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Chapter 3

Antecedents and Outcomes of Hungarian Nurses' Career Adaptability[1]

Keywords: Career Adaptability, Employability, Job performance, Nurses

1 This chapter is based on: Pajic, S., Keszler, Á., Kismihók, G., Mol, S. T., & Den Hartog, D. N. (2018). Antecedents and outcomes of Hungarian nurses' career adaptability. International Journal of Manpower, 39(8), 1096-1114.

Do the best you can until you know better.
And when you know better, do better.

Maya Angelou

Abstract

With the ageing global population, the demand for nursing jobs and the requirements for complex care provision are increasing. In consequence, nursing professionals need to be ready to adapt, obtain variety of skills, and engage in career self-management. The current study investigates individual, micro-level, resources and behaviors that can facilitate matching processes between nursing professionals and their jobs. A survey-based study was conducted among 314 part-time and full-time nursing professionals in Hungary. Consistent with the career construction theory, this study offers evidence on career adaptability as a self-regulatory resource that might stimulate nurses' adaptation outcomes. Specifically, it demonstrates positive relationships between adaptive readiness (proactive personality and conscientiousness), career adaptability, adapting behaviors (career planning and proactive skill development) and adaptation outcomes (employability and in-role performance). The cross-sectional design of the current study limits causal inference. Relatively small sample of full-time professionals for whom supervisory-ratings were obtained yields the need of further replication. Stimulating development of nurses' career adaptability, career planning, and proactive skill development can contribute to sustainable career management. It can facilitate the alignment of nurses to performance requirements of their current jobs, preventing individual person-job mismatch. Zooming into the context of nursing professionals in Hungary, the study elucidates the understudied link between adaptivity and adapting responses and answers the call for more research that employs other-ratings of adaptation outcomes. It demonstrates the value of career adaptability resources for nurses' employability and in-role performance.

To employability and beyond

Contemporary changes such as a globalization, fluctuating economic situations and technological advances have all impacted the labor market in recent decades. In the European Union, the percentage of temporary contracts has increased substantially with more than 30 percent of workers aged between 15 and 29 years currently employed on a temporary contract (Eurostat, 2015). For individual workers, this means that the notion of a linear, stable and predictable career can no longer be taken for granted. While developing a career within a single organization used to be the norm, this has now shifted toward employees holding different functions at multiple organizations (Fugate et al., 2004). Also, whereas performing duties within one's job description and complying with organizational norms might in the past have been sufficient for being evaluated as a high performing employee, in today's work environment, it is likely not enough. Frequently subjected to reforms, the healthcare sector is no exception to such labor market dynamics. Cross-border mobility of nurses, driven by individuals' search for better employment opportunities and work conditions, is more and more frequent (e.g. Betlehem et al., 2017; Zander et al., 2013; Heinen et al., 2013). Also, with an ageing global population, the demand for healthcare professionals, and particularly nurses, is increasingly high. Growing numbers of elderly people with multiple chronic conditions, create a demand for the provision of complex medical care and the use of innovative care delivery methods. Thus, the content of nursing jobs is also changing. Consequently, nurses need to be responsive to change and ready to obtain a variety of skills or to adopt new ways of working (Wismar et al., 2011).

The current study focuses on nurses in Hungary. The Hungarian nursing context is generally comparable to other European states, but it also has some peculiarities. With 286 nurses per 100,000 inhabitants, Hungary, like many countries in the European Union, is facing the common challenge of a shortage of qualified nurses. Despite an overall increase of nursing graduates from 2009 onwards, due to migration of well-trained nurses to Western-European countries (Ujvarine et al., 2011), in Hungary not enough young nurses remain to replace those who leave or retire. In other words, to obtain employment and sustain their employability, Hungarian nurses have to be adaptable and engage in self-management.

To explain how people adapt to challenges and changes within career domain, career construction theory (CCT, Savickas, 2013; 2005) posits the career construction model of adaptation (CCMA, Savickas, 2013; Savickas & Porfeli, 2012). This model suggests that relatively stable personality traits reflecting the willingness to adapt

(i.e. adaptive readiness) affect individual resources for coping with occupational tasks and transitions (i.e. career adapt-ability resources). This in turn positively affects behaviors and beliefs used to address changing conditions (i.e. adaptive responses) and triggers positive outcomes indicated by success, satisfaction, and development (i.e. adaptation outcomes). CCMA (Savickas, 2013) highlights career adaptability as a key self-regulatory competency needed to handle change and novelty in occupational roles, tasks, and demands. Adaptable workers take responsibility for developing their careers and believe in their ability to succeed in solving career-related problems (Rudolph et al., 2017).

Positive relationships between career adaptability and a range of outcomes within the career and job domains have been established, such as promotability (Chan, Mai, Kuok, & Kong, 2016), career satisfaction (e.g. McKenna, Zacher, Ardabili, & Mohebbi, 2016) and work engagement (Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012). By enacting specific adapting behaviors, such as career exploration (Li et al., 2015), career planning (Hirschi, Herrmann, & Keller, 2015) or proactive skill development (Taber & Blankemeyer, 2015), workers with higher levels of career adaptability tend to reach positive career outcomes and person-environment fit. Therefore, in the current study, we propose that career adaptability might also form a valuable resource for nurses, whose high performance and sustainable employment are crucial to delivering high quality patient care.

Although career adaptability is not a novel concept, relatively recently researchers have converged around one parsimonious operationalization: the career adaptability scale (CAAS, Savickas & Porfeli, 2012). Over the past four years the CAAS has been 1097 Hungarian nurses' career adaptability translated, validated, and applied in more than ten different languages, including Chinese (Hou, Leung, Li, & Xu, 2012), Dutch (van Vianen, Klehe, Koen, & Dries, 2012), Italian (Soresi, Nota, & Ferrari, 2012) and Persian (McKenna et al., 2016). Moreover, most aspects of the broader theoretical framework provided by the CCMA (Savickas, 2013; Savickas & Porfeli, 2012) have received empirical support. Research on career adaptability across different cultural and occupational contexts is important to examine the generalizability of the construct and its relationships with relevant outcomes.

