Career Resources Questionnaire (CRQ)

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Purpose

Vocational and organizational career research has a long-standing interest in identifying factors that allow people to achieve career success (e.g., Schein, 1978). The great interest in this topic has resulted in a wealth of theoretical models, measures, and empirical studies that aim to identify factors that allow people to have successful careers (for an overview see Ng, Eby, Sorensen, & Feldman, 2005; Ng & Feldmann, 2014a; 2014b; Spurk, Hirschi, & Dries, 2018). Given this state of affairs, Hirschi, Nagy, Baumeler, Johnston & Spurk (2018) concluded that there is value in developing an instrument that provides a concise and integrative measurement of key predictors of career success.

Hirschi et al.(2018a; 2018b) developed the Career Resources Questionnaire (CRQ) as a scientifically based self-assessment tool to evaluate critical resources that promote career success. The resources can be divided into four broad domains: (1) Knowledge and Skills; (2) Motivation; (3) Environment; and (4) Activities. These four broad domains consist of 13 different components that practitioners and researchers consider as important facilitators of subjective (i.e. job satisfaction, career satisfaction) and objective (i.e. salary, promotions) career success in international research. It is important to note that individuals can actively modify and develop these resources. The CRQ was developed to assess critical resources of employability and to promote personal career success of employees and students of all age groups and work fields. The results of the CRQ provide a personal career resources profile.

Career specialists can use the questionnaire in career counseling, HR development, and in consulting and coaching services to assess key resources for career success among clients and employees. This allows for a nuanced and informative assessment of the career-related strengths and weaknesses of client and employees. Furthermore, based on the CRQ profile, evaluating the effectiveness of career counselling, coaching, and HR development processes is possible by comparing the client's or employee's career resources before and after an intervention.

In addition to use by practitioners, researchers can use the CRQ as a brief, reliable, and validated assessment of career resources for examining the predictors, outcomes, or development of career resources over time. Researchers can use the questionnaire in its entirety to assess a comprehensive array of career resources. Alternatively, researchers might assess for single resources separately for more specific research questions.

Structure of the instrument

The CRQ consists of 41 items for employees and 38 items for students, with three to four items per scale (the student version does not contain three organizational career opportunities items because they are not relevant for this population). All items have a response format of a 5-point Likert scale ranging from 1 (*not true at all*) to 5 (*completely true*).

The questionnaire assesses four overarching dimensions: (1) knowledge and skills resources; (2) motivational resources; (3) environmental resources; and (4) activities of career self-management. These four dimensions encompass 13 specific subscales that each measure a specific resource or activity (for a definition of each scale and sample items see Table 1).

Table 1. *Overview of the four key career resource dimensions and the 13 specific career resources assessed in the Career Resource Questionnaire*

Career resource	Definition	Example Item
Knowledge and Skills		
Occupational expertise	The degree of possessed occupation specific knowledge and competencies.	*Others see me as an expert in my occupation.*
Job market knowledge	The degree of possessed general knowledge about the job market and employment trends.	*I have a good knowledge of the job market.*
Soft skills	The degree of possessed skills and competencies that are relevant for a broad range of occupations.	*I have many skills that I could use in a range of different occupations.*
Motivation		
Involvement	The degree of affective attachment to the working role.	*My work is a central part of my identity.*
Confidence	The believe that one is capable of successfully developing one's career.	*I am capable of successfully managing my career.*
Clarity	The clarity and self-determination of career goals.	*I have clear career goals.*
Environment		
Career opportunities	The extent to which personally interesting career advancement opportunities exist within one's current organization.	*My organization offers interesting career opportunities for me.*
Organizational career support	The extent to which one's current organization provides support for one's career development.	*My current employer supports my intended career.*
Job challenge	The extent to which one's current job allows one to utilize and develop personally valued skills.	*My work helps me to increase my skills.*

Activities		
Networking	The extent to which social contacts are built, maintained, and utilized to promote one's career development.	*I always try to be well connected in my professional field.*
Career information gathering	The extent to which information about career options is collected.	*I regularly collect information about career opportunities.*
Continuous learning	The extent to which work relevant knowledge and skills are enlarged and updated.	*I continuously develop my work-related abilities.*

Notes: The items will be answered on a 5-point scale: not true at all (1), slightly not true (2), moderately true (3), mostly true (4), completely true

(5). All items are poled in the same direction. The individual test value results from the mean value of the items assigned to each scale.

Administration

The CRQ is available in English and German for both students and employees. All versions are validated in different samples. The questionnaire is free and available on www.cresogo.com and takes about 10 minutes to complete. After completing the questionnaire, the results display in a basic report that shows the test taker's individual career resources profile. Also, there is an option to purchase a comprehensive personal report, which gives an additional, more detailed profile of career resources based on norm values and compared to other people who took the CRQ. Moreover, this comprehensive report provides additional background information on each resource and presents recommendations about how to use and develop every resource optimally.

