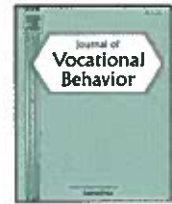




Contents lists available at SciVerse ScienceDirect

## Journal of Vocational Behavior

journal homepage: [www.elsevier.com/locate/jvb](http://www.elsevier.com/locate/jvb)

## Career Adapt-Abilities Scale-USA Form: Psychometric properties and relation to vocational identity

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## ARTICLE INFO

## Article history:

Received 2 January 2012

## Keywords:

Career adaptability  
Vocational identity  
Occupational transitions  
Career development

## ABSTRACT

This article reports construction and initial validation of the United States form of the Career Adapt-Abilities Scale (CAAS). 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 ranged from good to excellent. The factor structure was quite similar to the one computed for combined data from 13 countries. An attempt to strengthen the subscale internal consistency estimates and coherence of the factor structure by adding additional items failed. In the end the USA Form is identical to the International Form. Concurrent validity evidence was collected relative to career identity, given that adaptability and identity have been identified as meta-competencies for career construction in information societies. Relations between career adaptability and vocational identity formation processes and status outcomes were as predicted.

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## 1. Introduction

A collaborative team of psychologists in 18 countries worked together to linguistically explicate and operationally define the construct of career adaptability (Savickas & Porfeli, *this issue*). As a practical outcome, they sought to construct a career adaptability scale that could be used in different countries with the results easily comparable. Together they constructed the international form of the *Career Adapt-Abilities Scale* (CAAS-International) to measure adaptability. The CAAS-International Form consists of four subscales, one to measure each of four adapt-ability resources—concern, control, curiosity, and confidence. Each of the four subscales has six items. A total score for the 24 items indicates career adaptability. In addition to the core 24 items in the international form of the CAAS, each country collaborator was free to add additional constructs and subscales that may be unique to his or her own country. The purpose of this article is to describe the development of the USA form of the CAAS.

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

Examining the psychometric characteristics and factor structure of the CAAS-USA requires little decision making as relevant procedures are well established. While providing evidence of construct validity through factor analysis is straightforward, the question of concurrent validity required more thought. There are a wide range of variables available for examining concurrent validity of career adaptability and each of its four constructs. We decided to begin the process of establishing a nomological network of variables related to career adaptability by examining the major companion variable, namely vocational identity.

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Realizing that the individual rather than the organization shapes a career in information societies, Hall (1996b) formulated the concept of a protean career. As an adjective, protean means flexible, versatile, and adaptive. Hall described a "protean career" as self-directed and shaped by intrinsic rather than extrinsic values. In the pursuit of self-directed values, the individual uses two meta-competencies to chart a career course. Together, the meta-competencies of identity and adaptability give individuals a sense of when it is time to change and the capacity to change (Savickas, 2011). Accordingly, to gather initial evidence of concurrent validity, we examined the relation between career adaptability and vocational identity. We operationally defined vocational identity with the Vocational Identity Status Assessment (VISA; Porfeli, Lee, Vondracek, & Weigold, 2011). The VISA may be scored to provide two different types of indicators for vocational identity. It provides scores both for identity as a process such as exploring and making commitments and for adaptation as an outcome indicated by identity statuses. We expected that individuals with greater adaptability resources would display both higher levels of adapting through exploring and committing and greater progress toward identity achievement.

The distinction between identity-formation processes and outcomes is paralleled in career construction theory by distinctions among constructions rooted in the word *adapt*, which in Latin means to fit or join. Higher levels of adaptation (outcome) are expected for individuals who are willing (adaptive) and able (adaptability) to perform behaviors that address changing conditions (adapting). Career construction theory views adaptivity as a psychological style and adaptability as a psychosocial strategy. Adaptivity denotes the personality trait of being flexible or willing to change. Willingness to adapt is considered as an increasingly stable and durable trait or basic tendency that becomes situated at the core of the individual. In comparison, career adaptability is a psychosocial construct that denotes an individual's resources for coping with current and anticipated developmental tasks, occupational transitions, and work traumas that, to some degree large or small, alter their social integration (Savickas, 1997). These resources as measured by the CAAS are not core traits of an individual, instead they reside as the intersection of person-in-environment, thus they are psycho-social. Adaptability resources are the self-regulation 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.