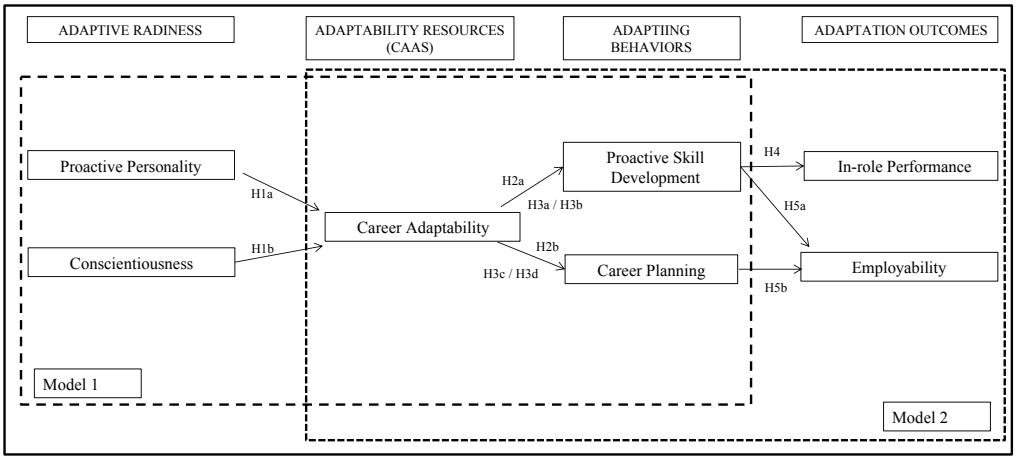
The purpose of the current research is threefold. First, this study sought to translate to Hungarian and assess the reliability, factor structure and correlates of the CAAS (Savickas & Porfeli, 2012). This further supports its dimensionality, and therewith

applicability, across different contexts. Second, adopting the CCMA (Savickas & Porfeli, 2012), this study examined the broader nomological network of career adaptability by testing its relationship to adaptive readiness as an antecedent, operationalized here as proactive personality and conscientiousness, and adapting behavior as an outcome, operationalized here in terms of proactive skill development and career planning. Extending research on the CCMA (Savickas & Porfeli, 2012), the study aims to provide implications that go beyond the nursing and Hungarian context, by further empirically elucidating the infrequently studied link between adaptivity and adapting behaviors (Rudolph et al., 2017).

Third, as an additional validation of the CCMA (Savickas, 2013; Savickas & Porfeli, 2012), this study reports on the relationship of career adaptability with outcomes of individual adaptation, namely in-role performance and employability. Whereas in-role performance encompasses behavior that contributes to organizational goals (Borman & Motowidlo, 1993), employability entails the "continuous fulfilling, acquiring, or creating of work through the optimal use of competences" (Van der Heijde & Van der Heijden, 2006, p. 453). Hence, the current study integrates the outcomes relevant in both career and job domains, answering the call for more multisource research on adaptation outcomes (Rudolph et al., 2017; Ohme & Zacher, 2015). In this regard, this study is one of the first studies on career adaptability that obtains measures from multiple sources (see Sibunruang, Garcia, & Tolentino, 2016 for a notable exception).

In sum, the current paper sets out to contribute to the career adaptability literature by hypothesizing and empirically testing the extent to which career adaptability can explain the relationships between more dispositional trait-based antecedents (proactive personality and conscientiousness), adapting behaviors (proactive skill development and career planning) and work-related outcomes (in-role performance and employability). Figure 1 depicts the hypothesized conceptual model.

Figure 3.1. Overarching conceptual model



Theoretical Background and Hypothesis Development

Career Adaptability, Adaptive Readiness, and Adapting Behaviors

Adaptive readiness encompasses a set of stable dispositions that reflect an individual's flexibility and/or willingness to adapt. In the current study, adaptive readiness is operationalized through two dispositional traits, proactive personality and conscientiousness, both being well-established antecedents of career adaptability (see, e.g. Tolentino et al., 2014; Uy, Chan, Sam, Ho, & Chernyshenko, 2015; Rossier et al., 2012). Proactive personality encompasses an individual disposition to initiate action that is aimed at changing and influencing one's environment (Bateman & Crant, 1993). Conscientiousness reflects being responsible, systematic, and hardworking (Costa & McCrae, 1992). Proactive workers are likely to successfully plan and influence changes in their working environment (Sonnentag, 2017; Bateman & Crant, 1993), whereas conscientious workers are likely to prepare themselves for future tasks, persist, and take responsibility for their personal and professional development.

Moreover, proactive personality and conscientiousness have been identified as the key personality determinants of individual's adapting behavior. Namely, within the broader proactivity literature, proactive personality has been related to planning behaviors (career goal setting and formulating specific career plans) and overt actions (networking, seeking a mentor, and skill development) (Sonnentag, 2017). Also, conscientiousness has been found to contribute to career planning (Rogers,

Creed, & Glendon, 2008) and career exploration (Teixeira, Bardagi, Lassance, de Oliveira Magalhães, & Duarte, 2012). In line with CCMA (Savickas, 2013; Savickas & Porfeli, 2012) and the empirical findings in a student sample of Hirschi et al. (2015), we suggest here that career adaptability plays a vital explanatory role in how personality relates to adapting behavior. Specifically, we investigate the relationship between adaptive readiness, career adaptability and adapting in a sample of part-time interns and full-time nursing professionals in Hungary, providing a further test of CCMA in the work context. Moreover, to answer the call (Hirschi & Valero, 2015) to examine the relationship between career adaptability and additional indicators of adapting, other than those already investigated, this study focuses on a somewhat different set of adaptive strategies. Namely, we focus on career planning and proactive skill development, as two forms of adapting behaviors related to success in both job and career domains (Claes & Ruiz-Quintanilla, 1998), which might be particularly relevant to currently employed nurses. More proactive and conscientious individuals are thus expected to be more responsive in developing their career adaptability, which in turn results in higher levels of career planning and proactive skill development:

Hypothesis 1. Adaptive readiness operationalized in terms of proactive personality (Hypothesis 1a) and conscientiousness (Hypothesis 1b), is positively related to career adaptability.

