

Exploring Career Management Skills in Higher Education: Perceived Self-efficacy in Career, Career Adaptability and Career Resilience in Greek University Students

Despina Sidiropoulou-Dimakakou, Katerina Argyropoulou, Nikos Drosos, Andronikos Kaliris, and Katerina Mikedaki

Career Counseling Research and Assessment Centre
Faculty of Philosophy, Pedagogy, and Psychology
National and Kapodistrian University of Athens
Athens, Greece

Abstract. This paper aims at highlighting a grid of career management skills which can help university students respond effectively to the complexity of labor market and career development, namely, career adaptability, perceived career self-efficacy beliefs and career resilience. Given that little is known so far regarding the degree to which higher education students possess and develop such skills, a cross-sectional survey was conducted to investigate: (a) students' perceived level of the above mentioned skills, (b) the relationships that may exist among them, and (c) possible differences in skill levels between working and non-working students. Results demonstrated relatively high scores in all skills, strong positive relationships among them as well as significant differences at scores as to students' work status. Implications for training, career counseling interventions and further research are provided.

Keywords: Higher Education; career management skills; career adaptability; perceived career self-efficacy; career resilience

Introduction

The contemporary world of work is characterized by complexity and constant change. Career is influenced by numerous contextual factors such as national culture, economy, the political environment, as well as by personal variables, such as relationships with others (Greenhaus, Callanan, & DiRenzo, 2008). Changing labor markets and shifts in job and life roles make career and work quite challenging tasks (Mylonas & Furnham, 2014) causing unpredictable effects on individual's life (Sidiropoulou-Dimakakou, Argyropoulou, & Drosos, 2013).

Societal changes along with rapid technological advancements, globalization and the contemporary global financial crisis, all have created changes as to how individuals pursue and manage their career. Career has largely lost traditional elements of linearity and predictability (Akkermans, Brenninkmeijer, Huibers, & Blonk, 2013) which has led to numerous challenges for citizens such as the increase of unemployment and underemployment rates, “flexible” job contracts and constant reformulations on vocational self-concepts (Kaliris & Kriwas, 2014). All aforementioned situations are forcing individuals to adapt to multiple roles and transitions, to direct their life toward the achievement of specific goals, to strengthen their personal and career self-efficacy beliefs (Savickas, 2013; Sidiropoulou-Dimakakou, Argyropoulou, Drosos, Kaliris, & Mikedaki, 2014).

Past boundaries between career and personal counseling constructs and aims are rendered quite vague today. Rather, career counseling attempts to help the person deal effectively with life-design issues, with career being a critical one. Our views align with McIlveen’s (2015) considerations, who claims that today, career counseling practice should place more emphasis on its preventive - educational role with the aim of supporting clients to act proactively in order to confront increased career and labor market demands. We contend that this aim can be realized by helping clients acquire and develop a set of core lifelong career management skills.

Lifelong Career Management Skills

Lifelong career management skills refer to multifaceted skills and attitudes which encompass collection, analysis, composition and organization of information about self, education and professions (European Lifelong Guidance Policy Network, 2012). The prior term is intrinsic to career decision-making, problem solving and transition management (ELGPN, 2012; Sultana, 2012). The similar notion of *meta-competences* is associated with core skills considered to facilitate career management within the post-modern context, whereby notions of “protean”, “circular”, “transitional” and “boundaryless” career have come into prominence (Lo Presti, 2009).

Career management skills (CMS) are considered highly significant as they may support individuals in taking full advantage of educational and career opportunities, in coping with difficulties in the workplace, and in maintaining balance among various roles at work, education and family, throughout the life span (ELGPN, 2012; Sidiropoulou-Dimakakou, Argyropoulou, & Drosos, 2010a).

Career management skills in Higher Education

College or university is a critical time in young people’s career development. During this developmental period, students partially form career trajectories which are either supported or hindered by their abilities to set and address academic and career-related goals (Sung, Turner, & Kaewchinda, 2013). Considering the multiple career-related challenges which arise for higher education students, both during and after graduation, it is self-evident how important it is to help them develop certain types of CMS as a way for them to successfully deal with transitions, such as that from school to work, to reach specific academic and career goals (Sung et al., 2013), to enhance their employability rates (Mason, Williams, & Cranmer, 2009) and finally, to be successful both at work and in life (Tran, 2013).

Next, career adaptability, perceived career self-efficacy, and career resilience will be highlighted as they represent skills with great potential for the facilitation of higher education students' career development.

Career adaptability

Career adaptability describes an individual's readiness to respond to a conscious and continuous exploration of the self and the environment in order to cope with change of work roles and successfully handle unforeseen adaptations in career (Savickas, 2013). The construct consists of the following core adaptability resources (Savickas & Porfeli, 2012): *Concern*, *control*, *curiosity*, and *confidence*. *Concern* is related to future orientation issues encompassing a sense of optimism about the future. *Control* refers to one's need to exert influence on the vocational issues that concern them. *Curiosity* refers to the formulation of future career plans through exploration of self and the environment. *Confidence* is associated with person's belief in their abilities to accomplish necessary career actions.

Those who possess high levels of adapt-abilities tend to exhibit behavioral patterns that enable them to design their careers by attributing optimistic meanings to various career roles (Argyropoulou, 2013), whereas they ensure harmony in their personal and professional lives (Savickas & Porfeli, 2012).