Based on these distinctions concerning identity-formation and adaptability, we refined our expectations about relations between VISA and CAAS scores. In particular, we expected that CAAS-USA scores would relate positively to the VISA dimensions of exploring and committing. We expected no relation between career adaptability and the reconsideration dimension, especially flexibility but also self-doubt. As measured by the VISA, flexibility should relate to willingness to adapt or adaptiveness as a psychological variable, and not to adaptability resources as a psychosocial variable. We also expected career adaptability to

Table 1

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

Construct		Item (first-order indicators)	Mean	SD	Loading
Concern	1.	Thinking about what my future will be like	3.88	.92	.61
	2.	Realizing that today's choices shape my future	3.86	.97	.62
	3.	Preparing for the future	3.61	.95	.79
	4.	Becoming aware of the educational and career choices that I must make	3.95	.96	.75
	5.	Planning how to achieve my goals	3.63	1.02	.73
	6.	Concerned about my career	3.83	1.11	.43
Control	1.	Keeping upbeat	3.48	.95	.51
	2.	Making decisions by myself	3.87	.93	.59
	3.	Taking responsibility for my actions	4.00	.88	.65
	4.	Sticking up for my beliefs	4.19	.86	.61
	5.	Counting on myself	4.01	.91	.73
	6.	Doing what's right for me	4.00	.94	.73
Curiosity	1.	Exploring my surroundings	3.58	.93	.66
	2.	Looking for opportunities to grow as a person	3.89	.86	.80
	3.	Investigating options before making a choice	3.74	.95	.70
	4.	Observing different ways of doing things	3.77	.92	.71
	5.	Probing deeply into questions I have	3.36	1.09	.63
	6.	Becoming curious about new opportunities	3.81	.90	.64
Confidence	1.	Performing tasks efficiently	3.91	.87	.74
	2.	Taking care to do things well	3.91	.88	.83
	3.	Learning new skills	4.02	.87	.79
	4.	Working up to my ability	3.87	.95	.76
	5.	Overcoming obstacles	3.96	.89	.76
	6.	Solving problems	3.92	.94	.72
Construct		Construct (second-order indicators)	Mean	SD	Loading
Adaptability	1.	Concern	3.79	.71	.85
	2.	Control	3.93	.65	.89
	3.	Curiosity	3.69	.71	.85
	4.	Confidence	3.93	.73	.91

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

increase monotonically across a continuum of identity statuses arranged from higher to lower degrees of adaptation—achieved, moratorium, searching moratorium, foreclosed, and achieved.

## 2. Methods

### 2.1. Participants

Participants included 460 10th and 11th grade students with a mean age of 16.5 years ( $SD = .97$ ). Participants volunteered to complete a battery of instruments pertaining to school and work to include the CAAS-USA and the VISA. The sample was composed of 55% female, 21% African American, 71% Caucasian, 2% Asian, and approximately 5% were another race or biracial.

### 2.2. Measures

We used two measures in this study, the CAAS-USA and the VISA (Porfeli et al., 2011).

#### 2.2.1. Career Adapt-Abilities Inventory-USA Form

The CAAS-International Form 2.0 contains 24 items that combine to form a total score which indicates career adaptability (for the items see Savickas & Porfeli, *this issue*). Participants responded to each item employing a scale from 1 (*not strong*) to 5 (*strongest*). The 24 items are divided equally into four subscales that measure the adapt-ability resources of concern, control, curiosity, and confidence. The item descriptive statistics and loadings from the confirmatory factor model appear in Table 1. The total score for the CAAS-International has a reported reliability of .92, which is higher for than the subscale scores of concern (.83), control (.74), curiosity (.79) and confidence (.85) (Savickas & Porfeli, *this issue*). The reliabilities of the subscales for this sample appear in Table 2. With the exception of concern, the reliabilities are generally higher for this sample relative to the total international sample.