Hypothesis 2. Career adaptability is positively related to adapting behaviors, operationalized in terms of proactive skill development (Hypothesis 2a) and career planning (Hypothesis 2b).

Hypothesis 3. Adaptive readiness (proactive personality and conscientiousness), is positively related to adapting behaviors (proactive skill development (Hypothesis 3a and Hypothesis 3b, respectively and career planning (Hypothesis 3c and Hypothesis 3d, respectively), indirectly through career adaptability.

Career Adaptability, Adapting Behaviors, and Adaptation

Career adaptability has been linked to a number of positive career and job related outcomes. However, less is known about the underlying mechanism, and the extent to which engagement in adapting behaviors, on the part of individuals with strong career adaptability, translates into better adaptation outcomes. To understand how these relationships unfold, the current study thus focuses on two

adapting behaviors, namely 1099 Hungarian nurses' career adaptability proactive skill development and career planning, and considers their relationship with inrole performance and employability. In the dynamic labor market, workers are not only expected to be productive in their present role, but also to be employable beyond their current job or organization. As such, proactive skill development and career planning are likely to form complementary and positively interrelated indicators of long term adaptation, which need to be evaluated in tandem (De Cuyper, Sulea, Philippaers, Fischmann, Iliescu, & De Witte, 2014). By continuously updating their skills and proactively planning their careers, workers with higher career adaptability are expected to perform their current work productively, while simultaneously staying sustainably employable.

Existing research on career adaptability relates this construct to different career success outcomes, but how individual career adapt-ability resources relate to performing behaviors and achieving outcomes relevant to organizational goals has not yet received sufficient research attention. One noteworthy development in this direction is a policy-capturing study that found that career adaptability was positively related to overall job performance in fictitious scenarios (Ohme & Zacher, 2015). Validation of these findings in actual work settings remains an important hiatus (Ohme & Zacher, 2015), and here we address this relationship between career adaptability and individuals' job performance. To sustain effectiveness in their jobs under fluctuating conditions, individuals must be able to quickly adapt to new task and job demands (e.g. Kozlowski, Watola, Jensen, Kim, & Botero, 2009). Importantly, workers with higher career adapt-ability resources will engage more actively and strategically in activities that build their human capital (Taber & Blankemeyer, 2015). The related increases in skills and abilities are expected to translate into higher job performance:

Hypothesis 4. Career adaptability is positively related to supervisor rated in-role performance, indirectly through proactive skill development.

Additionally, to incorporate a longer-term perspective on the individual career, adaptation in terms of in-role performance is complemented with employability, defined as "the continuous fulfilling, acquiring or creating of work through the optimal use of competences" (Van der Heijde & Van der Heijden, 2006, p. 453). The current study focuses on employability as a competence in anticipation and optimization, which refers to the supervisor rated capacity to prepare for, and adapt to, future changes in a personal and creative manner, striving for the best possible results (Van

der Heijde & Van der Heijden, 2006).

Building upon research that linked career adaptability to employability skills among graduate students (De Guzman & Choi, 2013) and the findings that formal (Forrier & Sels, 2003) and informal learning (Van der Heijden et al., 2009) positively relate to workers' employability, the current study aims to extend our understanding of the adapting behaviors through which self-regulatory competences help sustain employability. Specifically, we argue that individuals' career adaptability, as a set of self-regulatory resources, will positively relate to workers' employability through professional skills development. Also, since workers who are in possession of higher career adapt-ability resources are more likely to engage in career planning strategies, these workers are expected to successfully navigate their way through times of transition, thus reinforcing their employability (e.g. Zikic & Klehe, 2006). Therefore, in line with the notion that existing resources aid in generating more resources (Hobfoll, 2002), we expect that more adaptable individuals will strategically develop needed knowledge and skills. Furthermore, creating specific plans for navigating current and future occupational tasks will enhance their employability:

Hypothesis 5: Career adaptability is positively related to supervisor rated employability through proactive skill development (Hypothesis 5a) and career planning (Hypothesis 5b).

Method

Participants

Participants were 114 Hungarian full-time nurses and their supervisors and 200 part-time nurses from a public, state funded, medical center in Hungary. First, with support from the hospital's management team, full-time nurses were selected using stratified random sampling, assuring that all hospital departments were adequately represented. Additionally, immediate supervisors of the nurses (head nurses) provided the ratings of full-time nurses' in-role performance and employability. Second, with the help of a nursing school, convenience sampling was used to collect additional data from part-time nurses in the final year of obtaining their degree and who at the same time were also working in the same hospital. We recruited part-time nurses during their classes. Participation in the study was voluntary and rewarded with 5-euro incentive for filling in the survey. The study was approved by Ethics Committee of the faculty that employs the researchers and data were used for research purposes only.

Of the participants 92% were female. The mean age of the sample was 28.99 (SD = 8.49). Participating nurses had an average job tenure of 25.45 (SD = 16.59) months; 72.9% had completed secondary education and 27.1% had university degree. In addition, head nurses who provided ratings of employability and in-role performance (n = 12) were on average 45.03 (SD = 4.89) years old. They had 25.71 (SD = 4.36) years of work experience within the current hospital and 5.37 (SD = 3.47) years of experience in working with nurses they rated.

Measures

Three native speakers independently translated all scales to Hungarian, and final formulations were determined based on consensus. All items were measured on a five-point scales ranging from 1(fully disagree) to 5(fully agree), except for the career adaptability and supervisor-rated employability scales (see below).

Proactive personality. To measure proactive personality, we used the six-item abbreviated Proactive Personality Scale (Bateman & Crant, 1993; Claes, Beheydt, & Lemmens, 2005). An example item from the scale is "If I believe in something, I will make it happen." Cronbach's α was 0.72.

Conscientiousness. To assess conscientiousness, we used nine-items from the Big Five Inventory (Goldberg, 1993). An example item is "I see myself as someone who does a thorough job." Cronbach's α was 0.78.