Technical Considerations

Instrument development processes and procedures

In broad terms, the development of the CRQ involved five steps: (1) literature review, (2) item development, (3) item selection, (4) confirmation of the hypothesized factor structure, and (5) establishment of convergent/criterion validity. First, by integrating insights from diverse existing models and adapting the career resources model by Hirschi (2012), the developers identified four key areas of predictors of career success they wanted to assess in the measure: (1) human capital resources, (2) environmental resources, (3) motivational resources, and (4) career management behaviors. Based on existing meta-analyses (Ng et. al, 2005; Ng & Feldman, 2014a, 2014b) and theoretical models on objective and subjective career success, the developers derived a list of 13 critical constructs within four broad dimensions (see Table 1).

Second, for item development, the developers used a recommended multi-step procedure to ensure high item content validity (Hinkin, 1998). For this purpose, they identified existing scales that assessed the same or very closely related constructs as the 13 identified factors in the previous step. Then, they used a deductive item generation strategy (Hinkin, 1998) by either creating new items or adapting items from existing scales. This process resulted in an initial set of 208 items. In addition to a questionnaire for use with working adults, the aim was to create a version for university students. Hence, the developers created a student version of each item in parallel, by adapting the items, if necessary (e.g. "my organization" was changed to "my university/college").

Third, the developers tested the items for content validity. The involved authors evaluated all preliminary items and deleted items that resulted in low agreement for representing the construct. In addition, five post-graduate students received a random set of items with the task of categorizing them into the theoretically presumed higher-order dimensions. Developers deleted or rephrased those items that they or the students did not assign correctly, which resulted in a set of 133 items (between 7 and 12 per factor).

Fourth, to evaluate empirically which items described each factor best and to select a parsimonious and efficient number of final items for each factor, developers conducted a single-factor confirmatory factor analyses (CFA) with the employee and the student sample for each of the 13 factors. Developers identified six items per scale that showed the highest average factor loadings across the two samples. Three of the developers reviewed these items independently for content overlap and, together, with a fourth author, the team decided which items to keep for the final version. This resulted in 41 items for the employee group and 38 items for the student group, with 3 to 4 items per scale, which corresponds with best practice recommendations in scale development.

Finally, to confirm dimensionality and structure of the selected items, the developers conducted a confirmatory factor analyses (CFA) in a new employee and student sample with maximum likelihood estimation with robust standard errors. These results supported the hypothesized structure and favored the 13 factor (respectively 12 factor-model for students) over other models. In addition, the hierarchical 4-factor model showed acceptable fit. This suggested that, in addition to 13 or 12, respectively, individual factors, practitioners and researchers can use the CRQ to represent four broader higher-order dimensions of different career resources (see Table 1).

Reliability

Hirschi et al. (2018a; 2018b) tested the reliability of the CRQ, separately for the student and the employee versions, with the coefficient of internal consistency (Cronbach's alpha). Four studies, among different samples, showed consistently high values of reliability, ranging from $\alpha = .82$ to $.92$ for the employee version and from $\alpha = .73$ to $.91$ for the student version.

Validity

Content validity. All generated items underwent an internal content validity review by the authors of the scale. In addition, several post-graduate students evaluated item content independently.

Construct validity. Several researchers have been able to confirm the dimensionality and structure of the selected items of the CRQ through a series of CFAs in employee and student samples (Hirschi et al., 2018a, 2018b). Confirming the construct validity, standardized factor loadings ranged between .67 and .93 in employee samples, and between .59 and .91 in student samples.

Concurrent/predictive validity. To test criterion validity, all CRQ factors were correlated with different career success variables. All CRQ factors correlated significantly and positively with *career satisfaction*, *job satisfaction*, *salary*, and *promotions*. Generally, *salary* showed lower correlations with the CRQ factors compared to the other success indicators.

Convergent/divergent validity. To assess convergent validity, the CRQ factors were correlated with existing scales measuring closely related constructs. All correlations were highly significant and moderate to high in size ranging from $r = .27$ to $r = .83$. As expected, some correlations (e.g., *job market knowledge*, *career opportunities*, *networking*) were high, indicating that some CRQ factors assess constructs that are close to those assessed in existing scales. Other correlations (e.g., *skill variety*, *job crafting*) were moderate to high, confirming that some CRQ factors assess related constructs to existing scales. Overall, developers were able to confirm the convergent validity of the newly developed scales .

Norms

The reference groups for employees are displayed in Table 2 and for students in Table 3, and separately for the English and the German group. Statistical analyses revealed that manifestations of the different career resources differ significantly between employees in different age groups. For this purpose, the values in the reports are compared to a reference group in the same age group. Statistical analyses among students showed that manifestations of the different career resources differ significantly between women and men. Therefore, the values are compared to a reference group with the same gender. We used the values stanine scores and percentiles ranks to provide comparisons in the provided report.

