Measuring career adaptabilities in the Brazilian context: Development and validation of the CAAS+C Brazilian Form

Abstract

This paper documents the translation and adaptation of the *Career Adapt-Abilities Scale + Cooperation Scale* (CAAS+C; Savickas & Porfeli, 2015) to the Brazilian context and provides initial validity evidence for this instrument by testing its internal structure and exploring its relationships with external variables (i.e., Big Five traits, social support, and preference for working in groups). Data were gathered in two Brazilian samples (N = 351 and N = 920, respectively). Regarding the internal structure of the 30-item CAAS+C-Brazilian Form, the results provided support for the expected five-dimensional solution, including career Concern, Control, Curiosity, Confidence, and Cooperation. Further, Cooperation was the adaptability dimension with the strongest correlation with social support, and positive and moderate correlated with Agreeableness. Finally, Cooperation was identified as the only adaptability dimension significantly related to the preference for working in groups. The results of this study provide support for the structural and criterion validity of the CAAS+C scale in a Brazilian context.

Keywords: career counseling; career adaptability; social support; career construction

Proposed by Savickas (2013), the concept of career adaptability is widely explored in the literature and constantly updated. The last update was made by Savickas and Porfeli (2015), who updated the Career Adapt-Abilities Scale (CAAS) with the Cooperation sub-scale. Thus, this study's objective is to test the Cooperation subscale in the Brazilian context.

Career Adapt-Abilities Scale + Cooperation

21st century careers have been described as rapidly changing and increasingly characterized by uncertainty and volatility (Savickas et al., 2009). In the Brazilian context as well, employment forms and career constructions are on the rise that promote this tension between stability/permanence and flexibility/change (Ribeiro, 2015). In this context, the concept of career adaptability has been introduced to help understand how people can cope with the challenges bound to the new career landscape. Savickas (2013) defined career adaptability as a psychosocial construct related to "resources for coping with current and anticipated vocational development tasks, occupational transitions, and work traumas that, to some degree large or small, alter their social integration" (p. 157). In order to stimulate its use in career research and practice, Savickas and Porfeli (2012), in an integrated effort with researchers from 13 countries, developed the CAAS as a suitable assessment instrument for this construct. By means of 24 items, the widely used CAAS measures each of the four dimensions (i.e., Concern, Control, Curiosity, and Confidence) that were originally distinguished within this construct.

Savickas (2013) and Savickas and Porfeli (2012) defined the "four Cs" of career adaptability as follows. *Concern* involves thinking about one's career-related future proactively, preparing to face challenges in an optimistic manner (e.g., planning how to achieve career goals). *Control* refers to the capability to make decisions about and to take responsibility over one's

career. *Curiosity* is about the ability to explore the self as well as one's environment to make decisions in an informed and objective way. Finally, *Confidence* entails the success expectations of an individual with regard to the actions that will need to be performed in order to establish a successful career (e.g., learning new skills). Studies using a Brazilian version of the CAAS were conducted by Teixeira, Bardagi, Lassance, Magalhães and Duarte (2012) and by Audibert and Teixeira (2015), confirming the original factor structure and showing adequate reliability coefficients for each of the four subscales of the instrument.

In 2015, Savickas and Porfeli uploaded an update/adaptation of the CAAS on the website of Vocopher (www.vocopher.com), which is a career collaboratory involving academic professionals, career counselors, and professional web developers from around the globe. The update described the development of a new version of the CAAS, now also including a Cooperation subscale, which was composed of 11 items. The authors explained how their original attempt to add a Cooperation subscale ("+C") in the original CAAS failed because it did not correlate with any of the other CAAS dimensions. Savickas and Porfeli (2015) defined *Cooperation* as an interpersonal resource that becomes activated during career transitions, supporting the relational component of adaptability. Building on this measurement innovation, Einarsdóttir, Vilhjálmsdóttir, Smáradóttir, and Kjartansdóttir (2015) reported a study testing the CAAS+C in a sample of Icelandic students. Based on factor analysis, these authors retained six out of the original 11 items that had the strongest loadings (i.e., Getting along with all kinds of people; Cooperating with others on group projects; Compromising with other people; Going along with the group; Sharing with others; Understanding others point of view). In this Icelandic sample, all CAAS+C dimensions demonstrated good internal consistencies, with Cronbach's alpha's ranging from .82 (Control and Confidence) to .87 (Cooperation).