Career adaptability. Career adaptability scale (CAAS; Savickas & Porfeli, 2012) was used to assess participants' career adaptability. The scale contains four six-item subscales to measure the adaptive resources concern, control, curiosity, and confidence. Example items are "Thinking about what my future will be like" (concern), "Making decisions by myself" (control), "Exploring my surroundings" (curiosity) and "Overcoming obstacles" (confidence). Participants rated all the items on a five-point scale (1 = not strong to 5 = strongest). Cronbach's α for the four scales ranged from 0.78 to 0.88. Cronbach's α was 0.93 for the overall scale.

Career planning. To measure career planning we used Gould's (1979) six-item scale, a sample item being: "I know what I need to do to reach my career." Cronbach's α was 0.75.

Proactive skill development. We used three items from Penley & Gould (1981) to measure proactive skill development, a sample item being: "I gain experience in a variety of areas to increase my knowledge and skills." Cronbach's α was 0.83.

Employability. Supervisors rated employability using the employability competence scale (Van Der Heijde & Van der Heijden, 2006). Specifically, we used the eight-item anticipation and optimization subscale, measured on six-point response scale with varying response categories. Example item was "(S)he takes responsibility for maintaining her/his labor market value." Cronbach's α was 0.93.

In-role performance. Supervisor rated in-role performance was measured using four items from Williams & Anderson (1991). A sample item was "This employee performs tasks that are expected of him/her." Cronbach's α coefficient was 0.91.

Control Variables

Recent meta-analytic findings related to the CCT framework suggest that age may be related to career adaptability and adapting (Rudolph et al., 2017). This may hold for our sample too, as more senior and experienced nurses may have accumulated greater human capital (Zacher, 2014). Conversely, while age might stimulate the growth of human capital over time, if work changes, older workers might run the risk of their human capital becoming obsolete, which might have negative consequences for their employability. Thus, we included age as a control variable. Gender related implications from CCT are not very specific and recent empirical studies showed conflicting results, ranging from no gender differences in career adaptability (Rudolph et al., 2017), to higher career adaptability among men as compared with women (Hou et al., 2012). Yet, related research suggests gender might be a correlate of in-role performance (Roth, Purvis, & Bobko, 2010) and, due to lower psychological mobility among women, their employability. Thus, we also control for gender. Finally, supervisor's liking of an employee might bias evaluations of that employee's characteristics (e.g. Lefkowitz, 1995). Thus, supervisory ratings of in-role performance and employability may be affected by liking. In the current study, we therefore measured supervisor liking of the employee with two items (Wayne & Ferris, 1990) and control for this.

Analytical strategy

Confirmatory factor analyses (CFA) and path analysis were conducted with MPlus (Version 7) (Muthén & Muthén, 1998/2012), to test the measurement model and hypotheses. Since some of the study variables had a somewhat skewed distribution, a maximum likelihood procedure with Robust standard errors and χ 2 (MLR), was used to model parameters of the measurement models and the hypotheses. Although the

standard errors of the indirect effects are trustworthy when using the MLR estimator, when testing the indirect effect, we report the 95 percent bias-corrected bootstrap confidence intervals as an additional test of significance (Preacher & Hayes, 2008). Applying recommendations on the use of a two-step process to examine the role of control variables in hypothesis testing (Spector & Brannick, 2011), we contrasted the models with and without the control variables. For the nested-model comparison, the Satorra–Bentler (2001) corrected significance test was used.

Results

Descriptive Statistics and Correlations

Descriptive statistics and correlations are presented in Table 3.1. Most of the correlations were in the expected direction. Career adaptability related positively to adaptive readiness, in terms of both conscientiousness ($r = .28$, $p < .001$) and proactive personality ($r = .46$, $p < .001$). Also, its relationship with career planning ($r = .47$, $p<.001$) and proactive skill development ($r = .38$, $p < .001$) was positive and significant. Adapting behaviours related significantly to supervisory rated outcomes of adaptation, unexpectedly however, career adaptability did not. Career planning related significantly to employability ($r = .28$, $p < .001$) and proactive skill development to in-role performance ($r = .33$, $p < .001$) (Table 3.1).

Construct Validity

Confirmatory factor analysis of the Hungarian translation of the CAAS. To provide evidence on construct validity of the Hungarian translation of CAAS, we conducted CFA (Table 3.2). The initial solution fitted the data well, with fit indices $\chi2 = 540.26$, $df = 248$, $p < .001$, RMSEA = .06, CFI = .91, SRMR = .05. However, an inspection of the modification indices, indicated residuals of two pairs of items to be related. That is, item 22 (Confidence:" Working up to my ability") correlated with item 20 (Confidence:" Taking care to do things well"). In addition, item 19 (Confidence:" Performing tasks efficiently") and item 20 were also related. Allowing these two pairs of residuals to covary, slightly but significantly improved model fit ($\Delta\chi2 = 48.58$; $\Delta df = 2$; $p < .001$). The fit of the final model was: $\chi2 = 486.17$, $df = 246$, $p<.001$, RMSEA = .05, CFI = .93, SRMR = .05. This model fitted the data better than the alternative models such as a 1-factor model with all 24 career adaptability items loading on a single factor ($\Delta\chi2 = 224.34$; $\Delta df = 6$; $p < .001$).