Perceived self-efficacy in career

People with high confidence in their abilities tend to face difficult situations as challenges to overcome rather than as threats to be avoided (Bandura, 1997). Therefore, they try to exercise control over various complicated and hard tasks or situations (Kaliris & Sidiropoulou-Dimakakou, 2012).

Perceived self-efficacy in career refers to the beliefs people form in terms of their ability to implement the appropriate actions required to effectively manage various career issues (Sidiropoulou-Dimakakou, Mylonas, & Argyropoulou, 2012). A relatively high degree of self-efficacy in career may strengthen the ability through which cognitive, social and behavioral skills are organized into a single course of action for the achievement of career objectives. Moreover, employees equipped with high self-efficacy levels are more likely to perform occupational roles innovatively, whereas those with low self-efficacy levels are prone to processing occupational duties conventionally and with little personal embellishment (Sidiropoulou-Dimakakou, Mylonas, & Argyropoulou, 2015).

Career resilience

Resilience reflects the ability to adapt to change, even when circumstances are discouraging or disruptive (London, 1997). It is about "being able to tolerate uncertainty and ambiguity, whilst at the same time being flexible and autonomous" (Bimrose, Brown, Barnes, & Hughes, 2011, p. 17). Resilience also entails turning the effects of tension and painful events to one's benefit. Career resilience development is supported from factors such as positive self-image and self-confidence, problem-solving skills, a sense of control, and search for meaning in life despite difficulties or traumatic events.

Career resilience is conceptually close to career adaptability as both concepts assist the person in the navigation of an uncertain labor market (Bimrose, Barnes, & Hughes, 2008). Nevertheless, career resilience focuses on individual's ability to manage and survive from change precisely when it happens

(Goodman, 1994; Kohn, O'Brien, Wood, Pickering, & Decicco, 2003) while career adaptability is most determined by a person's competency to manage change over time.

The grid of the career management skills described above could serve as a robust set of resources and strategies for young individuals to navigate the world of work and to self-negotiate life and career transitions (Bimrose & Hearne, 2012; Lo Presti, 2009). It was of great interest to us to investigate the extent to which a sample of University students possess such skills and the relationships that may have with each other. Our particular focus was on career adaptability and career resilience as they are conceptually similar constructs considered valuable in supporting adults manage positive or negative career transitions (i.e., the one from tertiary education to the labor market) in smoother ways (Bimrose & Hearne, 2012; Bridgstock, 2009). The relationship of perceived self-efficacy in career with the prior skills was also considered crucial as all being together may enhance students' efforts in organizing and performing career-related tasks despite adversities (Sidiropoulou-Dimakakou et al., 2014).

Aim of the study and research questions

Our aim was to explore the degree to which university students think they possess career adaptability, perceived self-efficacy in career and career resilience. Another goal was to comprehend possible similarities or differences among these skills by investigating their interrelationships. The role of work was also examined as provision of work experiences to students (e.g. through practicum) may stand as a critical factor for CMS development. There have been a few studies focused on the impact of learning and training in the development of career adaptability (Brown, Bimrose, Barnes, & Hughes, 2012; Koen, Klehe, & Van Vianen, 2012) or on the relationships between career adaptability and factors such as work engagement or work conditions (Maggiori, Johnston, Krings, Massoudi, & Rossier, 2013; Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012). However, there is a lack of studies examining explicitly whether work experience differentiates students' level at a set of CMS. This is a gap in bibliography we intended to fill with this study. Finally, we were interested in receiving students' opinions about the skills they consider most important to succeed in any work environment. In particular, the following research questions were addressed:

- (1) Which is the perceived level of career adaptability, self-efficacy in career and career resilience in university students?,
- (2) What relationships occur among career adaptability, perceived self-efficacy in career and career resilience?,
- (3) Are there any differences regarding the level of skills between working and non-working students?,
- (4) Which three career management skills do students regard as most essential to succeed in any working environment?

Method

Participants

Two hundred thirty-six (236) undergraduate students of the Department of Philosophy, Pedagogy and Psychology of the University of Athens participated in this study. Graduates of the prior Department have a licensure of philologist. Common obligatory subjects for all students are Ancient Greek, Philosophy, Theory and Methodology of Teaching, Educational Assessment, Career Guidance, Educational Psychology etc. The curriculum gives students the opportunity after the second semester to select their major of study among the directions of Philosophy, Pedagogy or Psychology. Students carry out a short practicum in teaching, however, the practicum experience being offered is not targeted to developing specific career management skills to participants.

Most students of the sample were up to 25 years old. Eight students who were over 25 were excluded from further analysis so as not to bias results, leading to a final sample of 228 participants. The majority of them were women ($n = 209$, 91.7%). Most participants were unemployed ($n = 169$, 74%) whereas 59 students (26%) held a job at the time of the survey.

Measures

Career adaptability. The adjusted Greek form (Mikedaki, 2015) of the Career Adapt-abilities Scale – International Form 2.0 (CA-AS; Savickas & Porfeli, 2012) was used to indicate the level of participants in career adaptability resources. The Greek scale consists of 24 items, the same as the original one. Participants responded to each item employing a 5-point Likert-type scale (1=not strong, 5=strongest). Below, examples of items are given for each sub-scale: Concern: “thinking about what my future will be like”, control: “taking responsibility for my actions”, curiosity: “Becoming curious about new opportunities”, confidence: “Performing tasks efficiently”. High reliability is reported as to the total scale (.92) and the sub-scale scores [concern (.83), control (.74), curiosity (.79) and confidence (.85)]. In the current study α estimates were also high (total scale: .94, concern: .87, control: .85, curiosity: .83, confidence: .86).

