Career Adapt-Abilities Scale — Taiwan Form: Psychometric properties and construct validity

Hsiu-Lan Shelley Tien [a,*], Yu-Chen Wang [b], Hui-Chuang Chu [c], Tsu-Lun Huang [d]

[a] National Taiwan Normal University, Taiwan
[b] National Taipei University of Education, Taiwan
[c] National Lin-Kou Senior High School, Taiwan
[d] University of Wisconsin-Madison, USA

ARTICLE INFO

ABSTRACT

The present study tested the reliability and validity of the Career Adapt-Ability Scale — Taiwan Form (CAAS-Taiwan Form). The CAAS consists of four scales, each with six items, which 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 were excellent. The factor structure was quite similar to the one computed for combined data from 13 countries. The CAAS-Taiwan Form is identical to the International Form 2.0. Based on the results, the CAAS-Taiwan Form, appears ready for use by researchers and practitioners who wish to measure adaptability resources among adults.

1. Introduction

Taiwan, the so-called Formosa, is a beautiful small island in southeastern Asia. With very limited natural resources, Taiwan concentrates on human resources in the nation's economic development, especially human intelligence and interpersonal communication services. Career counseling is therefore very important for individuals to develop their potentials. More than four decades ago, Taiwan began to offer vocational guidance to junior high graduates who were going to seek a job. The meaning of work focused on earning a living. The main task of vocational guidance was simply to help graduates find a job. Now the broadened meaning of career is defined as a life-long process of learning and work. Career counseling, instead of vocational guidance, is then defined as a set of counseling services available for all individuals across the life-span. With the progression of economics, technology, and social welfare in Taiwan, career counselors need to provide people with opportunities for potential development.

However, under the Chinese cultural context, career counseling at school has often been sacrificed by over-emphases on academic learning. It's necessary to remind counselors and policy makers with a broadened view of career counseling. Students need to be concerned with their future, curious about the world they experience, confident with what they can do, and be able to control their future development. For adult workers, they also need to be mature enough to create meanings in their work and life. Career adaptability is even a more important issue for them to satisfy the needs of self-realization. Also, the issue of adaptability for adult women is now emphasized. For example, Wang and Tien (2011) developed and examined the effects of a career counseling model for dual career women's work adjustment. We believe that career adaptability should be one of the important components within the training materials. And, an inventory to measure career adaptability resources would be an effective way to understand the individual's career development needs.

---

* Corresponding author.
  E-mail address: lantien@ntnu.edu.tw (H.-L.S. Tien).

1.1. Definition of career adaptability

Career adaptability, according to Savickas (1997), is defined as a psychosocial construct that denotes an individual's resources for coping with current and anticipated developmental tasks, occupational transitions, and work trauma, etc. Based on this notation, career adaptation is important for both students and working adults. For students, they need to be aware of their ability in adapting to the future world of work. They need to be responsible for the future choices and decisions, open to the new experiences, and be confident of their choices. For adults, it's even more important for them to increase their ability to adapt to the work market. To be more specific, the meaning of career adaptability on the present study was operationally defined as concern, control, curiosity, and confidence.

1.2. Purpose of the current study

While the *Career Adapt-Abilities — International Form* 2.0 (CAAS-International) demonstrated excellent reliability and appropriate cross-national measurement equivalence (Savickas & Porfeli, 2012-this issue), its validity for use in Taiwan needs to be addressed by further analysis. The present article describes the *Career Adapt-Abilities — Taiwan Form* (CAAS-Taiwan) and reports its psychometric properties, including item statistics and internal consistency estimates. In addition, we compare the factor structure of the CAAS-Taiwan to the multi-dimensional, hierarchical measurement model of the CAAS-International.

2. Methods

2.1. Participants

Participants included 493 adults age ranged from 19 to 63 with a mean age of 35.56 years ($SD = 8.55$). Participants volunteered to complete the CAAS-Taiwan. The sample was composed of 63.3% female and 36.7% males. All of them are Taiwanese. For the educational background, 45.2% of them received bachelor degree, 26.6% master degree, 1.6% doctoral degree, 9.9% with two-year college training, 10.1% with high school diploma, and the left below high school training. For marital status, 54.0% of them were married and live together, 42.2% unmarried, 1.6% divorced, 1.2% separated because of work location, and the left did not respond. For job professional field, 11% of them were in Realistic type of work, 11.2% in Investigative, 7.1% in Artistic,

Table 1
Career Adapt-Abilities Scale: items, standardized loadings, descriptive statistics, and internal consistency reliabilities.