Table 3.1. Descriptive statistics, Correlations and Reliability of study variables

Construct	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Gender	.76	.43											
2. Age	28.99	8.49	.21**										
3. Job tenure (Months)	25.45	16.59	.07	.64***									
4. Education	.27	.45	.24***	.52***	-.18								
5. Conscientiousness	4.00	.53	.24***	.26***	-.21***	.25***	-.78						
6. Proactive Personality	3.77	.55	-.05	-.15***	.01	-.18***	.24***	-.72					
7. Career Adaptability	3.43	.62	-.12*	-.14*	.03	-.16***	.28***	.46***	-.93				
8. Career Planning	3.52	.71	-.11*	-.10	-.04	-.07	.11	.33***	.47***	-.75			
9. Proactive Skill Development	3.91	.64	.08	.16**	.15	.12*	.33***	.24***	.38***	.20**	-.83		
10. In-role Performance1	4.14	.45	-.03	.13	.19	.07	.03	-.06	.02	.18	.33***	-.91	
11. Employability1	3.33	.59	-.17	.03	.10	-.06	-.03	.03	.01	.28**	.14	.59**	-.93
12. Personal Liking1	3.51	.69	-.10	.08	.09	-.03	.02	-.07	.01	.11	.20**	.57	.55

Note. ***p<.001 **p<.01 *p<.05. Gender was coded: Male = 0; Female = 1; Education was coded: Secondary education = 0; High education = 1; Correlations among self-rated variables based on the whole sample of n = 314 (except for Tenure, n = 250), correlations with supervisory-rated variables based on n =114 (full-time nurses sample). 1 In-role performance, Employability and Personal Liking were rated by a supervisor.

Table 3.2. Hungarian CAAS: items, means, standard deviations, standardized loadings, and internal consistency reliabilities

Construct		Construct (First order)	M	SD	Loading	Reliability
	CA1	Jövőmön való gondolkodás	3.48	1.06	.75	.87
	CA2	Felismerni, hogy a ma meghozott döntéseink formálják a jövőnket	3.26	1.05	.76	
	CA3	A jövőre való felkészülés	3.20	1.04	.87	
	CA4	Oktatási és szakmai lehetőségek ismerete, melyek közül majd döntenem kell	2.92	1.04	.64	
	CA5	Célokhoz vezető út megtervezése	3.22	1.03	.79	
Concern	CA6	Életpályámmal való törődés	3.31	1.07	.81	
	CA7	Optimista hozzáállás	3.30	1.21	.48	.75
	CA8	Önálló döntéshozás	3.28	1.11	.72	
	CA9	Tetteimért való felelősségvállalás	3.72	.89	.68	
	CA10	Hitemhez való ragaszkodás	3.36	1.06	.58	
	CA11	Számítok magamra	3.72	.98	.66	
Control	CA12	Azt teszem ami jó nekem	3.31	1.07	.54	
	CA13	Környezetem felfedezése	3.33	1.02	.57	.81
	CA14	Keresem a lehetőségeket a személyiségem fejlesztésére	3.59	.98	.70	
	CA15	Döntések előtt megvizsgálom a lehetőségeket	3.55	.95	.62	
	CA16	Megfigyelem milyen különböző módokon csinálhatok dolgokat	3.22	.95	.60	
	CA17	Mélyen utána járok a kérdéseimnek	3.09	1.04	.67	
Curiosity	CA18	Kíváncsivá tesznek az új lehetőségek	3.64	.99	.66	

Construct		Construct (First order)	M	SD	Loading	Reliability
	CA19	Hatékony feladatvégzés	3.68	.88	.60	.85
	CA20	Figyelek arra, hogy jól végezzem el a dolgokat	3.80	.87	.57	
	CA21	Új képességek elsajátítása	3.57	.9	.61	
	CA22	Képességeimnek megfelelően dolgozom	3.64	.98	.60	
	CA23	Akadályok legyőzése	3.48	.92	.64	
Confidence	CA24	Problémamegoldás	3.59	.98	.71	
Construct		Construct (Second order)	M	SD	Loading	
	1	Concern	3.23	.82	.79	.93
	2	Control	3.45	.71	.96	
	3	Curiosity	3.41	.71	.87	
Adaptability	4	Confidence	3.63	.70	.92	

Note. n = 314

Comparison to CAAS-International.

The results of the confirmatory factor analysis of the Hungarian form of the CAAS were compared to the results of CAAS-International (Savickas & Porfeli, 2012). Results indicated the item loadings and first-order factor loadings to be aligned. Standardized item first-order factor loadings ranged from .48 to .87, suggesting all items are strong indicators of their constructs. Additionally, all four career adaptability dimensions were strong indicators of the second-order career adaptability construct. Control exhibited the highest difference in factor loadings in comparison with CAAS-International (.96 vs .86). The loading for Concern, Curiosity, and Confidence, were almost equal to the loadings for the CAAS-international, .79, .87 and .92, respectively. Mean scores of the four dimensions and the overall score for career adaptability, were slightly lower than the average across the International samples: Concern (3.23 vs. 3.79), Control (3.45 vs. 3.93); Curiosity (3.41 vs. 3.69); Confidence (3.63 vs. 3.93); and Career adaptability (3.43 vs. 3.84). Overall, these results suggest that the construct validity information of the Hungarian CAAS is in line with previous cross-cultural tests.

Measurement model. Several steps were taken to assess the measurement model and test whether common method bias is a problem in the current study. First, the Harman's single-factor test was performed (Chang, Van Witteloostuijn, & Eden, 2010),

in which all self-rated variables that are part of the hypothesized models were entered in a principal components analysis. Since 33.5% of the variance accounted for by the single factor solution was well below the 50% threshold, common method bias was concluded to be low. Second, all Variance Inflation Factor (VIF) values were below 3, which is well below the threshold of 10 that would indicate that multicollinearity poses a threat. Finally, a series CFAs were performed to assess construct validity of the and compare the fit of alternative measurement models.

In assessing the measurement model, we employed item parcelling to improve the ratio between number of participants to the number of estimated parameters (Little, Rhemtulla, Gibson, & Schoenmann, 2013). We tested the measurement model separately the self-rated and supervisory-rated scales. For the first order constructs measured with more than three items, we created three parcel indicators per construct using item-to-construct balance approach. We first performed exploratory factor analysis and then assigned the highest and the lowest loading items across parcels. For the second order construct career adaptability, we created four parcels representing average scores for each of the four subscales.