Following up on this, Nye, Leong, Prasad, Gardner, and Tien (2017) also conducted a psychometric study on the CAAS+C using samples from the United States, China, and Thailand. Similar to the Icelandic study, Nye et al. (2017) also selected the six highest-loading items (i.e., Playing my part on a team; Getting along with all kinds of people; Compromising with other people; Learning to be a good listener; Sharing with others; Hiding my true feelings for the good of the group) as indicators of Cooperation. Next, Nye et al. (2017) proposed a 30-item version for CAAS+C, representing the four original C's plus Cooperation. Reliability was satisfactory in the three samples, except for the Concern dimension specifically in the American sample (α = .62).

CAAS + C: correlation with support social and Big Five

Considering that Cooperation refers to an interpersonal resource activated during career transitions, this characteristic can expect to be associated with perceptions of received social support. Previous work relating the original four C's to social support has yielded mixed and generally weak findings as detailed below. Kenny and Bledsoe (2005) indicated that the participants who had more support from family, friends, teachers, and colleagues reported higher career adaptability levels. The results found by Hirschi (2009) suggest that the perceived social support was a positive predictor of greater career adaptability. Wang and Fu (2015) demonstrated that social support positively predicted career adaptability. Ghosh and Fouad (2017) reported negative and weak correlations between social support and Concern, Control, and Confidence.

Previous studies have found statistically significant relationships between the four dimensions of career adaptability and the Big Five personality factors. A meta-analysis study conducted with data from 90 studies that the general score of career adaptability is more strongly

correlated with the Big Five's Conscientiousness (*r* = .49; Rudolph, Lavigne, & Zacher, 2017). Similar results have been recovered in national studies (Bardagi & Albanaes, 2015; Teixeira et al., 2012). In both studies, Conscientiousness was identified as the trait most strongly correlated to a total score of career adaptability (*r* = .56 and .48, respectively). Strong correlations were observed between Concern, Control, Confidence and Conscientiousness, and Curiosity and Openness regarding career adaptability dimensions. To the best of our knowledge, no previous research has investigated the relationship between social support and the Big Five and the extended model of career adaptabilities, including Cooperation in addition to the previously defined four C's.

Purpose and hypotheses of the study

The current study, testing the internal structure and external correlates of the CAAS+C in a Brazilian context, is consistent with a greater effort in the literature aimed at expanding the international use of career assessment instruments. It can be argued that Brazil, as an example of a collectivist culture (Gouveia & Clemente, 2000; Vaz-Torres & Pérez-Nebra, 2015), represents a particularly appropriate setting to test the relevance of an additional Cooperation scale in the context of career adaptabilities. Evidence for the validity of the Cooperation scale will be sought in two ways. First, factor analysis will be used to investigate the internal structure of the CAAS+C in the Brazilian context. Second, CAAS+C dimensions will be related to a range of criteria, including perceived social support, Big Five personality traits, and the preference for working in groups.

Four hypotheses were formulated to guide this research. First, regarding the internal structure of the CAAS+C, it is expected that five dimensions can be identified, describing

Concern, Control, Confidence, Curiosity and Cooperation (Hypothesis 1). In addition, three hypotheses describe the expected associations between career adaptabilities and the external variables included in this study. Regarding the relationship of perceived social support, we expect the Cooperation dimension to demonstrate stronger correlations than the other adaptability dimensions (Hypothesis 2). Regarding associations with Big Five traits, we expect all adaptability dimensions to demonstrate positive and moderate correlations with Conscientiousness (Hypothesis 3a) and, for Cooperation in particular, we also expected an additional positive association with Agreeableness (Hypothesis 3b). Finally, regarding the relationship of a preference for working in groups, we expected the interpersonal characteristics included in this study, specifically Cooperation, all social support factors, Agreeableness, and Extraversion, to be positively correlated with this preference (Hypothesis 4).

Method

Translation

Prior to collecting data, a Brazilian-Portuguese version of the CAAS+C was developed using a translation-back translation procedure. Because Brazilian Portuguese items were already available for the original C's of adaptability, only the 11 Cooperation items needed to be translated and adapted. Three bilingual psychologists, i.e., Portuguese native speakers who are proficient in English, translated the items as a part of the completion of their graduate program. Once finished, there was a brief discussion to select the best wording for the items. In the second stage, the Portuguese version was back-translated into English by a professional who was not familiar with the original items. These back-translated items were sent back to one of the authors of the original instrument who considered 10 out of 11 items appropriate. The only item indicated as inappropriate in the original version was "Going along with the group," which was

back-translated as “Making part of a group.” After the advice of the author of the original instrument, this item was modified in Portuguese and, when back-translated again, was considered appropriate.