#### 2.2.2. Vocational Identity Status Assessment (VISA)

The VISA (Porfeli et al., 2011) is composed of three dimensions indicated by six subscales assessing vocational processes known to be indicative of progress toward an identity (Crocetti, Rubini, & Meeus, 2008; Luyckx, Goossens, Soenens, Beyers, & Vansteenkiste, 2005). The career commitment dimension is indicated by the career commitment making and career commitment identification subscales. Making commitments means a sense of certainty about a choice that has been made while identification means investing one's self into that choice. The career exploration dimension is indicated by the in-depth and in-breadth career exploration subscales. In-breadth exploration involves activities that lead to crystallizing preferences for occupational fields and ability levels while in-depth exploration involves activities that lead to specifying an occupational choice. The career reconsideration dimension is indicated by the commitment flexibility and commitment self-doubt subscales. Commitment flexibility means sensitivity and openness to changes in occupation interests and jobs while commitment self-doubt means feeling anxious and uncertain

**Table 2**  
Correlation matrix of the CAAS-USA and VISA constructs.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Concern	3.79	0.71	.82 (460)										
2. Control	3.93	0.65	.58** (460)	.80 (460)									
3. Curiosity	3.69	0.71	.59** (460)	.64** (460)	.84 (460)								
4. Confidence	3.93	0.73	.63** (460)	.70** (460)	.67** (460)	.90 (460)							
5. Adaptability	3.84	0.59	.82** (460)	.85** (460)	.85** (460)	.88** (460)	.94 (460)						
6. Commitment making	3.34	0.81	.30** (422)	.18** (422)	.18** (422)	.23** (422)	.26** (422)	.84 (422)					
7. Commitment identification	3.84	0.61	.41** (418)	.35** (418)	.34** (418)	.38** (418)	.44** (418)	.57** (414)	.75 (418)				
8. In-depth exploration	3.91	0.61	.51** (425)	.37** (425)	.45** (425)	.43** (425)	.52** (425)	.49** (416)	.63** (412)	.77 (425)			
9. In-breadth exploration	3.66	0.68	.29** (429)	.27** (429)	.38** (429)	.30** (429)	.36** (429)	.11 (420)	.31** (416)	.53** (425)	.82 (429)		
10. Commitment flexibility	3.16	0.79	-.12* (426)	-.08 (426)	.05 (426)	-.08 (426)	-.07 (426)	-.39** (422)	-.19** (418)	-.09 (420)	.34** (424)	.79 (416)	
11. Commitment self-doubt	2.50	0.81	-.24** (416)	-.19** (416)	-.06 (416)	-.21** (416)	-.20** (416)	-.14** (412)	-.28** (416)	-.20** (410)	.10* (414)	.52** (416)	.82 (426)

Note: Sample sizes reported in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .



regarding career planning. Each subscale contains five items and the response set ranges from 1 (*strongly disagree*) to 5 (*strongly agree*). Subscale scores are computed as an average of the indicator items. Internal consistency reliabilities for the sample employed in this study are reported in Table 2.

In addition to scores for identity-formation dimensions, the VISA may be scored to place individuals in one of six identity statuses. Four of the statuses are the ones identified by Marcia's (1966) foundational work that articulated four statuses produced by different combinations of exploration and commitment. The statuses are achieved (commitment based on exploration), foreclosed (commitment without exploration), moratorium (exploration without commitment), and diffused (little exploration or commitment). The VISA scores provide differentiation of exploration (in-depth versus in-breadth) and commitment (making and identifying). Using these differentiations uncovers a fifth status that has been repeatedly found in identity status research. The fifth status is typically labeled "searching moratorium," yet it could just as easily be labeled "tentative commitment" because it falls between the achieved and moratorium statuses. While there are differences among the statuses in the two exploration dimensions, there is substantial difference in the commitment dimensions. A continuum begins with the achieved status having high commitment making and low flexibility. Next comes the searching status with high commitment and very high flexibility. Finally comes the moratorium status with low commitment making and medium flexibility. The foreclosed status is characterized by low in-breadth exploration, while the diffused status is characterized by low exploration and commitment. About 20% of individuals cannot be classified into one of these five statuses by VISA scores; they are called undifferentiated.

### 3. Results

#### 3.1. Procedures

The CAAS-USA 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-USA items ranged from (−.81 to −.14) and (−.67 to .09) respectively, suggesting that the items conform to the assumptions of confirmatory factor analysis for this sample. Scale means and standard deviations for the CAAS-USA and VISA appear in Tables 1 and 2. Skewness and kurtosis values for the CAAS-USA constructs ranged from (−.45 to −.31) and (−.53 to −.11) respectively, suggesting that the items conform to the assumptions of correlation-based statistics for this sample. Furthermore, the four subscales correlated from .82 to .88 to the adaptability total score.

#### 3.2. Confirmatory factor analysis

Confirmatory factor analysis (CFA) showed that data for CAAS-USA fit the theoretical model very well. The fit indices were RMSEA = .052 and SRMR = .040, 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 = .053 and SRMR = .039. 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.