The measurement model for the self-rated variables demonstrated adequate fit to the data ($\chi2$ = 241.46, df = 94, p<.001; CFI = .92; RMSEA = .07; SRMR = .06). Moreover, this model fitted the data significantly better than the alternative measurement models (Table 3.3), such are single factor model ($\chi2$ = 950.39, df = 104, p<.001; CFI =.528; RMSEA = .16; SRMR = .13; SB-corrected $\Delta\chi2$ = 462.99; Δdf = 10; p < .001); the two-factor model with proactive personality and conscientiousness as the first factor and remaining variables (career adaptability, proactive skill development and career planning) as the second factor ($\chi2$ = 901.13, df = 103, p<.001; CFI =.55; RMSEA = .16; SRMR = .14; SB-corrected $\Delta\chi2$ = 487.80; Δdf = 9; p < .001); and the three-factor model with proactive personality and conscientiousness as the first factor, career adaptability as the second factor, and skill development and career planning as the third factor ($\chi2$ = 812.99, df = 101, p<.001; CFI =.60; RMSEA = .15; SRMR = .14; SB-corrected $\Delta\chi2$ = 1100.03; Δdf = 7; p < .001). In addition, the measurement model of the measures rated by the supervisors demonstrated adequate fit to the data ($\chi2$ = 11.77, df = 11, p=.381; CFI = 1.00; RMSEA = .02; SRMR = .02).

Hypothesis Testing

Career adaptability, adaptive readiness, and adapting behaviors. To test the nomological network of the CAAS, relationships with adaptive readiness, and adaptive behaviours were assessed. We hypothesized a model in which proactive personality

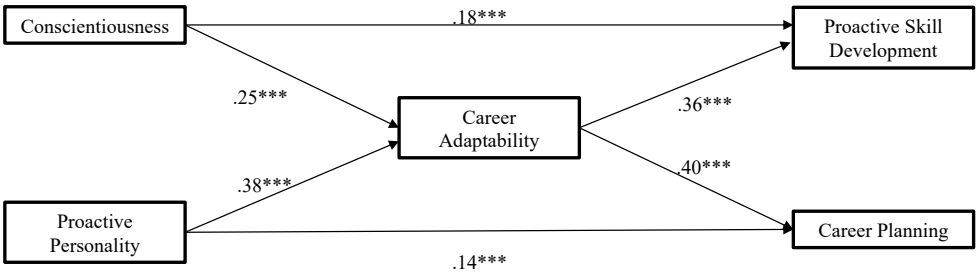
and conscientiousness indirectly related to proactive skill development and career planning through career adaptability. The fit of the model was acceptable ($\chi2 = 12.09$, df = 5, p = .03.; CFI = .97; RMSEA = .07; SRMR = .03). However, modification indices indicated two significant direct paths, one from conscientiousness to proactive skill development and the other from proactive personality to career planning. Inclusion of these two direct paths significantly improved model fit ($\Delta\chi2 = 10.45$; $\Delta df = 2$; p = .005) resulting in a well-fitting model ($\chi2 = 1.43$, df = 3, p = .698.; CFI = 1.00; RMSEA = .01; SRMR=.01). Hypotheses were tested based on this model (see Table 3.3 and Figure 3.2). In addition, we contrasted the models with and without the control variables. The model with control variables demonstrated better fit to the data ($\Delta\chi2 = 24.67$; $\Delta df = 6$; $p < .001$), although hypothesized paths pertaining to parameter estimates remained almost identical. Since inclusion of age and gender as control variables offers additional insight about their relationships with career adaptability, we control for these factors in the model used for hypothesis testing.

Table 3.3. Adaptive readiness, career adaptability and adapting strategies

Predictor	Career Adaptability		Career Planning		Proactive Skill Development	
	β	SE_β	β	SE_β	β	SE_β
Independent variables						
Conscientiousness	.25***	.06	-		.18**	.07
Proactive Personality	.38***	.06	.14*	.07	-	
Mediating variables						
Career Adaptability	-		.40***	.06	.36***	.05
Control Variables						
Age	-.12*	.05	-.01	.05	.15**	.05
Gender	-.13**	.05	-.06	.06	.05	.06
R^2	.28		.24		.22	
Indirect effects on Career Planning						
Conscientiousness	.10***	.03				
Proactive Personality	.15***	.03				
Indirect effects on Proactive skill development						
Conscientiousness	.09***	.02				
Proactive Personality	.14***	.03				

Note. n = 314. ***p<.001 **p<.01 *p<.05. Standardized regression coefficients are reported; standard errors in parentheses.

Figure 3.2. Results of the mediation model between adaptive readiness, career adaptability and adapting behavior.



Note. Career adaptability, Proactive skill development and Career planning are controlled for Age and Gender.

Proactive personality (β = .38; p < .001) and conscientiousness (β = .25; p < .001) related significantly and positively to career adaptability. In line with Hypothesis 1a and Hypothesis 1b, this indicates that higher levels of adaptive readiness relate to higher levels of career adaptability.

Career adaptability was significantly and positively related to both indicators of adaptive behaviours: career planning (β = .40; p < .001) and proactive skill development (β = .36; p < .001), which is in line with Hypothesis 2a and Hypothesis 2b.

Moreover, the indirect effects of proactive personality and conscientiousness on career planning and proactive skill development, through career adaptability, were significant. Specifically, proactive personality related to both proactive skill development (β = .14, SE = .03, p < .001; bootstrapped estimate = .16, bootstrap 5,000 samples, 95% CI [.09; .24]); Hypothesis 3a) and career planning (β = .15, SE = 03, p < .001; bootstrapped estimate = .20, bootstrap 5,000 samples, 95% CI [.12; .30]; Hypothesis 3c) through career adaptability. Conscientiousness related to both proactive skill development (β = .09, SE = 02, p < .001; bootstrap = .110, bootstrapped estimate 5,000 samples, 95% CI [.06; .12]; Hypothesis 3b) and career planning (β = .10, SE = 03, p < .001; bootstrapped estimate = .14, bootstrap 5,000 samples, 95% CI [.06; .22]; Hypothesis 3d), through career adaptability. Together, these results provide support for Hypothesis 3.

