 thousand) travel abroad for higher education and return home to work (Australian Embassy Indonesia, 2017; Ristekdikti, 2016). Indonesia has close education and trade relations with its multicultural but predominantly English-speaking neighbouring nations in Southeast Asia: Australia

to the south and Singapore to the north. Given these exchanges, the Indonesian language version of the CAAS, CFI-R, and the SPES may be useful tools for career development programmes that monitor and support students' preparations and transitions to and from other nations for the purposes of education and work. Given the issues of the employability in Indonesian graduates in the ASEAN region (Sulisworo, 2016), application of the measures within a career education and employability curricula may support efforts to enhance Indonesian graduates' career self-management by way of their self-knowledge of their employability. Similarly, educational institutions may see some utility in the measures as a way to benchmark graduate employability with other AEC nations and more broadly with Europe and the USA. Of course, such an ambitious public policy initiative would require a much broader sampling strategy than used for the present study. Thus, we present our considerations of some of the limitations of our findings.

Limitations and future research

Indonesia's cultural diversity includes geographical differences and more than 700 languages and dialects throughout Indonesia's widespread archipelago. The present study utilized the national language Bahasa Indonesia, recruited participants residing in the capital Jakarta, and those who held qualifications higher than the national average; thus, the findings should be read as relevant to mainstream metropolitan culture and language of Indonesia and not necessarily the diverse outer regions of Indonesia. Given that the present versions of the CAAS, CFI-R, and SPES are in the national language of Indonesia and tested on a metropolitan sample, future research may test the validity of these versions in the outer regions of Indonesia or amongst speakers of a different dialects. The present sample of Indonesian students is relatively young; therefore, future research could study the measures' properties within older employees and non-student samples of Indonesians.

Conclusion

In summary, the present findings are evidence of the measurement properties of the CAAS, CFI-R, and SPES in a sample of Indonesians. These findings are further evidence of the international utility of career adaptability as a construct for research and practice focussed on factors that contribute to employability.

Data availability The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

References

- Amarnani, R. K., Garcia, P. R. J. M., Restubog, S. L. D., Bordia, P., & Bordia, S. (2018). Do you think I'm worth it? The self-verifying role of parental engagement in career adaptability and career persistence