#### 3.3. Comparison of USA factor model to international factor model

Comparing the CAAS-USA 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 #6 (Concerned about my career) exhibiting a weaker loading in the USA data and control #6 (Doing what's right for me), confidence #2 (taking care to do things well), and confidence #6 (Solving problems) exhibiting stronger loadings in the USA data. Of the second-order constructs, concern exhibited the greatest difference in loading between the USA (.85) and international samples (.78), with the USA sample exhibiting a stronger loading. The loading for USA control was .89 compared to .86 for International Form control. The loading for USA curiosity was .85 compared to .88 for the International form. The USA confidence loading was .91 compared to .90 for the International Form. The USA mean scores were very near the International mean scores: USA concern (3.82), International concern (3.79); USA control (3.92), International control (3.93); USA curiosity (3.73), International curiosity (3.69); USA confidence (3.87), International confidence (3.93); and USA adaptability (3.81), International adaptability (3.84).

##### 3.3.1. Additional items

In preparing the CAAS-USA for testing, we wanted to ensure that we would end up with subscales composed of at least five items each. Thus, we added one item to each scale of the 6-items subscales in the CAAS-International. To the concern subscale we added "Planning important things before I start." To the control subscale we added "Finding the strength to keep going." To the curiosity subscale we added "Searching for information about choices that I must make." And to the confidence subscale we added "Doing challenging things." Analyses indicated that adding a seventh item to the USA Form did not improve the internal consistency or the coherence of the factor structure. We determined that the additional items were not needed because the six item subscales worked very well. In the end, we decided that the CAAS-USA and CAAS-International would be identical.

##### 3.3.2. Concurrent validity

To provide initial evidence for the validity of the CAAS-USA scores, we correlated these scores to VISA scale scores. The correlation coefficients reported in Table 2 show a consistent pattern of association between the VISA subscales and the CAAS

adaptability score, with five of the six correlations being significant at  $\alpha = .01$  level. There was no significant relation between the Commitment Flexibility and Adaptability scores. The strongest relation of adaptability was to the In-Depth Exploration (.52) and Commitment Identification (.44) subscales and the weakest relation was to the Commitment Self-Doubt (–.20) subscale. The pattern of association between the CAAS adaptability score and the six VISA subscales was generally reproduced in the association of each of the four CAAS subscales to the six VISA subscales.

Using VISA score profiles, we assigned individuals to identity statuses (see Fig. 1). We then calculated the mean scores shown in Table 3 for the CAAS-USA subscales and total separately for each of the identity statuses created by VISA scores. ANOVA models found that concern ( $F(5,400) = 25.80, p < .001, \eta^2 = .24$ ), control ( $F(5,400) = 14.96, p < .001, \eta^2 = .16$ ), curiosity ( $F(5,400) = 17.50, p < .001, \eta^2 = .18$ ), confidence ( $F(5,400) = 20.88, p < .001, \eta^2 = .21$ ), and their sum in the form of adaptability ( $F(5,400) = 28.81, p < .001, \eta^2 = .27$ ) demonstrated statistically significant and meaningful mean differences across the VISA statuses. The mean scores for the four subscales and total score showed a clear decreasing monotonic function across the statuses sequenced as achieved, foreclosed, searching moratorium, moratorium, and diffused. These five identity statuses reflect decreasing commitment to and certainty about career choices; and, adaptability resources appear to be associated with this decrease. The achieved and foreclosure item means were about .2 apart for four of the five scores. However, on the score for curiosity they were .3 different, with curiosity being the only subscale on which foreclosed individuals scored below 4.0. The item means for moratorium individuals were substantially lower, and for the diffused they were even lower.

#### 4. Discussion

Based on the results of the statistical analyses reported herein, we concluded that CAAS-USA performs quite similarly to the CAAS-International in terms of psychometric characteristics and factor structure. The total scale and four subscales each demonstrate good to excellent internal consistency estimates and a coherent multidimensional, hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources. These results should bolster confidence in the conclusion that the CAAS-USA and CAAS-International function similarly.