Finally, two direct paths from conscientiousness to proactive skill development (β = .18, SE = 07, p < .001), and from proactive personality to career planning (β = .14, SE = 07, p < .001) remained significant. Whereas the relationship between

proactive personality and proactive skill development seems to be fully captured by higher career adapt-ability resources of more proactive workers, in the relationship between proactive personality and career planning the direct effect was also significant. Similarly, while more conscientious workers seem to invest more in career planning due to their higher career adapt-ability resources, there was also a direct relationship between conscientiousness and proactive skill development (see Table 3.3 and Figure 3.2).

Career adaptability, adapting behaviors, and adaptation outcomes. Hypothesis 4 and Hypothesis 5 proposed career adaptability to be related to the adaptation outcomes employability and in-role performance, through the adaptive behaviours of proactive skill development and career planning. This model was tested among those participants (n = 114) for whom supervisor ratings were obtained.

The specified model showed good fit to the data, $\chi 2 = 4.44$, df = 4, p = .349, CFI = 1. 00, RMSEA = .03, SRMR=.02 (see Table 3.4 and Figure 3.3). This more constrained model did not fit the data worse than the alternative model, in which the indirect path from career adaptability to in-role performance through career planning was added ($\chi 2 = 3.84$, df = 3, p = .279, CFI = .99, RMSEA = .05, SRMR = .02; $\Delta\chi 2 = .73$, df = 1, p = .394), and the model where two direct paths were also added ($\chi 2 = 2.86$, df = 2, p = .240, CFI = .99, RMSEA = .06, SRMR = .02; $\Delta\chi 2 = 1.55$, df = 2, p = .462). Comparison of the model with and without control variables indicated that the inclusion of age, gender and personal liking by supervisor significantly improved model fit, while conclusions vis-a-vis hypotheses remained the same. Therefore, we controlled for age, gender and personal liking by supervisor.

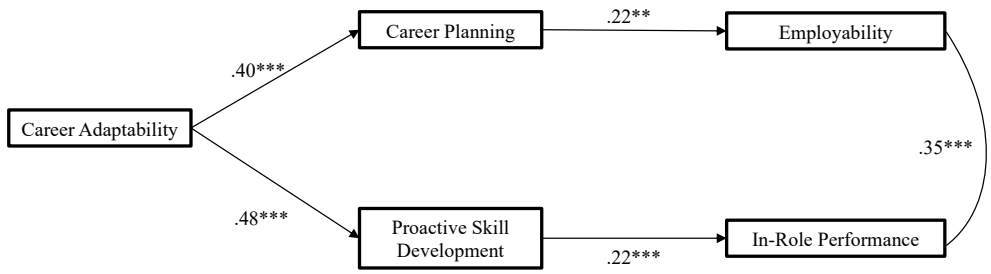
The indirect effect of career adaptability on in-role performance through proactive skill development was positive and significant ($\beta = .11$, SE=.03, p<.001; bootstrapped estimate = .07, bootstrap 5,000 samples, 95% CI [.03; .12]). In addition, the indirect effect of career adaptability on employability through career planning was also positive and significant ($\beta = .09$, SE = .04, p = .019; bootstrapped estimate = .09, bootstrap 5,000 samples, 95% CI [.021; .182]). However, the indirect relationship between career adaptability and employability through proactive skill development was not supported ($\beta = -.02$, SE = .04, p = .673 bootstrapped estimate = .02, bootstrap 5,000 samples, 95% CI [-.11; .06]). These results provide support for Hypothesis 4 and Hypothesis 5b, but not for Hypothesis 5a. The results are presented in Table 3.4 and Figure 3.3.

Table 3.4. Career adaptability, adapting strategies and supervisor-rated outcomes

Predictor	Career Planning		Proactive Skill Development		In-role Performance		Employability	
	β	$SE_β$	β	$SE_β$	β	$SE_β$	β	$SE_β$
Independent variable								
Career Adaptability	.41***	.08	.48***	.07	-		-	
Mediating variables								
Career Planning	-		-		-		.22**	.08
Proactive Skill Development	-		-		.22**	.07	-.03	.08
Control Variables								
Age	-.03	.09	.11	.07	.04	.08	.04	.08
Gender	-.11	.06	.02	.13	.02	.04	-.06	.07
Personal Liking	.09	.08	.18*	.019	.52***	.07	.40***	.08
R^2	.21		.27		.38		.24	
Indirect effects on In-role Performance								
Proactive Skill Development	.11***	.03						
Indirect effects on Employability								
Proactive Skill Development	-.02	.04						
Career Planning	.09*	0.4						

Note. n = 114; ***p<.001 **p<.01 *p<.05. Standardized regression coefficients are reported; standard errors in parentheses.

Figure 3.3. Results of the mediation model between career adaptability, adapting behavior, and supervisor-rated outcomes.



Note. All variables are controlled for Age and Gender. Supervisor rated variables are controlled for Personal liking.

Discussion

This study examined the validity of the Hungarian CAAS, by testing its psychometric properties and nomological network in a sample of nurses. The results indicate that the Hungarian form of CAAS performs in line with CAAS-International (Savickas & Porfeli, 2012), in terms of scale reliability and factor structure. The scales measure the second-order career adaptability construct through the four first-order constructs: concern, control, curiosity and confidence. Moreover, the CCMA based measurement model fitted the data better than the alternative one-, two- and three-factor models, offering support that adaptive readiness, career adaptability and adapting behaviors, represent related but statistically distinguishable constructs.

The results of the study also support the positive relationship between adaptive readiness and adapting behaviors through career adaptability. As hypothesized, proactive and conscientious nurses engaged in more career planning and skill development, by virtue of a higher level of the career adaptability competences. This finding extends the validity of the CCMA (Savickas, 2013; Savickas & Porfeli, 2012) to working professionals such as nurses. Moreover, while Tian & Fan (2014) related development of career adaptability to features of learning environment and parental support of nursing students, they didn't empirically test the outcomes of career adaptability. On the other hand, the current study extends the portfolio of adapting behaviors to include proactive skill development, as behavior related to adaptive readiness and adaptability resources of working nurses. Such results provide more context specific support for the brother theory on the importance of proactive personality and conscientiousness for navigating the current labor market. However, direct effects from the two indicators of adaptive readiness to both adaptive strategies imply that adaptivity might affect adapting in ways beyond the career adapt-ability resources. Future research should explore alternative self-regulatory mechanisms to enrich our understanding of pathways through which more context-general adaptive readiness is manifested in adapting attitudes and behaviors in the career domain.