Participants and procedures

The Sample 1 consisted of 351 people (62.7% female) with ages ranging from 18 to 65 years old (M = 33.48; SD = 9.81). All participants were employed at the time of the data collection, and the educational level of participants ranged from elementary school to graduate program, with the highest concentration of participants at the levels of College (n = 107; 30.5%) and Graduate program (n = 84; 23.9%). Participants were from 18 Brazilian states; around 70% were from the southeast region, where the cities of São Paulo, Campinas, Belo Horizonte, and Rio de Janeiro are located.

Data were collected using an online survey that was distributed by e-mail and social media (i.e., Facebook). Participants provided their informed consent before completing the questionnaires. Participants subsequently completed a socio-demographic questionnaire, followed by the newly developed CAAS+C.

Sample 2 consisted of 920 (53.4% female) participants between 15 and 65 years old (M = 23.53; SD = 8.53). Most of the participants came from the Southeast (63.8%) and Mideast (where cities of Brasilia and Goiania are located; 11.7%) regions. There was no overlap with Sample 1.

Sample 2 was split into two subsamples, one formed by adolescents and the other populated by adults. The adolescent subsample consisted of 293 participants (68.9% female), ranging between 15 and 18 years old (M = 17.20; SD = .86). All of them were either still in high school (80.9%) or completed high school the year before (19.1%). The adult subsample consisted

of 627 participants (64.2% female) ranging between 19 and 65 years old (M = 26.51; SD = 8.88). Educational levels included Elementary school (n = 158; 25.4%), Higher education (n = 361; 57.9%) and Graduate program (n = 104; 16.7%).

Data collection for Study 2 was conducted after finishing Study 1. In addition to CAAS+C, two other constructs were assessed in this study, including social support and Big Five personality. Similar to Study 1, all data for this study were collected using an online survey that was distributed via e-mail and social media.

Adolescents were asked to complete only the socio-demographic questionnaire and the CAAS+C. Adults, conversely, were asked to complete the socio-demographic questionnaire, CAAS+C, and at least one more instrument (i.e., measuring social support or Big Five traits). The purpose of this strategy was to decrease the workload of participants. In the results section, we specify the sample size for each analysis.

Instruments

Socio-demographic questionnaire. All participants were asked to report on their demographic characteristics, including gender (1 = female; 2 = male), age (open question), educational level (1 = high school; 2 = higher education; 3 = graduate students), current occupation (open question) and state of residence. In Sample 2, participants were additionally asked: “how do you prefer to accomplish your activities (at work or school): alone or in groups?”. Participants had to select one of both response options.

Career Adapt-Abilities Scale + Cooperation Scale (CAAS+C). We used the Brazilian version of CAAS (Savickas & Porfeli, 2015) adapted by Audibert and Teixeira (2015). This scale consists of 24 items to measure the 4 C’s (and a general adaptability score). For the current study, we included 11 additional items (see Study 1) to measure a fifth Cooperation dimension,

bringing the total number of items for the CAAS+C to 35. Cronbach alpha coefficients are reported in Table 1 and Table 3.

Social Support Perceptions Scale – adult Version (EPSUS-A, from Portuguese acronym - Cardoso & Baptista, 2014). This widely used instrument aims to assess perceptions of received social support. The scale has 36 items, distributed across four factors: Affective (referring to emotional support; α = .92), Social Interactions (referring to support from interpersonal relationships; α = .75), Instrumental (referring to the perception of material and financial support; α = .82) and Coping with Problems (referring to the perceived availability of people who can help out with decision making or conflict solving; α = .83). Responses are coded using a 4-point Likert-type scale, ranging from 0 (never) to 3 (often).

*Big Five Inventory (*John & Srivastava, 1999; Brazilian version by Andrade, 2008). This inventory assesses personality from a Big Five perspective. It consists of 44 items distributed across five factors, including Openness (values the artistic, the aesthetic; α = .75), Conscientiousness (insists on completing task or work; α = .79), Agreeableness (likes to cooperate with others; α = .71), Extraversion (is conversational, communicative; α = .82), and Neuroticism (is depressed, sad; α = .82). Response options are presented on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Data analysis

Study 1. Sample descriptives were analyzed using SPSS 25. Next, Mplus 7.11 software was used to investigate CAAS + C's internal structure using Exploratory Factor Analysis. Parallel Analysis was used to investigate the number of factors to be extracted. We used Weighted Least Squares Mean and Variance Adjusted (WLSMV) estimators and the Geomin rotation method. Reliability was evaluated based on internal consistency (Cronbach's alpha).