- among STEM students. *Journal of Career Assessment*, 26(1), 77–94. <https://doi.org/10.1177/1069072716679925>
- Ataç, L. O., Dirik, D., & Tetik, H. T. (2018). Predicting career adaptability through self-esteem and social support: A research on young adults. *International Journal for Educational and Vocational Guidance*, 18(1), 45–61. <https://doi.org/10.1007/s10775-017-9346-1>
- Aitiosogbe, K. A., Mama, N. P., Sovet, L., Pari, P., & Rossier, J. (2019). Perceived employability and entrepreneurial intentions across university students and job seekers in togo: The effect of career adaptability and self-efficacy. *Frontiers in Psychology*, 10, 180. <https://doi.org/10.3389/fpsyg.2019.00180>
- Australian Embassy Indonesia. (2017). More Indonesian Students Studying in Australia. *Media Release*. Retrieved from https://indonesia.embassy.gov.au/jakt/MR17_059.html
- Badan Pusat Statistik. (2019). *Indikator pasar tenaga kerja Indonesia Februari 2019*. Badan Pusat Statistik.
- Campion, E. D. (2018). The career adaptive refugee: Exploring the structural and personal barriers to refugee resettlement. *Journal of Vocational Behavior*, 105, 6–16. <https://doi.org/10.1016/j.jvb.2017.10.008>
- Cheung, R., Jin, Q., & Cheung, C.-K. (2018). Perceived employability of nonlocal Chinese University students in Hong Kong: The impact of acculturative and vocational variables. *Journal of Career Assessment*, 26(1), 137–153. <https://doi.org/10.1177/1069072716680045>
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, 9(4), 466–491. <https://doi.org/10.1037/1082-989X.9.4.466>
- Ghosh, A., & Fouad, N. A. (2017). Career adaptability and social support among graduating college seniors. *The Career Development Quarterly*, 65(3), 278–283. <https://doi.org/10.1002/cdq.12098>
- Gunawan, W., Creed, P. A., & Glendon, A. I. (2019). Development and initial validation of a perceived future employability scale for young adults. *Journal of Career Assessment*, 27(4), 610–627. <https://doi.org/10.1177/1069072718788645>
- Hou, Z.-J., Leung, S. A., Li, X., Li, X., & Xu, H. (2012). Career Adapt-Abilities Scale—China form: Construction and initial validation. *Journal of Vocational Behavior*, 80(3), 686–691. <https://doi.org/10.1016/j.jvb.2012.01.006>
- Jiang, Z., Hu, X., & Wang, Z. (2018). Career adaptability and plateaus: The moderating effects of tenure and job self-efficacy. *Journal of Vocational Behavior*, 104, 59–71. <https://doi.org/10.1016/j.jvb.2017.10.006>
- Johnston, C. S. (2018). A systematic review of the career adaptability literature and future outlook. *Journal of Career Assessment*, 26, 3–30. <https://doi.org/10.1177/1069072716679921>
- Kim, N. R., & Lee, K. H. (2018). The effect of internal locus of control on career adaptability: The mediating role of career decision-making self-efficacy and occupational engagement. *Journal of Employment Counseling*, 55(1), 2–15. <https://doi.org/10.1002/joec.12069>
- Lee, I. H., Sovet, L., Banda, K., Kang, D.-K., & Park, J.-H. (2020). Factor structure and factorial invariance of the Career Adapt-Abilities Scale across Japanese and South Korean college students. *International Journal for Educational and Vocational Guidance*. <https://doi.org/10.1007/s10775-020-09440-5>
- Lodi, E., Zammitti, A., Magnano, P., Patrizi, P., & Santisi, G. (2020). Italian adaption of Self-perceived Employability Scale: Psychometric properties and relations with the career adaptability and well-being. *Behavioral Sciences*, 10(5), 82.
- McIlveen, P., Burton, L. J., & Beccaria, G. (2013). A short form of the Career Futures Inventory. *Journal of Career Assessment*, 21(1), 127–138. <https://doi.org/10.1177/1069072712450493>
- McIlveen, P., Perera, H. N., Baguley, M., van Rensburg, H., Ganguly, R., Jasman, A., & Veskova, J. (2018). Impact of teachers' career adaptability and family on professional learning. *Asia-Pacific Journal of Teacher Education*, 1–15. <https://doi.org/10.1080/1359866X.2018.1444141>
- McKenna, B., Zacher, H., Sattari Ardabili, F., & Mohebbi, H. (2016). Career Adapt-Abilities Scale—Iran form: Psychometric properties and relationships with career satisfaction and entrepreneurial intentions. *Journal of Vocational Behavior*, 93, 81–91. <https://doi.org/10.1016/j.jvb.2016.01.004>
- McLennan, B., McIlveen, P., & Perera, H. N. (2017). Pre-service teachers' self-efficacy mediates the relationship between career adaptability and career optimism. *Teaching and Teacher Education*, 63, 176–185. <https://doi.org/10.1016/j.tate.2016.12.022>
- Millsap, R. E., & Yun-Tein, J. (2004). Assessing factorial invariance in ordered-categorical measures. *Multivariate Behavioral Research*, 39(3), 479–515. https://doi.org/10.1207/S15327906MBR3903_4
- Monteiro, S., Ferreira, J. A., & Almeida, L. S. (2020). Self-perceived competency and self-perceived employability in higher education: The mediating role of career adaptability. *Journal of Further and Higher Education*, 44(3), 408–422. <https://doi.org/10.1080/0309877X.2018.1542669>
- Nilforooshan, P., & Salimi, S. (2016). Career adaptability as a mediator between personality and career engagement. *Journal of Vocational Behavior*, 94, 1–10. <https://doi.org/10.1016/j.jvb.2016.02.010>