Perceived self-efficacy in career. Perceived Self-efficacy in Career Scale (PSECS; Sidiropoulou-Dimakakou et al., 2012) was used to explore career self-efficacy beliefs. The 21-item scale has reached adequate psychometric properties in studies with adults ($N = 126$) and high school students ($N = 276$). Four dimensions were supported by exploratory and confirmatory factor analyses (Sidiropoulou-Dimakakou et al., 2015): *Career management* represents individual’s ability to cope effectively with practical and emotional issues in career (e.g. “I believe I am able to achieve most of the career goals that I have set for myself despite the current social and economic difficulties”); *Career skills* relates to the utilization of organizational skills and performance when working under harsh conditions (e.g. “In general, I can think of alternative ways to better organize my work and become more efficient”); *Flexibility at work* refers to a person’s ability to adapt to transitions and changes that may occur in the workplace (e.g. “Even when duties in my job change, I am able to perform efficiently”); *Creativity at work* represents active interest in career through creativity and ingenuity (e.g. “Thanks to my resourcefulness, I know how to

deal with unexpected situations in my work"). Items are scored on a 5-point Likert-type scale (1 = no confidence at all, 5 = complete confidence). Alpha estimates in this sample were high for the total scale ($\alpha = .91$) as well as for the sub-scales (.80, .75, .75, .80).

Career resilience. The Career Resilience Self-Assessment (Straby, 2010) was translated in Greek in order to measure students' career resilience level. This scale is unidimensional and comprises 14 statements scored at a 5-point Likert-type scale (1 = Do not agree at all, 5 = Strongly agree). Higher scores demonstrate that the individual is better prepared and willing to be in charge of their career development and more likely to be pursuing career-resilient activities as normal practice. Examples of items are as follows: "The skills and abilities that I need to be employable are clear to me", "I can identify three important accomplishments from my current/last job". In the present research Cronbach's α was high ($\alpha = .89$).

Question as to the most important career skills. An additional question was included in the survey with the aim of exploring three (3) skills students consider primary to succeed in any working environment.

Demographics. A questionnaire was employed to gather data on students' gender, age, major of studies and status of employment (distinguishing between working and non-working students).

Procedure

A cross-sectional survey was carried out from April to June 2014 at the Department of Philosophy, Pedagogy, and Psychology of the National and Kapodistrian University of Athens. Cluster sampling was applied as participants represented entire classes. Questionnaires were completed during a regular class. No award was given for participation in the study. Confidentiality of the data was maintained throughout all research stages.

Data analysis

SPSS V.22 was used to analyze data. Normality of data distribution was confirmed as the quotients of kurtosis and skewness with their corresponding standard errors were less than the number 3.29 (Roussos & Efstathiou, 2008). Additionally, the Kolmogorov-Smirnoff test had a non-significant result ($p = .20$) demonstrating that it would be secure to execute parametric analyses. Descriptive statistics (means, standard deviations) were computed for all scales as well as MANOVA and t-test in order to examine differences in skill levels between working and non-working students. Product-moment correlation coefficient (Pearson's r) was also applied to investigate relationships among variables. Finally, critical z-scores were calculated to compare considerable differences in correlations between groups.

Results

Perceived level of career management skills

Table 1 shows that participants scored highest at *career adaptability* ($M = 3.59$, $SD = .64$). Concerning career adaptability resources levels, the highest score appeared at the dimension of *control* ($M = 3.70$, $SD = .77$). Relatively high scores were also found for *perceived self-efficacy in career* ($M = 3.35$, $SD = .54$). The PSECS

component of *career skills* ($M = 3.49$, $SD = .58$) scored higher than other self-efficacy components (Table 1). Finally, score on career resilience was the lowest of all skills ($M = 3.12$, $SD = .73$).

Relationships among career management skills

Moderate to high positive correlations occurred among most variables at the 0.01 level of significance. An overview of Table 2 shows that there is a high positive relationship between perceived self-efficacy in career and career adaptability ($r = .70$) and a moderate relationship between perceived self-efficacy in career and career resilience ($r = .62$). Career resilience and career adaptability were also moderately related to each other ($r = .62$). No significant relationships were found between skills and participants' age (see Table 2).

Table 1. Means, standard deviations and Cronbach's α reliability coefficients for the scales used in the study

Scales	M	SD	α	Work status	M	SD
Perceived Self-efficacy in career	3.35	.54	.91	Working	3.52	0.57
				Non-working	3.29	0.52
SE 1: Career Management	3.35	.63	.80	Working	3.51	0.67
				Non-working	3.29	0.61
SE 2: Career Skills	3.49	.58	.75	Working	3.61	0.58
				Non-working	3.44	0.57
SE 3: Flexibility at work	3.31	.66	.75	Working	3.56	0.71
				Non-working	3.22	0.62
SE 4: Creativity at work	3.18	.74	.80	Working	3.37	0.82
				Non-working	3.12	0.70
Career Adaptability	3.59	.64	.94	Working	3.72	0.74
				Non-working	3.54	0.59
CA 1: Concern	3.49	.79	.87	Working	3.68	0.92
				Non-Working	3.42	0.73
CA 2: Control	3.70	.77	.85	Working	3.86	0.81
				Non-working	3.65	0.75
CA 3: Curiosity	3.50	.75	.83	Working	3.62	0.86
				Non-working	3.45	0.71
CA 4 : Confidence	3.68	.72	.86	Working	3.73	0.81
				Non-working	3.66	0.69
Career Resilience	3.12	.73	.89	Working	3.44	0.75
				Non-working	3.00	0.69