Study 2. Descriptive statistics, and Pearson's correlations were conducted using SPSS 25. In addition, Confirmatory Factor Analysis was conducted in MPlus 7.11 using Weighted Least Squares Mean and Variance Adjusted (WLSMV) estimators and the Geomin rotation method. Model fit was evaluated using the chi-square test and other commonly used indices, including, Confirmatory Fit Index (CFI > .95), Tucker-Lewis Index (TLI > .95), and Root Mean Square Error of Approximation (RMSEA < .06; Hu & Bentler, 1999).

Results

Study 1

After the translation, the newly developed Cooperation items were integrated into the existing CAAS Brazilian form (Audibert & Teixeira, 2015; Teixeira et al., 2012) and administered in Sample 1. The 35 items were submitted to Exploratory Factor Analysis, expecting that five dimensions would emerge. However, a Parallel Analysis suggested the extraction of only three dimensions. We next performed Exploratory Factor Analysis to evaluate the extraction of one (X^2 (560) = 3936.977; p = .01; CFI = .80; TLI = .79; RMSEA = .13), two (X^2 (526) = 2654.889; p = .01; CFI = .87; TLI = .86; RMSEA = .11), three (X^2 (493) = 2043.193; p = .01; CFI = .91; TLI = .89; RMSEA = .10), four (X^2 (461) = 1505.925; p = .01; CFI = .94; TLI = .92; RMSEA = .08), and five (X^2 (430) = 1212.801; p = .01; CFI = .95; TLI = .94; RMSEA = .07) dimensions. The five-dimensional structure was the one with the best fit indexes, according to theoretical expectations. The results are shown in Table 1.

Table 1

CAAS+C Exploratory Factor Analysis with five dimensions

Items	F1	F2	F3	F4	F5
1- Thinking about what my future will be like	**.83**	-.05	-.06	.02	.10
2- Realizing that today's choices shape my future	**.72**	.05	-.06	.08	.16
3- Preparing for the future	**.78**	-.01	.12	.15	-.08
4- Becoming aware of the educational and vocational choices that I must make	**.67**	.07	.20	-.01	.03
5- Planning how to achieve my goals	**.60**	.03	.38	.02	-.01
6- Concerned about my career	**.63**	.00	.40	-.04	.01
7- Keeping upbeat	.09	**.52**	.20	-.02	.06
8- Making decisions by myself	.18	**.66**	.00	.02	-.08
9- Taking responsibility for my actions	-.01	**.56**	.00	.15	.22
10- Sticking up for my beliefs	-.10	**.73**	.06	.06	.13
11- Counting on myself	.04	**.70**	.09	.05	.08
12- Doing what's right for me	-.06	**.74**	.06	.02	.09
13- Exploring my surroundings	.00	.49	**.39**	.04	.01
14- Looking for opportunities to grow as a person	.12	.40	**.43**	.09	-.01
15- Investigating options before making a choice	.08	.17	**.58**	-.02	.14
16- Observing different ways of doing things	.04	.08	**.68**	.01	.15
17- Probing deeply into questions that I have	-.02	.16	**.56**	.15	.12
18- Becoming curious about new opportunities	.03	.30	**.43**	.24	-.04
19- Performing tasks efficiently	.07	.08	.17	**.69**	.06
20- Taking care to do things wel	.05	.05	.00	**.85**	.09
21- Learning new skills	.00	.15	.27	**.54**	.04
22- Working up to my ability	.09	.01	.15	**.74**	.09
23- Overcoming obstacles	.02	.02	.47	**.55**	.01
24- Solving problems	-.01	.02	.48	**.60**	.00
25- Becoming less self-centered	-.07	-.30	.33	.04	**.65**
26- Acting friendly	-.01	-.30	.27	.11	**.79**
27- Getting along with all kinds of people	-.10	-.01	.10	.05	**.76**
28- Cooperating with others on group projects	-.05	-.08	-.03	.08	**.92***
29- Playing my part on a team	.03	.10	-.19	.19	**.81***
30- Compromising with other people	.06	.15	-.19	.11	**.81***
31- Learning to be a good listener	.12	-.06	.11	-.13	**.80***
32- Contributing to my Community	.05	.07	.20	-.21	**.68**

