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Self-Efficacy in Career Planning: A New Approach to Career Exploration

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Abstract. Through two consecutive studies we attempted to explore the beliefs of personal efficacy in respect to one's career and in relation to the continuously evolving patterns in career planning as these issues seem to have consequences to theory and research of career counselling as well as to the use of psychometric tools. We aimed at developing a research framework for assessing career self-efficacy for use in counselling services. In Study 1, a model describing six theoretically driven beliefs was psychometrically tested, arriving at a 21-item Perceived Self-Efficacy in Career Scale (PSECS); in this study, mainly item analysis and exploratory factor analysis methods were applied to Greek adults' data (N=126). In Study 2 we subjected the PSECS to confirmatory analysis testing on Greek high-school students' data (N=276). All analyses supported four dimensions, namely Career Management, Career Skills, Flexibility at Work, and Creativity at Work. The PSECS may offer an additional perspective for counselling about the way individuals evaluate their skills in order to effectively manage related career issues. Moreover, the scale may theoretically contribute and aid research in career counselling with respect to how people plan and adjust their careers within a changing economic landscape.

Keywords: Perceived career self-efficacy; Career skills; Item-analysis methods; Convergent validity; Confirmatory Factor Analysis

Introduction

Significant changes have been taking place in several areas of human activity and in the nature of career over the last few decades. Societal and environmental changes, such as financial crises, technological advancements and labour market changes have increased workforce diversity and have altered traditional work contexts, creating changes in how individuals manage and construct their career. In this paper, we consider *career* as a range of working aspects and other relevant

experience shaping a unique path through individual's life including jobs, occupations, professions, employers, and industries, as well as individuals' perceptions of career events, career alternatives, and outcomes or individuals' adaptation to multiple roles and transitions (Herr & Cramer & Niles, 2004; Sidiropoulou-Dimakakou, 2006). An individual's career is influenced by numerous contextual factors such as national culture, economy, the political environment, as well as by personal variables which play an important role, such as relationships with others (Greenhaus, Callanan, & DiRenzo, 2008). In Greece additional contextual factors may influence career (e.g., military service, educational system).

Changing labour markets, obligations to others, shifts in job (Mylonas & Furnham, 2014) along with life roles, all make career and work quite challenging tasks. Nowadays, the urgent need to find occupational meaning and connection may be getting stronger across the life span (Bloch, 2005; Plimmer, 2012). At the same time, management scholars claim that the concept of career has largely lost its traditional features related to the notions of linearity and predictability and we are heading towards new forms of careers that are often attributed to the term "boundaryless" (Arthur, Khapova & Wilderom, 2005), "protean" (Hall, 1996), "customized" (Benko & Weisberg, 2007), "kaleidoscope" (Sullivan & Mainiero, 2008), "dual" (Gari & Mylonas, 2006), and "portfolio" (Handy, 1998). The new career conceptualization is challenging in its nature (i.e., employment and economic insecurity, psychosocial difficulties, multiple transitions within a job/across vocations, new forms of work, and lifelong vocational education and training) and requires complicated judgments about the self and the world.

All these issues seem to have consequences to theory and research of career counselling as well as to the use of psychometric tools. Therefore a question arises: *How can career counsellors manage social developments, and how can they respond to the demands of their clients and support them to reflect on their future and find convenient solutions to their problems?* Career counselling practitioners may need to develop new scientific approaches and modify the existing theoretical concepts to meet current needs (Sidiropoulou-Dimakakou, Argyropoulou, & Drosos, 2013), thus they need to a) support the emergence of new concepts, which are viewed as being more appropriate to satisfy new demands and challenges, and b) support the development of new tools that will meet the needs and expectations of their clients.

Perceived self-efficacy in career planning

The reviewed literature demonstrates that Bandura's (1982) self-efficacy concept has inspired vocational research and practice (Betz & Hackett, 2006). In particular, the concept of self-efficacy in career planning refers to the individual's belief in terms of his/her ability to implement the appropriate actions required to effectively manage occupational roles and career issues. Therefore, the construct of self efficacy reflects a dynamic process rather than a simple match of personal and job characteristics (Lawler, 1994). Employees of high perceived efficacy are likely to perform occupational roles innovatively, whereas those of low perceived efficacy are prone to process occupational

duties conventionally with little personal embellishment (Gregersen, Vincent-Höpe & Nienhaus, 2014).