Construct		Item (first-order indicators)	Mean	SD	Loading*	α
Concern	1.	Thinking about what my future will be like	4.01	.73	.80	.90
	2.	Realizing that today's choices shape my future	4.01	.76	.75	
	3.	Preparing for the future	4.03	.73	.83	
	4.	Becoming aware of the educational and career choices that I must make	3.96	.78	.72	
	5.	Planning how to achieve my goals	3.94	.74	.78	
	6.	Concerned about my career	4.13	.70	.77	
Control	1.	Keeping upbeat	3.93	.81	.59	.89
	2.	Making decisions by myself	4.10	.72	.76	
	3.	Taking responsibility for my actions	4.26	.65	.81	
	4.	Sticking up for my beliefs	4.06	.70	.80	
	5.	Counting on myself	4.11	.72	.83	
	6.	Doing what's right for me	4.13	.70	.81	
Curiosity	1.	Exploring my surroundings	4.03	.70	.79	.89
	2.	Looking for opportunities to grow as a person	4.06	.74	.73	
	3.	Investigating options before making a choice	3.98	.70	.81	
	4.	Observing different ways of doing things	4.02	.67	.80	
	5.	Probing deeply into questions I have	3.92	.72	.73	
	6.	Becoming curious about new opportunities	3.97	.76	.72	
Confidence	1.	Performing tasks efficiently	4.06	.64	.74	.91
	2.	Taking care to do things well	4.09	.66	.72	
	3.	Learning new skills	3.97	.73	.74	
	4.	Working up to my ability	3.90	.77	.79	
	5.	Overcoming obstacles	4.08	.66	.90	
	6.	Solving problems	4.13	.65	.91	
Construct		Construct (second-order indicators)	Mean	SD	Loading*	α
Adaptability	1.	Concern	4.01	.60	.84	
	2.	Control	4.10	.58	.93	
	3.	Curiosity	4.00	.58	.91	
	4.	Confidence	4.04	.57	.89	
		Adaptability	4.04	.52		.96

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

40.8 in Social, 11% in Enterprising, and 18.9% in Conventional type. As far as work experiences in the current professional field, it ranged from less than one year to 35 years with the mean of 8.75 years ($SD = 7.24$).

2.2. Measure

Career Adapt-Abilities Scale — Taiwanese Form (CAAS-Taiwan). The CAAS-Taiwanese was translated from the CAAS-International Form 2.0, which contains 24 items that combine to form a total score indicating career adaptability (for the items see Savickas & Porfeli, 2012-this issue). The 24 items are divided equally into four subscales that measure the adapt-ability resources of concern, control, curiosity, and confidence. In the International Form, participants responded to each item employing a scale from 1 (not strong) to 5 (strongest). However, in the Taiwanese Form, participants responded in 6-point scale with 1 represented not strong and 6 strongest. In order to compare the results with scores from different countries, we transformed the response to the scale from 1 (not strong) to 5 (strongest) in the current study. The item descriptive statistics and loadings from the confirmatory factor model appear in Table 1.

The total score for the CAAS-International has a reported reliability of .92, which is higher than the subscale scores of concern (.83), control (.74), curiosity (.79) and confidence (.85) (Savickas & Porfeli, 2012-this issue). The reliabilities of the subscales for the sample from Taiwan in the current study appear in Table 1. The reliabilities are pretty high for this sample relative to the total international sample. The total score for the CAAS-Taiwan has a reported reliability of .96, which is higher than the subscale scores of concern (.90), control (.89), curiosity (.89) and confidence (.91).

2.3. Procedures

Data was collected in both group and individual formats. For the group format, participants were mainly invited from the in-services training classes at the National Taiwan Normal University. They filled out the questionnaire in groups after the research assistant explained the purpose of the study. For the individual format, workers in a variety of companies were invited to participate. They filled out the questionnaires together or individually in their offices. All the participants received a Seven–Eleven Convenient Store gift card valued NT$ 200 (US$ 7.00 dollars) as reward.

3. Results

The CAAS-Taiwan item means and standard deviations suggest that the typical response was in the range of strong to very strong. Skewness and kurtosis values for the CAAS-Taiwan items ranged from (-1.21. to $-.60$) and (.45 to 3.08) respectively, suggesting that the items conform to the assumptions of confirmatory factor analysis for this sample. Scale means and standard deviations for the CAAS-Taiwan appear in Table 1.

Skewness and kurtosis values for the CAAS-Taiwan Form constructs ranged from (-1.05 to $-.73$) and (1.24 to 2.69) respectively, suggesting that the items conform to the assumptions of correlation-based statistics for this sample. Furthermore, the four subscales correlated from .88 to .92 to the adaptability total score.