33- Going along with the group	.02	.12	.02	-.34	**.84***
34- Sharing with others	.00	.14	-.02	-.21	**.89***
35- Hiding my true feelings for the good of the group	.16	.00	.02	-.28	**.53**
Alpha	.88	.90	.89	.91	.93
Correlations between factors					
	F1	F2	F3	F4	F5
Concern	1				
Control	.48	1			
Curiosity	.36	.56	1		
Confidence	.40	.57	.45	1	
Cooperation	.36	.59	.52	.63	1

Note. Items in bold indicate factors to which they were alocated; * = 6 items with higher loadings. Labels: F1 = Concern; F2 = Control; F3 = Curiosity; F4 = Confidence; F5 = Cooperation. Items in Portuguese can be found in the supplementary materials.

Table 1 shows that the item loadings were generally consistent with the expectations. However, three Curiosity items (see items 13, 14, and 18) and two Confidence items (see items 23 and 24) demonstrated substantial cross-loadings: in this case, loaded on Curiosity and Control. It is essential to highlight that item 13 had primary loadings on a different dimension than Curiosity. In other cases, when cross-loadings were observed, primary loadings were located on the expected dimensions. Cronbach's alpha coefficients ranged from .88 to .93, and correlations between factors ranged from .36 to .63.

Focusing on the Cooperation scale (items 25-35), results showed that all items behaved as expected, and only smaller cross-loadings were observed. The six highest loading items were 28, 29, 30, 31, 33 and 34. Cronbach's alpha for this scale with only six items was .90. which was close to the alpha obtained when all 11 items were included (.93).

Study 2

In Study 2, we tested the structure of both the 35-item scale (CAAS + 11 Cooperation items) and the 30-item scale (CAAS + 6 selected items). This was done in the total sample 2 (*n* =

920) as well as in the adolescent and adult subsamples separately. Additionally, we analyzed the associations with external variables, including social support, Big Five personality, and preference for working in groups.

Table 2

CAAS+C Confirmatory Factor Analysis

	TS-35i	TS-30i	Adults-35i	Adults-30i	Adolescents-35i	Adolescents-30i
X^2	2311.033	1778.169	1790.751	1379.304	1034.182	771.495
df	550	395	550	395	550	395
p	.01	.01	.01	.01	.01	.01
CFI	.95	.96	.96	.96	.95	.96
TLI	.95	.95	.95	.96	.95	.95
RMSEA	.06	.06	.06	.06	.06	.06
Items				Loadings		
Concern						
Item 1	.70	.70	.71	.71	.69	.69
Item 2	.73	.73	.73	.73	.71	.71
Item 3	.82	.82	.84	.84	.76	.76
Item 4	.83	.83	.84	.84	.78	.78
Item 5	.83	.83	.84	.84	.80	.80
Item 6	.80	.80	.85	.84	.69	.69
Control						
Item 7	.74	.73	.76	.75	.69	.70
Item 8	.68	.68	.71	.72	.60	.60
Item 9	.78	.77	.80	.79	.74	.73
Item 10	.79	.79	.77	.77	.81	.81
Item 11	.78	.78	.80	.80	.76	.76
Item 12	.72	.72	.74	.74	.64	.64
Curiosity						
Item 13	.73	.73	.75	.75	.69	.69
Item 14	.83	.83	.84	.84	.81	.81
Item 15	.76	.76	.78	.78	.69	.68
Item 16	.81	.81	.81	.81	.80	.80
Item 17	.76	.76	.77	.77	.70	.70
Item 18	.78	.78	.78	.79	.75	.75
Confidence						
Item 19	.82	.83	.84	.84	.78	.78
Item 20	.79	.79	.82	.82	.72	.72
Item 21	.80	.80	.79	.79	.84	.84
Item 22	.85	.85	.85	.85	.83	.82
Item 23	.82	.81	.83	.83	.79	.79
Item 24	.81	.81	.84	.83	.71	.71
Cooperation						

Item 25	.62		.68		.49	
Item 26	.75		.78		.68	
Item 27	.76		.78		.74	
Item 28	.81	.79	.84	.83	.74	.69
Item 29	.82	.86	.82	.86	.84	.88
Item 30	.80	.81	.80	.80	.81	.81
Item 31	.69	.67	.72	.72	.62	.56
Item 32	.73		.75		.68	
Item 33	.57	.55	.60	.60	.47	.42
Item 34	.75	.75	.78	.79	.65	.63
Item 35	.33		.32		.41	

Note. TS = total sample; 35i = 35-item version; 30i = 30-item version. Total sample = 920; Adults = 627; Adolescents = 293.