$N = 228$. SE 1, SE 2, SE 3, SE 4= components of PSECS. CA 1, CA 2, CA 3, CA 4 = components of the Career Adapt-abilities Scale

Differences in the level of perceived career management skills between working and non-working students

Multivariate analysis of variance demonstrated statistically significant differences in the perceived level of self-efficacy in career and its dimensions, in favor of the students who held a job at the time of the survey. [Self-efficacy in career: $F(1, 223) = 8.203$, Wilks' $\Lambda = 2.957$, $p = .005$, $\eta^2 = .035$; Career management: $F(1, 223) = 4.997$, $p = .026$, $\eta^2 = .022$; Career skills: $F(1, 223) = 3.835$, $p = .05$, $\eta^2 = .017$; Flexibility at work: $F(1, 223) = 11.571$, $p = .001$, $\eta^2 = .049$; Creativity at work: $F(1, 223) = 5.06$, $p = .025$, $\eta^2 = .022$]. A statistically significant difference was also found at career resilience, again with the highest score having been achieved by the working students, $t(223) = 4.049$, $p < .001$, 95% CI [.22, .64]. Neither at career adaptability as total scale nor at its components significant differences were found between the two student groups, except for the component of concern, $F(1, 226) = 4.612$, $p = .033$, $\eta^2 = .020$.

Differences in correlations among perceived career management skills between working and non-working students

Several statistically significant differences in correlations among skills were detected, in favor of the group of working students ($n = 58$). These are, as follows: (a) career adaptability and career resilience, ($r = .79$, $p < .01$, $r = .52$, $p < .01$, $z = 3.17$, $p = .0015$), (b) career adaptability component of control and career resilience ($r = .62$, $p < .01$, $r = .30$, $p < .01$, $z = 2.66$, $p = .008$), (c) career adaptability component of curiosity and career resilience ($r = .76$, $p < .01$, $r = .50$, $p < .01$, $z = 2.86$, $p = .004$), as well as (d) career adaptability component of confidence and career resilience ($r = .76$, $p < .01$, $r = .50$, $p < .01$, $z = 2.86$, $p = .004$).

Most important career management skills

Students reported the following three skills as the most important in order to succeed in work: 1) communicative - transpersonal skills (25%), 2) team-working skills (20%), and 3) eagerness-diligence (18%). This set of skills was followed by a series of other significant skills mentioned by students in descending order (based on the amount of responses): creativity, responsibility, patience, knowledge of foreign languages, seminars, IT skills, persistence, coordination skills, adaptability, self-determination, self-efficacy, self-confidence, consistence, flexibility and willingness.

Table 2. Correlations among perceived self-efficacy in career, career adaptability and career resilience

	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	1											
2. PSECS	-.04	1										
3. CM	-.02	.81**	1									
4. CS	-.03	.88**	.62**	1								
5. FW	-.03	.86**	.59**	.67**	1							
6. CW	-.11*	.83**	.50**	.64**	.69**	1						
7. CA	-.004	.70**	.56**	.63**	.59**	.60**	1					
8. CON	-.03	.49**	.40**	.43**	.45**	.39**	.83**	1				
9. CONT.	-.08	.64**	.53**	.59**	.48**	.54**	.80**	.50**	1			
10. CUR	-.06	.63**	.49**	.54**	.50**	.58**	.86**	.65**	.56**	1		
11. CONF.	.01	.62**	.47**	.56**	.54**	.52**	.87**	.64**	.62**	.70**	1	
12. CR	-.02	.62**	.45**	.51**	.59**	.57**	.61**	.51**	.41**	.58**	.57**	1

Note. $N = 222$, *PSECS* = Perceived self-efficacy in career, *CM* = Career management skills, *CS* = Career skills, *FW* = Flexibility at work, *CW* = Creativity at work, *CA* = Career adaptability, *CON* = Concern, *CONT* = Control, *CUR* = Curiosity, *CONF* = Confidence, *CR* = Career resilience.

** $p < .01$

Discussion

An important justification for introducing or strengthening CMS is a greater awareness of the need for skills in managing one's non-linear career pathways in knowledge-based economies. However, there is evidence to suggest that the potential for student career management skill development remains mostly unrealized in universities (Bridgstock, 2009). Many of them concentrate mostly on instilling content and theory into students. Thus, there is a lack of alignment between the skills students have to gain, the skills they acquire from their degrees and the skills employers require (Dennis, Smith, & Wadsworth, 2012). Within this context "skills systems that equip people with a single set of skills or functional knowledge at the outset of their working life are inadequate" (Borbély-Pecze & Hutchinson, 2014, p. 10).

Recent evidence reveals that developing CMS may help individuals achieve better career outcomes. For example, a study of 3,499 students and 166 teachers in vocational education (Meijers, Kuijpers, & Gundy, 2013) showed that several career competencies (e.g. career reflection, career-forming through pro-active behavior) were positively associated with learning motivation and experienced quality of study choice. Sung et al. (2013) also found that educational and career development skills (e.g. career exploration, social/ pro-social/ work readiness) predicted interrelated educational and career development outcomes (e.g. self-efficacy, magnitude of vocational interests and pro-activity) at university students ($N = 132$). Furthermore, Komarraju, Swanson, and Nadler's (2014) study demonstrated that career self-efficacy predicted academic motivation, course and major satisfaction (Study 2, $N = 226$).