Table 2: *Reference group for employees*

	Number	Age	Level of education						
			Middle school	High school	Vocational technical institution	Junior or community collage	Undergraduate program	Master degree	Doctoral degree
English	873 64% female	19-65 years ($M = 41$; $SD = 11$)	-	13%	7%	14%	38%	24%	4%
German	748 40% female	19-65 years ($M = 42$; $SD = 11$)	14%	15%	29%	-	5%	40%	1%

Table 3: *Reference group for students*

	Number	Age	Type of institution				Level of education		
			Four-year collage	University of applied science	University	No information	Bachelor degree	Master degree	No information
English	691 77% female	16-30 years ($M = 23$; $SD = 4$)	49%	-	49%	2%	75%	25%	-
German	724 69% female	17-30 years ($M = 23$; $SD = 3$)	-	31%	69%	-	68%	30%	2%

Use/Interpretation/Evaluation

General utility

The CRQ is suitable as a basis to assess the following questions:

- What supports does a client or an employee need to deal with professional challenges?

- On what strengths can a client or an employee rely to make progress in his or her own career?

- In which areas does the client or employee have weaknesses that could hinder occupational development?

Besides using the CRQ in research, practitioners might use the questionnaire by professionals for different purposes. The CRQ allows practitioners to obtain a better understanding of the specific counselling and development needs of clients or employees, as well as to plan career counselling, coaching sessions, and HR development process by focusing on the career resources most useful for clients/employees. In addition, practitioners might use the CRQ to evaluate the effectiveness of career development interventions (e.g., counselling sessions, workshops, development programs) by comparing the career resources of clients or employees before and after an intervention. Hence, the CRQ will be a useful tool for practitioners interested in career development, in general, and predictors of career success more specifically.

Presentation and interpretation

The CRQ results provide the personal career resources profile of the test taker in four broad domains (knowledge and skills, motivation, environment, and activities) as well as for each of the 13 or 12, respectively, different subfactors, specifically. The report presents the values both numerically and graphically. A higher score on a factor means that the person has well developed resources in this area. In the basic report, practitioners can interpret the results regarding where a person has more or less resources in comparison across the different resources.

There are norms in the comprehensive personal report practitioners can use to compare the level of the different career resources to other people across raw values, standard values (stanine scores), and the percentile ranks. Practitioners can interpret the results of this comprehensive report as to where a person has more or less resources in comparison to other people. Moreover, the report includes recommendations on how to use each resource optimally and how to increase a resource.

Researchers and practitioners can download further information and additional materials (career resources workbook, interview guide for professionals, career professional's guide, scientific report) from the website (www.cresogo.com).

Evaluation

The CRQ provides a brief, comprehensive, reliable, and validated assessment of the critical factors that help people to develop their careers successfully. The CRQ integrates existing international empirical and theoretical work on objective and subjective career success. The CRQ is available for use with both employees and students in two languages (English and German). The automatic generated report, with recommendations for interpretation, provides a comprehensible way to interpret the scoring.

Cultural Considerations and Implications

For cultural considerations, developers confirmed the measurement invariance between the English and the German samples of the CRQ using the step-up approach suggested by Chen (2007). The results for both the English the German samples (employees and students) showed measurement equivalence for all measured factors. Hence, the measurements are comparable between English and German samples.

Career Counselling Practice Considerations

Career professionals can use the CRQ to enrich their practice and career interventions in several ways. First, a brief screening of the available resources of a client with the CRQ could serve as a basis for a preliminary decision about what type and intensity of career intervention is most appropriate for a client. Second, the CRQ results give specific insight to career processionals by providing results about which personal and environmental resources, as well as which career activities, need to be strengthened in a career intervention. Third, if career practitioners administer the CRQ before and after a career intervention, they can determine whether meaningful change has occurred in personal and environmental career resources, as well as in career behaviors. A summary of this process career professionals can follow to integrate the CRQ into their work is: (1) establish the needs and career concerns of the client in a brief interview; (2) screen the available career resources of the client with the CRQ; (3) determine the type of intervention that is most useful and efficient for the client based on the CRQ profile; (4) determine the key areas of intervention that are most useful for the client based on the CRQ profile; (5) help the client activate and utilize existing resources and to improve resources that

are currently underdeveloped; and (6) evaluate the changes in career resources with a new CRQ assessment.

Summary

The Career Resources Questionnaire (CRQ) is a brief, reliable, and empirically validated measure practitioners can use to aid their clients in identifying critical resources of employability and in promoting personal career success. The CRQ is suitable for both students and employees of all ages and work fields and provides a personal career resources profile. Those engaged in career counseling, Human Resources development, and consulting or coaching, or research will find the CRQ useful to their work.

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