The results of the Confirmatory Factor Analysis are shown in Table 2. It can be seen that in all conditions tested, across instrument versions and samples, fit values were good. Although the indices were quite similar in all configurations tested, the model with six items in the Cooperation dimension slightly outperformed the model with all 11 Cooperation items as indicated by more favorable CFI and TLI values. It is noted in Table 2 that the factorial loads were all greater than .30 in all conditions tested, highlighting the conditions with the six selected Cooperation items, which presented loads of .40 in the Cooperation dimension. Table 3 presents the correlations between the CAAS+C (30 items), the EPSUS-A and the BFI, based on data from participants who completed all instruments (n = 252).

Table 3

Correlations between CAAS+C, EPSUS-A and BFI factors

		CAAS+C					EPSUS-A				BFI				
	M(*SD*)	Conc	Cont	Curi	Conf	Coop	Af	SI	In	CP	Ext	Agre	Cons	Neur	Open
Concern	3.52(.80)	.88													
Control	3.73(.78)	.61***	.84												
Curiosity	3.48(.81)	.68***	.64***	.87											
Confidence	3.85(.75)	.60***	.65***	.71***	.88										
Cooperation	3.85(.72)	.44***	.48***	.51***	.58***	.84									
Affective	2.14(.51)	.15*	.17**	.19**	.26***	.38**	.94								
Social interations	1.64(.62)	.12	.13*	.12	.16*	.22**	.69***	.80							
Instrumental	1.71(.81)	.03	-.03	.07	.05	.14*	.52***	.41***	.93						
Coping problem	1.84(.59)	.09	.10	.15*	.19**	.23**	.81***	.60***	.63***	.88					
Extraversion	3.32(.71)	.22***	.37***	.26***	.32***	.28**	.32***	.29***	.06	.25**	.82				
Agreeableness	3.57(.54)	.23***	.17**	.20***	.26***	.46***	.38***	.27***	.15*	.28**	.25***	.71			
Conscientiouness	3.64(.60)	.35***	.28***	.28***	.45***	.21***	.14*	.14*	-.10	.04	.24***	.26***	.79		
Neuroticism	2.98(.72)	-.26***	-.29***	-.19***	-.21***	-.23***	-.24***	-.27***	-.13*	-.15*	-.17**	-.57***	-.28***	.82	
Openness	3.66(.54)	.23***	.31***	.40***	.34***	.22***	.12	.08	-.01	.08	.40***	.10	.12*	-.08	.75
Working in group	.57(.50)	-.01	.04	.04	.06	.20**	.18**	.17***	.17**	.15*	.17**	.34***	.01	-.23***	.09

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. $n = 252$ participants (adults). Diagonally are the precision of the factors measured by the alpha. Working alone was scored 0; working in a group was scored 1.

Correlations between adaptability and social support were generally weak, and Cooperation was the only adaptability dimension significantly correlated with all EPSUS-A subscales. The strongest correlation was observed for Cooperation and Affective social support. Regarding associations with Big Five traits, Cooperation generally showed the weakest correlations, with coefficients ranging from .21 (Conscientiouness) to .28 (Extraversion). On the other hand, Cooperation was correlated most strongly with Agreeableness. Finally, participants were also asked if they preferred to carry out their activities (labor or academic) alone or in group. Preference for working in groups correlated positively with Cooperation, all factors of social support, Extroversion and Agreeableness, and negatively with Neuroticism.

Discussion

Across the globe, professional careers are increasingly characterized by volatility and uncertainty. To facilitate the understanding of how people can cope with this changing career context, researchers and practitioners have introduced tools such as the career adaptabilities scale (CAAS) and its extended version, the CAAS+C which includes an additional Cooperation scale. The objective of this paper was to document the development and validation of the CAAS+C Brazilian form. In general, our results showed that the CAAS+C Brazilian form has an internal structure closely resembling what can be expected based on the underlying theory, although some additional findings also emerged. One noteworthy finding from Study 1 relates to the presence of cross-loadings, in particular for items that belong to the Curiosity and Confidence dimensions. In this regard, our findings somewhat diverge from previous research using this item set in a Brazilian context (Audibert & Teixeira, 2015) without comparable structural problems. More importantly, all items belonging to the newly developed Cooperation scale, which was the main focus of the present study, behaved as expected in the exploratory analysis.