Despite the significance of aforementioned research, yet there is no emphasis given at (a) the degree that university students possess a nexus of critical CMS in the context of instability in career and at (b) the interrelationships among specific groups of CMS. The present research may provide underpinnings for further research on the role CMS have for students' career and life design. Specifically, our study revealed that students who are equipped with work experience tend to report higher levels of confidence in managing career-related issues. It is possible that workers tend to formulate more optimistic beliefs about their future career than their non-working peers due to the fact of holding a job despite social adversities, and financial or work difficulties. The largest effect size was demonstrated at flexibility at work ($\eta^2 = .049$), a result which may show that university students participation in work tasks forces their implementation of career management skills in daily work. This consequently may support the development of abilities to adapt to unexpected work changes and transitions.

Students reported high scores in total career adapt-abilities scale with the dimension of *control* being scored highest of other adaptability resources ($M = 3.70$, Table 1). This finding probably highlights students' confidence in their abilities to make reliable career decisions and take control of career issues that concern them. It was also interesting that participants' scores on the dimension of *concern* were differentiated as to their work status, with those working at the period the survey was carried out reporting higher scores than those reported by the sample of non-working ones. Probably more experienced students tend to be

highly interested in future career plans based on their current work influences. Furthermore, they probably realize the vital role of career exploration and preparedness for future success. The above results are complementary to those generated from Koen et al.'s (2012) study which highlighted the role of training in the development of career adaptability resources. Specifically, their quasi-experimental study demonstrated that a group of employees trained in career adaptability resources reported higher control, curiosity and interest scores than the ones who did not participate in the training course. The comparison group also held higher quality work positions shortly after training (Koen et al., 2012).

Another important finding of the research was that job holders as compared with their non-working counterparts tend to use career resilient activities as a normal practice (e.g. creating professional networks, exhibiting self-presentation skills, being involved in career-planning) to a higher degree, by exerting influence on career issues. Probably, work experience along with exhibition at work-related attitudes and behaviors fosters students' awareness of helpful career management strategies. An alternative explanation may be that people who have developed career resilient behaviors are more likely to hold a job, something that could be especially true within a context of high unemployment rates in Greece during the last period.

Perceived self-efficacy in career, career adaptability and career resilience were interrelated from moderate to high degree. This could indicate that these skills share common constructs. Furthermore, it is likely that the strong relationships occurred between control, curiosity and confidence (career adapt-abilities) and career resilience for the sample of workers represent their tendency to activate a grid of CMS in order to perform effectively in the face of difficulties. On the other hand, they are indicative of the strong connections existing between one's sense of control and exploration of the environment with the exhibition of career resilient behaviors.

In line with the above findings several recent studies have demonstrated positive associations of career adapt-abilities with numerous life and career factors, these are, career resilience (Bimrose & Hearne, 2012), vocational commitment (Rossier et al., 2012), orientation to happiness (Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013), career optimism and orientation to learning goals (Tolentino et al., 2014), hope and satisfaction from life (Wilkins et al., 2014), subjective career success (Zacher, 2014a), life quality and breadth of interests (Soresi, Nota, Ferrari, 2012), emotional intelligence (Coetzee & Harry, 2014), personal control on life (Duffy, 2010) as well as career progression and cultivation of intellectual skills (Creed, Fallon, & Hood, 2009).

Finally, students consider crucial to succeed at any work environment skills that refer to communication and management of relationships, operating in teams, common qualifications such as IT skills and skills in foreign languages as well as other competencies such as self-efficacy, leadership, creativity and flexibility. We anticipated these results due to the fact that all students were studying at the Department of Philosophy, Pedagogy, and Psychology. The graduates of this department mainly work as philologists and educators. Thus, it is very likely they prioritize skills related to use of language, communication, and working in teams.

Regarding the psychometric properties of the scales used in the survey, differentiations observed in scores between the groups of working and non-working participants along with high reliability coefficients provide evidence of construct validity for CA-AS, PSECS and the Career Resilience Self-Assessment. Furthermore, the fact that all scales correlate with each other is indicative of convergent validity as these scales are assumed to reflect similar constructs (Sarafidou, 2011).

In order to make the goal of teaching job-related skills more explicit, some universities (e.g. in England) introduce new “stand alone” courses to the existing curriculum and also expand the provision of opportunities for work experience. Other university departments use a mix of integrated and stand-alone teaching methods (Mason et al., 2009). Our research results reinforce these implications for Greek higher education and call for the integration of practicum or internship to the curricula, as work experience was found to differentiate acquisition of skills in students. CMS development interventions should acknowledge the richly textured lives of individuals, all of whom will have built up a range of CMS as part of their everyday experiences, e.g. part-time jobs, and summer job-experiences (Sultana, 2012). University students should be offered opportunities to gain and practice skills that are relevant both to all work fields (e.g. career self-efficacy, career adaptability, communication skills, problem-solving skills etc.) and to particular occupations (Borbély-Pecze & Hutchinson, 2014). Experiential activities (e.g. case studies, role playing) could stimulate students’ active participation in the learning process and provide stimuli for free expression and development of social skills (Sidiropoulou-Dimakakou, Argyropoulou, & Drosos, 2010b). Additionally, seminar-type workshops would be ideal to facilitate learning of job search techniques, resume preparation, utilization of professional social media etc.