Researchers can also be confident that career adaptability as measured by the CAAS-USA relates strongly to vocational identity. This is important because adaptability and identity have been theorized as the two major meta-competencies in career construction (Hall, 1996; Savickas, 2011). The correlations between career adaptability and vocational identity provide strong evidence of concurrent validity for the CAAS-USA. As would be expected, career adaptability showed strong relations with in-depth career exploration and identification with career commitments. Career adaptability shared 27% variance with in-depth exploration to identify personal strengths relative to a specific occupation. It also shared 18% variance with commitment identification, or in other words, a deep personal identification with a meaningful career that will manifest one's self-concept in work activities. Higher levels of adaptability thus align with seeking and making career choices that implement one's identity. Thus a more coherent identity may be the reward for investing the adaptability resources of concern, control, curiosity, and confidence. In contrast, career adaptability associated inversely with the two reconsidering dimensions of identity. The significant negative relation of adaptability to self-doubt suggests that lower levels of career adaptability resources align with higher levels of anxiety and uncertainty concerning one's career choices and commitments. The lack of an association between flexibility and adaptability was expected in that the CAAS-USA measures adaptability resources not adaptivity or the willingness to adapt. The flexibility items pertain to the willingness to adapt to anticipated changes and transitions rather than currently available adaptability resources. Recall that flexibility or willingness to adapt differs from available resources (which the CAAS-USA measures), adapting behaviors, and adaptation outcomes. The VISA flexibility scale appears to measure adaptiveness (i.e., willingness to adapt) rather than the resources that condition adapting behaviors. Better outcomes (adaptation) are expected for individuals who are willing (adaptivity) and able (adaptability) to perform behaviors that address changing conditions (adapting).

Examining the scale mean scores for individuals placed in the identity statuses led us to conclude that career adaptability related strongly, consistently, and as expected to identity status assignment. The adaptability scores decreased across the statuses arranged as diffused, moratorium, searching moratorium, foreclosed, and achieved. The results were even more striking when comparing just the achieved to the foreclosed. These two statuses are often difficult to distinguish using scores from career inventories because both statuses show strong commitment, one with exploration and one without exploration (Brisbin & Savickas, 1994). The profile of career adaptability resources clearly distinguished the two groups with the achieved status scoring higher on each of the four subscales. Even more importantly, the largest difference occurred on the curiosity subscale with achieved scoring 4.15 and foreclosed scoring 3.85. Thus, the achieved and foreclosed statuses differed across the board on concern, control, and confidence, yet the telling difference was on curiosity. Curiosity fuels in-breadth exploration, which is the major characteristic lacking among foreclosed

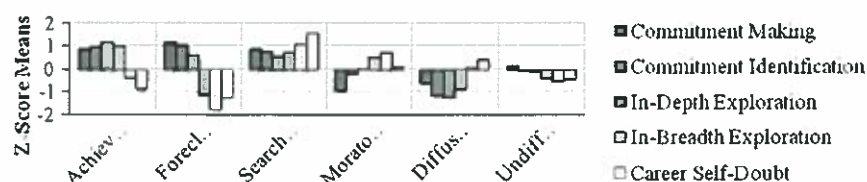


Fig. 1. VISA subscale mean profiles across identity statuses.

**Table 3**  
CAAS means for identity statuses.

	Achieved (14.0%)	Foreclosed (8.9%)	Searching moratorium (10.6%)	Moratorium (23.7%)	Diffused (21.7%)	Undifferentiated (21.2%)
Concern	4.41	4.22	3.91	3.72	3.34	3.66
Control	4.38	4.18	4.04	3.95	3.59	3.77
Curiosity	4.15	3.85	3.98	3.76	3.27	3.50
Confidence	4.47	4.31	4.14	3.96	3.48	3.80
Adaptability	4.35	4.14	4.02	3.85	3.42	3.68
N	57	36	43	96	88	86

individuals who commit to conferred goals rather than self-chosen ones. This finding also provides strong initial evidence of concurrent validity for CAAS-USA scores.

In turn, the CAAS-USA results support the construct validity of the VISA, especially in using a searching moratorium status. The VISA models places searching moratorium halfway between the achieved and moratorium statuses. It is a “tentative” achieved status. For individuals in the searching moratorium status, their scores for overall adaptability as well as concern, control, curiosity, and confidence all fell midway between these same scores for individuals in the achieved and moratorium statuses.

Based on the results reported herein, the CAAS-USA appears ready for use by researchers and practitioners who wish to measure adaptability resources among students. Further research will examine its validity for use with employed adults. However, given the success of the CAAS-International when used with employed adults, we believe that researchers may begin to use the scale with adults who are anticipating occupational transitions.

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