3.1. Confirmatory factor analysis

Confirmatory factor analysis (CFA) showed that data for CAAS-Taiwan fit the theoretical model very well. The fit indices were RMSEA = 0.078 and SRMR = 0.049 (Savickas & Porfeli, 2012-this issue), which conform to established joint fit criteria (Hu & Bentler, 1999). They compare favorably to the fit indices for the CAAS-International model which were RMSEA = 0.053 and SRMR = 0.039 (Savickas & Porfeli, 2012-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.

3.2. Comparison of Taiwan factor model to international factor model

Comparing the CAAS-Taiwan hierarchical factor model to the model for the CAAS-International indicated that the loadings of first-order items on the second-order factors of adaptability were very similar. The most notable differences were for concern #1 (Keeping upbeat) exhibiting a weaker loading in the Taiwan data and confidence #5 (Overcoming obstacles) and confidence #6 (Solving problems) exhibiting stronger loadings in the Taiwan data. Of the second-order constructs, control exhibited the greatest difference in loadings between the Taiwan (.93) and international samples (.86), with the Taiwan sample exhibiting a stronger loading. The loading for Taiwan concern was .84 compared to .78 for International Form concern. The loading for Taiwan curiosity was .91 compared to .88 for the International form. The Taiwan confidence loading was .89 compared to .90 for the International Form. The Taiwan mean scores were very near the International mean scores: Taiwan concern (4.01), International concern (3.79); Taiwan control (4.10), International control (3.93); Taiwan curiosity (4.00), International curiosity (3.69); Taiwan confidence (4.04), International confidence (3.93); and Taiwan adaptability (4.04), International adaptability (3.84).

4. Discussion

Based on the results of the statistical analyses reported herein, we concluded that the CAAS-Taiwan performed quite similarly to the CAAS-International in terms of psychometric characteristics and factor structure. The total scale and four subscales each demonstrated 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 in the conclusion that the CAAS-Taiwan and CAAS-International function similarly.

To further explore the nature of career adaptability with individual clients, we believe that the four subscales are good vehicles for further discussion. In the process of discussion and exploration, we agree with Hall's (1996) assumption that career adaptability supports a "protean career," which is mainly self-directed and shaped by intrinsic values. Since career adaptability could be viewed as an individual's readiness to be involved in the world of work (Savickas, 2011), the relationship between adaptability and values needs further examination. It can also be a criterion variable for testing the CAAS's validity.

As far as the process of career adaptability, Tien and Wang (2010) believed that career adaptation could be divided into active coping and negative evasion. Concern, control, curiosity, and confidence are active in the nature. Lack of these four characteristics might be toward negative evasion. For adults, the results of career adaptation, according to Tien and Wang (2010), include three results: remaining at the current job, quitting the job temporarily, and changing the job. We retrospect these results and think it's more important to further examine the micro-content of career adaptability. Influencers and consequences for career adaptability need to be further examined.

In conclusion, it's obvious that career behavior will be affected by psychological dynamics implied in the subscales in *Career Adapt-Ability Scale* such as Concern, Control, Curiosity, and Confidence. Based on the results reported in the present study, the CAAS-Taiwan appears ready for use by researchers and practitioners who wish to measure adaptability resources among adults. Further research will examine its validity for use with college students and more employees. We can also interview mastered workers or employers in specific professional fields to examine their adaptation process. Qualitative analysis can be helpful for us to know the further nature of career adaptability. However, given the success of the CAAS-Taiwan when used with employed adults, we believe that researchers may begin to use the scale with adults who are anticipating occupational transitions.

Acknowledgment

Appendix A. Supplementary data

Supplementary data to this article can be found online at doi:10.1016/j.jvb.2012.01.010.

References

Hall, D. T. (1996). Protean careers of the 21st century. *The Academy of Management Executive, 10*, 8–16.
Hu, L. -t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55, doi:10.1080/10705519909540118.
Savickas, M. L. (1997). Career adaptability: An integrative construct for life span life space theory. *Career Development Quarterly, 45*, 247–259.
Savickas, M. L. (2011). Revision of the Career Maturity Inventory: The adaptability form. *Journal of Career Assessment, 19*, 355–374.
Savickas, M. L., & Porfeli, E. J. (2012). The Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior, 80*, 744–747 (this issue).
Tien, H. S., & Wang, Y. C. (2010). An exploration of career adaptation of adult workers in Taiwan. *Paper Presented at the Annual Conference of the American Psychological Association, August, San Diego, CA, USA.*
Wang, Y. C., & Tien, H. S. (2011). The effectiveness of the strength-centered career adjustment model for dual-career women in Taiwan. *Career Development Quarterly, 59*(5), 467–479.