Given the strong interrelationships found in our study among career adaptability, career resilience and career self-efficacy, it might be advisable to create programs that focus on the development of a sole skill, as this may foster many other relevant skills. Interventions building on the underlying resources of perceived self-efficacy beliefs in career and career adaptability could benefit university students. The Career Counseling Research and Assessment Center of the National and Kapodistrian University of Athens has developed a comprehensive program to enhance career adapt-abilities in university students (Argyropoulou, 2013; Sidiropoulou-Dimakakou, Argyropoulou, Mikedaki, & Tsakanika, 2013). Special emphasis is placed on how the individual can construct a future self-image by designing an action plan (Argyropoulou, 2013). The program consists of 7 one-hour sessions. In the first session a 15-minute-video is displayed, usually an excerpt of a film with career adaptability as a central issue. In each following session, the counselor presents a career adaptability resource and, then, participants work in teams in order to develop the corresponding skill through experiential activities.

Regarding future research, there is a need of conducting both concurrent and longitudinal studies to evaluate CMS impact on multiple career outcomes (e.g. work performance, balance between work and life roles, rates and quality of job placements). Relationships among career adaptability, perceived self-efficacy in career and career resilience should be further examined in order to comprehend

similarities or differences they have with each other. These 3 skills may reflect a meta-competence, which could serve as a powerful tool for designing future career interventions.

A major limitation of the study is the use of a sample derived only from a single university department. Indeed, this reduces the generalizability of the findings to other populations. However, this is a limitation we aim to address in the future by expanding the present research into many other departments of various fields of study. Another similar limitation relates to the fact that women far outnumber men in the sample. This was expected due to the fact that the Department of Philosophy, Pedagogy and Psychology traditionally consists of a high percentage of women. Another drawback that should be addressed in future research refers to the use of self-report questionnaires, which constitutes a potential bias of results. In future studies, it would be recommended that a mixture of self-report scales, reports of professors and other qualitative methods such as interviews are used in order to reduce potential errors.

All in all, the findings of this research contribute to: (a) pursuing active methods of working, (b) refining career counseling services and interventions in higher education by using them as a tool of empowerment, training and prevention, (c) supporting individuals to show a great deal of personal responsibility for managing career effectively.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Akkermans, J., Brenninkmeijer, V., Huibers, M., & Blonk, R. W. B. (2013). Competencies for the contemporary career: Development and preliminary validation of the Career Competencies Questionnaire. *Journal of Career Development, 40*(3), 245-267. doi: 10.1177/0894845312467501
- Argyropoulou, K. (2013). Η επαγγελματική προσαρμοστικότητα ως προϋπόθεση για μια σταδιοδρομία με νόημα [Career adaptability as a pre-condition of a meaningful career]. *Review of Counseling and Guidance, 102*, 26-35.
- Bandura, A. (1997). *Self-Efficacy: The exercise of control*. USA: Freeman & Company.
- Bimrose, J., Barnes, S.-A., & Hughes, D. (2008). *Adult career progression and advancement: A five year study of the effectiveness of guidance*. Coventry: Warwick Institute for Employment Research and the Department for Innovation, Universities and Skills.
- Bimrose, J., Brown, A., Barnes, S.-A., & Hughes, D. (2011). *The role of career adaptability in skills supply. Evidence report 35 (Main Report)*. Wath-upon-Deane: UK Commission for Employment and Skills. Retrieved from: <http://www.ukces.org.uk/assets/ukces/docs/publications/evidence-report-35-role-ofcareer-adaptability.pdf>
- Bimrose, J., & Hearne, L. (2012). Resilience and career adaptability: Qualitative studies of adult career counseling. *Journal of Vocational Behavior, 81*(3), 338-344. <http://dx.doi.org/10.1016/j.jvb.2012.08.002>
- Borbély-Pecze, T. B., & Hutchinson, J. (2014). *Work-based learning and lifelong guidance policies. ELGPN Concept Note No. 5*. European Lifelong Guidance Policy