Finally, the results indicate positive relationships of career adaptability to supervisor ratings of in-role performance, through proactive skill development, and supervisor ratings of employability through career planning. Career adapt-ability resources represent self-regulatory strengths that stimulate nurses' self-directed acquisition of human capital, which in turn positively contributes to performing tasks and duties within their job. Also, career adapt-ability resources translate into individual nurses' investment in career planning, which contributes to them being evaluated as more employable and capable to prepare and adapt to future changes

in a creative manner.

Contrary to expectations, career adaptability did not relate to employability indirectly through proactive skill development. This might indicate that career adaptability represents a set of individual strengths that can trigger parallel behavioral strategies which, consequently lead to different outcomes. Career planning enhances ones' orientation toward the future and the degree to which one is able to consider future alternatives. This might be more important for increasing employability as opposed to the acquisition of human capital. Alternatively, engagement in setting career goals and developing specific action repertoires that are necessary to reach these career goals, may boost career related psychological capital (e.g. hope and career self-efficacy beliefs), reducing uncertainty about future career transitions and consequently leading to higher employability. It might, however, also be that the degree of conceptual similarity among the two adapting strategies, combined with the relatively small sample size, affected the statistical power of the analysis and that this reduced the chance to detect the role of proactive skill development in employability.

Practical Implications

The current study has implications for individual nurses, nursing schools, and hospital human resource management practices. Positive relationships of adaptive readiness to proactive skill development and career planning, through career adaptability, indicate the instrumental role of career adaptability in managing individual nurses' careers. Besides their role in teaching the content of the nursing profession, nursing schools may be able to help nurses-to-be develop in their future careers by equipping students with self-regulatory resources of concern, control, curiosity, and confidence, prior to graduation. This may help develop nurses that are skilled to proactively acquire knowledge that they might not have acquired within nursing school. Continuous updating job knowledge and skills is needed to stay on track with the fast-changing healthcare industry and needs of increasingly more complex care provision. Nursing schools can help nurses develop important self-regulatory mechanisms that will help them deal with such changes across their careers.

Additionally, the positive indirect relationship of nurses' career adaptability to supervisor rated outcomes, through proactive skill development and career planning, underscores the organizational benefits of supporting nurses' career adaptability.

Stimulating career adaptability through organizational practices might increase their investment in acquiring and/or upgrading skills and knowledge, and help them to be more effective on the job. Since nursing performance is reflected in the provision of high-quality patient care which represent hospitals' core business, understanding what stimulates nurses to continually update their skills and knowledge is crucial for hospitals' long-term success.

Finally, career adapt-ability resources relate positively to nurses' engagement in career planning activities, which might have long term benefits for increasing and sustaining their employability. By fostering career adapt-ability resources, hospitals may contribute to developing nurses that are more able to anticipate and respond to changes within the nursing job. Also, in a context where considerable percentage of well-trained nurses migrates to other countries in search of better employment conditions, being employable beyond the current job is valuable for the career success of individual nurses as well.

Limitations and Suggestions for Future Research

Although using supervisor ratings of in-role performance and employability, rather than self-report measures, decreased the risk of common source bias for some tested relationships, this study does have certain limitations.

First, the cross-sectional nature of the data means that causal inferences about the direction of relationships between variables cannot be tested. Hence, further experimental and/or longitudinal research to test the directionality of the hypothesized relationships is needed.

Second, our current sample includes both part-time and full-time nurses. Although this increases the generalizability of the findings on broader group of nurses, it resulted in a sample of nurses who are overall somewhat younger than the average population of nurses within Hungary and the European Union in general. While this might not necessarily be a disadvantage, as understanding antecedents of performance and employability of nurses who are relatively early in their careers is valuable for nursing schools and hospitals, future research should ensure greater representation of older nurses. In addition, the sample size of full-time workers limited the possibility to test the roles of adaptive readiness, adaptability resources, adapting and adaptation outcomes within the same statistical model. Thus, replication of the

findings on a larger sample of full-time professionals is recommended.

Third, we focused on two adaptive strategies (career planning and proactive skill development). In extending the findings of this study, future researchers should consider including additional adapting strategies such as social influence behaviors (e.g. self-promotion) and boundary management (e.g. work–life balance) or proactive work behaviors (e.g. job crafting).

Finally, the current study tested only the individual antecedents of career adaptability and did not measure boundary conditions that might inhibit or stimulate their effects on adapting behaviors and outcomes. One potential extension of this line of research is identifying contextual and organizational-level moderators of the hypothesized relationships. For example, in the "weak" situations characterized by greater autonomy or in an organizational culture where proactivity is highly valued, workers might have more space to express themselves and be empowered to draw upon their own career adapt-ability resources. Accordingly, in the context that offers opportunities for career progression, nurses might use their career adapt-ability resources to increase their employability within the hospital, whereas if such opportunities are not provided they might focus on external employability opportunities. The current findings represent only a first step toward elucidating the complex mechanism by means of which career adaptability relates to productively performing in one's current role and sustaining employability.

Conclusion

To conclude, the present study aimed to expand our understanding of the antecedents and consequences of career adaptability within the context of the Hungarian nursing professionals. Results suggest that career adaptability competences represent key self-regulatory resources that might explain why more proactive and conscientiousness nurses engage more in career planning and proactive skill development. Moreover, through these adapting behaviors, career adapt-ability resources relate to distal positive outcomes, such as higher in-role performance and employability. The study supports the generalizability of the career adaptability construct in the Hungarian nursing context. It also offers an extension of CCMA (Savickas, 2013), by including proactive skill development and career planning in the portfolio of adapting behaviors among working professionals. Finally, it provides empirical evidence for the relationship between career adaptability and supervisory rated outcomes.