Based on the results of the exploratory factor analysis in Study 1, we identified the six items with the highest factor loading to match the number of items in the Cooperation dimension Cooperation to the other dimensions of the CAAS. This approach was similar to previous research by Einarsdóttir et al. (2015) and Nye et al. (2017) which developed adaptations of the CAAS+C in different cultural contexts. Two Cooperation items are shared across the three adapted versions, namely item 30 (‘Compromising with other people’) and item 34 (‘Sharing with others’). The four other items of the Brazilian translation were as follows: ‘Cooperating with others in group projects’ and ‘Going along with the group’ (items 28 and 33), also present in the version of Einarsdóttir et al. (2015), and ‘Playing my part on a team’ and ‘Learning to be a

good listener' (items 29 and 31), also included in the version of Nye et al. (2017). On the one hand, these findings may be indicative of a common core of the Cooperation dimension across cultural contexts, pointing to the importance of committing to and sharing with other people. On the other hand, there also appear to be subtle cross-cultural differences in the exact meaning of the Cooperation dimension that can be taken into account when assessing this construct.

One can further note that the selection of six Cooperation items (out of originally eleven items) did not lead to a significant loss of scale reliability. The result of this item selection was corroborated in Study 2, where it was shown that the six-item Cooperation scale demonstrated the most optimal fit indexes in the confirmatory factor analysis, both in the total sample and in the adolescent and adult subsamples.

Study 2 sought to provide further validity evidence for the CAAS+C scale by examining relations with other relevant variables. First, as expected (hypothesis 2), Cooperation was the only adaptability dimension that correlated significantly with all social support factors, and the highest correlations with these social support factors were also found for this adaptability dimension in particular. These results are in line with earlier findings (Hirschi, 2009; Kenny & Bledsoe, 2005; Wang & Fu, 2015) in which social support has also been positively correlated with the dimensions of career adaptability. Zooming in on these associations, the correlation between Cooperation and Affective Support (r = .38) can be highlighted, showing that cooperation, as an adaptation strategy, is related to the perception of emotional closeness, more than other forms of support (Cardoso & Baptista, 2014). Affective Support too was most strongly correlated with the other career adaptability dimensions. In a longitudinal study, Fiori, Bollmann, and Rossier (2015) found that participants with higher scores for career adaptability experienced

more positive affections than those with lower scores. Thus, high levels of career adaptability work as a protection against the decline of these affections.

Our expectations about the correlations with the Big Five personality factors (Hypothesis 3) were confirmed. As expected, all adaptability dimensions correlated significantly with Conscientiousness, with weak and moderate magnitudes, As pointed out in previous studies (Bardagi & Albanes, 2015; Rudolph et al., 2017; Teixeira et al., 2012). In particular, the Cooperation dimension showed weak correlations with personality traits, except with Agreeableness, that the correlation was positive and moderate, as expected (Hypothesis 3b).

It was also observed that the Coping with problems dimension of social support correlated with Curiosity and Confidence, which in turn, were the dimensions of career adaptability that most demonstrated most strongly correlated with Openness and Conscientiousness. The Coping with problems dimension is related to the perception of listening and empathy behaviors offered by other people, which help in conflict resolution and decision making (Cardoso & Baptista, 2014). Career adaptability plays a prominent role in career exploration behaviors, highlighting the Curiosity dimension. Li et al. (2015) found that the factors Openness and Conscientiousness are strong predictors of career exploration. Thus, individuals who tend to be more curious, creative, receptive to change, disciplined, and self-confident have a high level of propensity to perform career exploration behaviors and decision making.

Finally, confirming our expectations (hypothesis 4), our results showed that higher scores on Cooperation, social support, Extraversion, and Agreeableness are related to the preference for group activities. We also saw that Neuroticism was negatively correlated with the preference for working in groups. Although not expected a priori, the latter result is coherent because greater

emotional instability (characteristic of Neuroticism) impairs interpersonal relationships (McNulty, 2008). For this reason, people with a greater trait of Neuroticism prefer activities that can work alone. It is worth noting that Cooperation was the only dimension of CAAS + C that significantly correlated with working in groups.Thus, the results obtained in this study suggest that Cooperation, as an adaptive resource, functions as an interpersonal strategy in work environments that are likely to encourage sharing of information and commitment to team goals and objectives (Savickas & Porfeli, 2015).