- Network:University of Jyväskylä, Finnish Institute for Educational Research (FIER), Finland.
- Bridgstock, R. (2009). The graduate attributes we've overlooked: enhancing graduate employability through career management skills. *Higher Education Research & Development, 28*(1), 31-44. doi: 10.1080/07294360802444347
- Brown, A., Bimrose, J., Barnes, S.-A., & Hughes, D. (2012). The role of career adaptabilities for mid-career changers. *Journal of Vocational Behavior, 80*, 754-761. doi: 10.1016/j.jvb.2012.01.003
- Coetzee, M., & Harry, N. (2014). Emotional intelligence as a predictor of employees' career adaptability. *Journal of Vocational Behavior, 84*, 90-97.
- Creed, P. A., Fallon, T., & Hood, M. (2009). The relationship between career adaptability, person and situation variables, and career concerns in young adults. *Journal of Vocational Behavior, 74*, 219-229.
- Dennis, C., Smith, C., & Wadsworth, D. (2012). Developing and assessing transferable skills in Higher Education: a field trial and a way forward. *International Journal of Management and Marketing Academy, 2*(1), 1-25.
- Duffy, R. D. (2010). Sense of control and career adaptability among undergraduate students. *Journal of Career Assessment, 18*(4), 420-430. doi: 10.1177/1069072710374587
- European Lifelong Guidance Policy Network (2012). *ELGPN Tool No. 1. Lifelong Guidance Policy Development: A European resource kit.*
- Goodman, J. (1994). Career adaptability in adults: A construct whose time has come. *Career Development Quarterly, 43*(1), 74-85.
- Greenhaus, J., Callanan, G., & DiRenzo, M. (2008). A boundaryless perspective on careers. In J. Barling & C. L. Cooper (Eds.), *Sage Handbook of Organizational Behavior Vol. 1* (pp. 277-299). Thousand Oaks, CA: Sage.
- Johnston, C.-S., Luciano, E. C., Maggiori, C., Ruch, W., & Rossier, J. (2013). Validation of the German version of the Career Adapt-Abilities Scale and its orientations to happiness and work stress. *Journal of Vocational Behavior, 83*, 295-304.
- Kaliris, A., & Kriwas, S. (2014). The contribution of the postmodern approaches to career counseling theory and practice: Their emerging role in a crucial era for the world of work. Retrieved from <http://www.elesyp.gr/index.php/drastiriotites-2/58-the-contribution-of-the-postmodern-approaches-to-career-counseling-theory-and-practice-their-emerging-role-in-a-crucial-era-for-the-world-of-work>.
- Kaliris, A., & Sidiropoulou-Dimakakou, D. (2012, November). Πεποιθήσεις αυτοαποτελεσματικότητας και εξειδικευμένες δεξιότητες στελεχών ανθρώπινων πόρων και επαγγελματικών συμβούλων στις επιχειρήσεις. Ο έμμεσος ρόλος τους στην αντιμετώπιση της κρίσης [Self-efficacy beliefs and specialized competencies of human resources management executives and career counselors working in enterprises: Their indirect role in the confrontation of the crisis]. Paper presented at the 4th Panhellenic Conference of Counseling Psychology (1-4/11), Hellenic Psychological Association (ELPSE) – Counseling Psychology Sector, Aristotle University of Thessaloniki (AUT), Thessaloniki, Greece.
- Komarraju, M., Swanson, J., & Nadler, D. (2014). Increased career self-efficacy predicts college students' motivation, and course and major satisfaction. *Journal of Career Assessment, 22*, 420-432.
- Koen, J., Klehe, U. C., & Van Vianen, A. E. M. (2012). Training career adaptability to facilitate a successful school-to-work transition. *Journal of Vocational Behavior, 81*, 395-408.
- Kohn, P. M., O'Brien Wood, C., Pickering, D. I., & Decicco, T. L. (2003). The Personal Functioning Inventory: A reliable and valid measure of adaptiveness in coping. *Canadian Journal of Behavioural Science, 35*(2), 111-123.

- London, M. (1997). Overcoming career barriers: A model of cognitive and emotional processes for realistic appraisal and constructive coping. *Journal of Career Development, 24*(1), 25-38.
- Lo Presti, A. (2009). Snakes and ladders: Stressing the role of meta-competencies for post-modern careers. *International Journal of Educational and Vocational Guidance, 9*, 125-134. doi: 10.1007/s10775-009-9157-0
- Maggiore, C., Johnston, C.-S., Krings, F., Massoudi, K., & Rossier, J. (2013). The role of career adaptability and work conditions on general and professional well-being. *Journal of Vocational Behavior, 83*, 437-449. <http://dx.doi.org/10.1016/j.jvb.2013.07.001>
- Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes? *Education Economics, 17*(1), 1-30. doi: 10.1080/09645290802028315
- McIlveen, P. (2015). Psychotherapy, counseling, and career counseling. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA handbook of career intervention* (pp. 403-417). Washington, DC: APA Books.
- Meijers, F., Kuijpers, M., & Gundy, C. (2013). The relationship between career competencies, career identity, motivation and quality of choice. *International Journal for Educational and Vocational Guidance, 13*, 47-66. doi: 10.1007/s10775-012-9237-4
- Mikedaki, K. (2015). *Career adaptability inventory. Psychometric characteristics and relationship with self-esteem of Greek students* (Unpublished master's thesis). Department of Psychology, Faculty of Philosophy, Pedagogy and Psychology, National and Kapodistrian University of Athens, Athens, Greece.
- Mylonas, K. & Furnham, A. (2014). Bias in Terms of Culture and a Method for Reducing It: An Eight-Country "Explanations of Unemployment Scale" Study. *Educational and Psychological Measurement, 74*(1), 77-96. doi: 10.1177/0013164413502669
- Rossier, J., Zecca, G., Stauffer, S. D., Maggiore, C., & Dauwalder, J-P. (2012). Career Adapt-Abilities Scale in a French-speaking Swiss sample: Psychometric properties and relationships to personality and work engagement. *Journal of Vocational Behavior, 80*, 734-743.
- Roussos, P., & Efstathiou, G. (2008). *Σύντομο εγχειρίδιο για το SPSS 16.0 [Short Manual for the SPSS 16.0]*. Psychology Program, Faculty of Philosophy, Pedagogy and Psychology, University of Athens, Athens, Greece.
- Sarafidou, G.-O. (2011). *Συνάρθρωση ποσοτικών και ποιοτικών προσεγγίσεων: Η εμπειρική έρευνα [Conjunction of quantitative and qualitative approaches: The empirical research]*. Athens: Gutenberg - George & Kostas Dardanos.
- Savickas, M. L. (2013). Career construction theory and practice. In R. W. Lent & S. D. Brown (Eds.), *Career development and counseling: Putting theory and research to work*. Hoboken (2nd ed., pp. 144-180). New Jersey: John Wiley & Sons Inc.
- Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior, 80*, 661-673. doi: 10.1016/j.jvb.2012.01.011
- Sidiropoulou-Dimakakou, D., Argyropoulou, K., & Drosos, N. (2010a). Ανάπτυξη δεξιοτήτων «προσωπικής ευελιξίας», μια νέα οπτική στον επαγγελματικό προσανατολισμό: Δράσεις του Κέντρου Έρευνας και Αξιολόγησης στην Επαγγελματική Συμβουλευτική του Πανεπιστημίου Αθηνών [Development of personal flexibility skills, a new perspective in career guidance: Activities of the Center for Research and Assessment in Career Counseling of the University of Athens]. *Review of Counseling and Guidance, 94-95*, 227-233.
- Sidiropoulou-Dimakakou, D., Argyropoulou, K., & Drosos, N. (2010b). Η εκπαίδευση των στελεχών που εργάζονται στα γραφεία διασύνδεσης των Σχολείων Τεχνολογικής Επαγγελματικής Εκπαίδευσης στον σχολικό επαγγελματικό