- Nugroho, W. S. N., Samik-Ibrahim, R. M., & Handayani, P. W. (2012). Graduate employability in Indonesia. In G. J. Kim (Ed.), *Graduate employability in Asia* (pp. 5–23). UNESCO.
- Obschonka, M., Hahn, E., & Bajwa, N. U. H. (2018). Personal agency in newly arrived refugees: The role of personality, entrepreneurial cognitions and intentions, and career adaptability. *Journal of Vocational Behavior*, *105*, 173–184. <https://doi.org/10.1016/j.jvb.2018.01.003>
- OECD. (2015). *Education in Indonesia: Raising to the challenge*. OECD.
- Park, C. J., Rottinghaus, P. J., Wang, Z., Zhang, T., Falk, N. A., & Ko, S.-J. (2019). Measurement invariance of the career futures inventory-revised across general and client samples. *Journal of Career Assessment*, *27*(4), 711–725. <https://doi.org/10.1177/1069072718816514>
- Perera, H. N., & McIlveen, P. (2017). Profiles of career adaptivity and their relations with adaptability, adapting, and adaptation. *Journal of Vocational Behavior*, *98*, 70–84. <https://doi.org/10.1016/j.jvb.2016.10.001>
- Presbitero, A., & Quita, C. (2017). Expatriate career intentions: Links to career adaptability and cultural intelligence. *Journal of Vocational Behavior*, *98*, 118–126. <https://doi.org/10.1016/j.jvb.2016.11.001>
- Ramos, K., & Lopez, F. G. (2018). Attachment security and career adaptability as predictors of subjective well-being among career transitioners. *Journal of Vocational Behavior*, *104*, 72–85. <https://doi.org/10.1016/j.jvb.2017.10.004>
- Ristekdikti. (2016). *Laporan tahunan kementerian riset, teknologi dan pendidikan tinggi republic Indonesia*. Biro Kerjasama dan Komunikasi Publik.
- Rothwell, A. T., Herbert, I., & Rothwell, F. (2008). Self-perceived employability: Construction and initial validation of a scale for university students. *Journal of Vocational Behavior*, *73*(1), 1–12.
- Rottinghaus, P. J., Buelow, K. L., Matyja, A., & Schneider, M. R. (2012). The Career Futures Inventory-Revised: Measuring dimensions of career adaptability. *Journal of Career Assessment*. <https://doi.org/10.1177/1069072711420849>
- Rottinghaus, P. J., Day, S. X., & Borgen, F. H. (2005). The career futures inventory: A measure of career-related adaptability and optimism. *Journal of Career Assessment*, *13*(1), 3–24. <https://doi.org/10.1177/106907270420271>
- Rottinghaus, P. J., Eshelman, A. J., Gore, J. S., Keller, K. J., Schneider, M., & Harris, K. L. (2017). Measuring change in career counseling: Validation of the career futures inventory-revised. *International Journal for Educational and Vocational Guidance*, *17*(1), 61–75. <https://doi.org/10.1007/s10775-016-9329-7>
- Rudolph, C. W., Lavigne, K. N., & Zacher, H. (2017). Career adaptability: A meta-analysis of relationships with measures of adaptivity, adapting responses, and adaptation results. *Journal of Vocational Behavior*, *98*, 17–34. <https://doi.org/10.1016/j.jvb.2016.09.002>
- Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, *80*(3), 661–673. <https://doi.org/10.1016/j.jvb.2012.01.011>
- Shabeer, S., Mohammed, S. J., Jawahar, I. M. J., & Bilal, A. R. (2018). The mediating influence of fit perceptions in the relationship between career adaptability and job content and hierarchical plateaus. *Journal of Career Development*. <https://doi.org/10.1177/0894845318763960>
- Sulisworo, D. (2016). The contribution of the education system quality to improve the nation's competitiveness of Indonesia. *Journal of Education and Learning*, *10*(2), 127–138.
- Suryadarma, D., Suryahadi, A., & Sumarto, S. (2005). *The measurement and trends of unemployment in Indonesia: The issue of discouraged workers*. SMERU Research Institute.
- Tak, J. (2012). Career Adapt-Abilities Scale—Korea form: Psychometric properties and construct validity. *Journal of Vocational Behavior*, *80*(3), 712–715. <https://doi.org/10.1016/j.jvb.2012.01.008>
- Teixeira, M. A. P., Bardagi, M. P., Lassance, M. C. P., Magalhães, M. D. O., & Duarte, M. E. (2012). Career Adapt-Abilities Scale—Brazilian Form: Psychometric properties and relationships to personality. *Journal of Vocational Behavior*, *80*(3), 680–685. <https://doi.org/10.1016/j.jvb.2012.01.007>
- Tien, H.-L.S., Wang, Y.-C., Chu, H.-C., & Huang, T.-L. (2012). Career adapt-abilities scale—Taiwan form: Psychometric properties and construct validity. *Journal of Vocational Behavior*, *80*(3), 744–747. <https://doi.org/10.1016/j.jvb.2012.01.010>
- Tolentino, L. R., Garcia, P. R. J. M., Restubog, S. L. D., Bordia, P., & Tang, R. L. (2013). Validation of the Career Adapt-Abilities Scale and an examination of a model of career adaptation in the Philippine context. *Journal of Vocational Behavior*, *83*(3), 410–418. <https://doi.org/10.1016/j.jvb.2013.06.013>
- Vargas, R., Sánchez-Queija María, I., Rothwell, A., & Parra, Á. (2018). Self-perceived employability in Spain. *Education Training*, *60*(3), 226–237. <https://doi.org/10.1108/ET-03-2017-0037>

- Wang, Y. C., Tien, H. L. S., & Wu, C. L. (2018). The relation of career adaptability to work-family experience and personal growth initiative among Taiwanese working parents. *Journal of Employment Counseling*, 55(1), 27–40. <https://doi.org/10.1002/joec.12071>
- Widaman, K. F. (1985). Hierarchically nested covariance structure models for multitrait-multimethod data. *Applied Psychological Measurement*, 9(1), 1–26. <https://doi.org/10.1177/014662168500900101>
- Woo, H. R. (2018). Personality traits and intrapreneurship: The mediating effect of career adaptability. *Career Development International*. <https://doi.org/10.1108/CDI-02-2017-0046>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.