In summary, the present study showed that the newly developed CAAS+C tailored to the Brazilian context demonstrates adequate psychometric properties for use in career interventions. The CAAS+C is a necessary extension of the CAAS given that, in unstable career contexts, it is important to evaluate not only intrapersonal resources but also interpersonal aspects of adaptability, such as cooperative strategies. Using the CAAS+C in this context will facilitate interventions that aim to promote the development of thee career competencies which are essential for career self-management.

Ethical Compliance Section

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Compliance with Ethical Standards: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflicts of Interest: The authors declare that they have no conflict of interest.

Informed Consent: Informed consent was obtained from all individual adult participants included in the study; assent was obtained from children.

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Appendix

Career Adapt-Abilites Scale + Cooperation Scale - CAAS+C Brazilian Form

Diferentes pessoas usam diferentes pontos fortes para construir suas carreiras. Ninguém é bom em tudo, cada um de nós enfatiza alguns pontos mais do que outros. Por favor, **avalie o quanto você desenvolveu cada uma das seguintes habilidades** usando a escala abaixo. Por favor, marque a resposta de acordo com o seu momento atual, isto é, de acordo com o modo como você vê, hoje, o quanto desenvolveu cada uma das habilidades abaixo:

Desenvolvi pouco ou nada	Desenvolvi mais ou menos	Desenvolvi bem	Desenvolvi muito bem	Desenvolvi extremamente bem
1	2	3	4	5

1. Pensar sobre como será o meu futuro	1	2	3	4	5
2. Perceber que meu futuro depende das escolhas de hoje	1	2	3	4	5
3. Preparar-me para o futuro	1	2	3	4	5
4. Estar atento(a) às escolhas educacionais e profissionais que eu devo fazer	1	2	3	4	5
5. Planejar como atingir meus objetivos	1	2	3	4	5
6. Pensar com cuidado sobre minha carreira	1	2	3	4	5
7. Manter-me entusiasmado(a) e otimista	1	2	3	4	5
8. Tomar decisões por conta própria	1	2	3	4	5
9. Assumir responsabilidade pelos meus atos	1	2	3	4	5
10. Manter-me fiel às minhas convicções	1	2	3	4	5
11. Acreditar na minha capacidade de dirigir a própria vida	1	2	3	4	5
12. Fazer o que eu considero certo para mim	1	2	3	4	5
13. Explorar o ambiente ao meu redor	1	2	3	4	5
14. Procurar por oportunidades de crescimento pessoal	1	2	3	4	5
15. Explorar as opções antes de fazer uma escolha	1	2	3	4	5
16. Observar diferentes maneiras de fazer as coisas	1	2	3	4	5
17. Investigar profundamente as questões/dúvidas que eu tenho	1	2	3	4	5
18. Ser curioso(a) com relação a novas oportunidades	1	2	3	4	5
19. Realizar as tarefas de forma eficiente	1	2	3	4	5
20. Ser cuidadoso(a) para fazer as coisas bem feitas	1	2	3	4	5
21. Aprender novas habilidades	1	2	3	4	5
22. Esforçar-me para fazer o melhor possível dentro das minhas habilidades	1	2	3	4	5
23. Superar obstáculos	1	2	3	4	5
24. Solucionar problemas	1	2	3	4	5
25. Ser menos egoísta	1	2	3	4	5
26. Agir amigavelmente	1	2	3	4	5
27. Estabelecer relações com todos os tipos de pessoas	1	2	3	4	5
28. Cooperar com os outros em projetos grupais*	1	2	3	4	5
29. Fazer minha parte em uma equipe*	1	2	3	4	5
30. Comprometer-me com outras pessoas*	1	2	3	4	5
31. Aprender a ser um bom ouvinte*	1	2	3	4	5

32. Contribuir para a minha comunidade	1	2	3	4	5
33. Abrir mão de uma opinião e aceitar o que o grupo decidir*	1	2	3	4	5
34. Compartilhar com os outros*	1	2	3	4	5
35. Esconder meus verdadeiros sentimentos pelo bem grupal	1	2	3	4	5

Note. The itens from 1 to 24 was retrieved from Audibert and Teixeira, 2015.