- προσανατολισμό [Training of executives working at the liaison offices of the Technological Vocational Schools in school career guidance]. In R. Kalouri, N. Kimoulakis, G. Pagiatakis, S. Panetsos, & G. Tsakirakis (Eds.). *Education of the teachers working at the Secondary Vocational and Technological Education in Greece* (pp.633-641) . Athens: ASPAITE.
- Sidiropoulou-Dimakakou, D., Argyropoulou, K., & Drosos, N. (2013). *Ανάπτυξη δεξιοτήτων δια βίου διαχείρισης σταδιοδρομίας: Θεωρητικό υπόβαθρο [Development of lifelong career management skills: Theoretical Background]*. Athens: National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP).
- Sidiropoulou-Dimakakou, D., Argyropoulou, Ek., Drosos, N., Kaliris, A., & Mikedaki, K. (2014, November). *Ανάπτυξη δεξιοτήτων διαχείρισης σταδιοδρομίας στην Τριτοβάθμια Εκπαίδευση: Επαναπροσδιορίζοντας το ρόλο της επαγγελματικής συμβουλευτικής σε θεωρητικό και πρακτικό επίπεδο [Developing career management skills in Higher Education: Reconsidering the role of career counseling at theoretical and practical level]*. Paper presented at the 5th Panhellenic Conference of Counseling Psychology (6-9/11). Hellenic Psychological Association (ELPSE)-Counseling Psychology Sector – Department of Primary Education and Department of Early Childhood Education, University of Patras – Laboratory of Educational Psychology, Counseling & Research, Department of Primary Education, University of Ioannina. University Campus, Patras.
- Sidiropoulou-Dimakakou, D., Argyropoulou, K., Mikedaki, K., & Tsakanika, R. (2013, September). *Leaving job stability behind and moving towards career adaptability. A career guidance program for a successful future career*. Poster presented at the IAEVG international conference: Career counseling: a human or a citizen's right?. International Association for Educational and Vocational Guidance (IAEVG), Montpellier (24-27/9).
- Sidiropoulou-Dimakakou, D., Mylonas, K., & Argyropoulou, K. (2012, October). *Perceived Self-Efficacy in Career: A new scientific and research approach in career guidance and counseling for sustainable employment*. Poster presented at the IAEVG international conference: Career guidance for social justice, prosperity and sustainable employment – Challenges for the 21st century. International Association for Educational and Vocational Guidance (IAEVG), Manheim (3-5/10).
- Sidiropoulou-Dimakakou, D., Mylonas, K., & Argyropoulou, K. (2015). Self-efficacy in career planning: a new approach to career exploration. *International Journal of Learning, Teaching and Educational Research*, 11(2), 40-54.
- Soresi, S., Nota, L., & Ferrari, L. (2012). Career Adapt-Abilities Scale-Italian form: Psychometric properties and relationships to breadth of interests, quality of life, and perceived barriers. *Journal of Vocational Behavior*, 80, 705-711.
- Straby, R. (2010). *The Career Resilience Self-Assessment*. Available at <http://www.slideshare.net/rstraby/career-resilience-self-assessment>.
- Sultana, R. (2012). Learning career management skills in Europe: a critical review. *Journal of Education and Work*, 25(2), 225-248. doi: 10.1080/13639080.2010.547846
- Sung, Y., Turner, S. L., & Kaewchinda, M. (2013). Career development skills, outcomes, and hope among college students. *Journal of Career Development*, 40(2), 127-145. doi: 10.1177/0894845311431939
- Tolentino, L. R., Garcia, P. R. J. M., Lu, V. N., Restubog, S. L. D., Bordia, P., Plewa, C. (2014). Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism. *Journal of Vocational Behavior*, 84, 39-48.
- Tran, T. T. (2013). Limitation on the development of skills in higher education in Vietnam. *Higher Education*, 65, 631-644. doi: 10.1007/s10734-012-9567-7

- Wilkins, K. G., Santilli, S., Ferrari, L., Nota, L., Tracey, T. J. G., Soresi, S. (2014). The relationship among positive emotional dispositions, career adaptability, and satisfaction in Italian high school students. *Journal of Vocational Behavior*, 85, 329-338.
- Zacher, H. (2014a). Career adaptability predicts subjective career success above and beyond personality traits and core self-evaluations. *Journal of Vocational Behavior*, 84, 21-30.