For the reasons mentioned up to this point, people experience a high rate of change either within or across vocations over the full course of their working lives. To come through, people must be in charge of their own self-development. Thus, occupational transition can be moderated by the perceived sense of efficacy (Audia, 1995; Bandura, 1997), and this also relates to skill development and competency levels with respect to new occupational roles.

Nauta et al. (2010) stressed the importance of exercising control over various complicated career situations, such as the explanation of employability orientation, turnover intention, and employee motivation. Jobs vary in their degree of clarity about the roles employees are expected to play and how their role performance is evaluated. Thus, employees of high sense of efficacy exhibit marked gains in performance, whereas those of low perceived efficacy improve only slightly (Bandura, 1997; Stajkovic & Luthans, 1998).

Experimental analyses reveal that perceived efficacy is a major mechanism through which goals affect motivation and performance, as individuals with high self-efficacy beliefs tend to be highly devoted towards the achievement of their career goals (Latham, Locke & Edwin, 2002; Locke & Latham, 1990). Substandard performance diminishes effort in those who doubt their capabilities but lead self-assured individuals to strengthen their efforts towards success. Consequently, they expect positive outcomes from their efforts to perform better in their work and enable themselves to work flexibly on multiple research projects at the same time (Vrugt & Koenis, 2002). According to Parker, Williams, & Turner (2006) individuals who are flexible in role orientation tend to face difficulties as challenges and adopt proactive problem solving behavior and pursue improvement within various complicated-hard tasks and situations. Additionally, they exhibit a higher sense of personal responsibility in achieving their career goals, gaining this way a sense of accomplishment.

Taking into account a) the theoretical background of self-efficacy in mastery and in enactment of occupational roles, b) the rapid social and economic changes, which create new challenges in careers and c) a short number of pilot interviews with career counsellors, the present article describes a new career guidance research approach through the "Perceived Self Efficacy in Career Scale". Through this scale, we have attempted to develop a framework for assessing self-efficacy in career planning for further use in counselling services. Our scale examines the beliefs one forms with respect to his/her ability to effectively manage various career issues that is the self-appraisal of the skills that a person activates so as to fulfill a variety of requirements and functions related to career.

Study 1

This first study aimed at the development and initial testing of the Perceived Self Efficacy in Career Scale (PSECS).

1. Method

PSECS was developed on the basis of the following six theoretical dimensions: (a) *Psychological Resilience:* refers to one's ability to cope with change even when circumstances are discouraging or disruptive (Bimrose, & Hearne, 2012), (b) *Work performance*: reflects a person's confidence and performance capability at work along with the sense of accomplishment he/she can gain from it (Waldman, 1994), (c) *Social awareness*: the level to which one actively responds to society demands (Goleman, 2001), (d) *Personal skills of flexibility*: as reflected in the skills developed by being actively interested in a career; this is not restricted only to employment but also includes learning (Sidiropoulou, Argyropoulou & Drosos, 2010), (e) *Social support network*: reflects how efficient one is in receiving career support by his/her social network (Thoits, 1982), (f) *Action plan*: highlights people's beliefs in their efficacy to determine the goals they adopt and the strength of their commitment to them (Nathan & Hill, 2006), (g) *Ability of adaptation to transition*: the individual's readiness to respond to changes in work roles and to career transitions (Savickas, 1997).

The authors generated 39 novel items reflecting the aforementioned theoretical perspectives and operational definitions from the literature and through a small number of exploratory interviews with the intent to expand content coverage and create more specific scales. Psychometric methods described in detail in the results section were employed in our attempt to arrive into a shorter and consistent set of items.

Participants

The first study was conducted during March and April 2012. The participants were 126 employed (63%) and unemployed (34%) adults, including 23 Second Chance Schools students (schools for adults who have not finished basic education), and 46 postgraduate students. The sample included 36 male and 90 female participants; their average age was 32 years. These participants responded to the 39-item scale by indicating the extent to which they agreed or disagreed with each statement using a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

2. Results

Using item-analysis methods (including exploratory factor analysis, item-scale correlations, convergent validity testing, and internal-consistency computation), we iteratively deleted 18 items due to redundancies and limited relation to the proposed construct. The procedure is explained hereon in more detail.

An initial item analysis was conducted to eliminate those with extremely low (<1.0) or high means (>4.2), and items with low item-total correlations (<.40) within each respective proposed scale. Item-total correlation indices and descriptive statistics such as kurtosis and multivariate outliers were estimated for each of the 39 items and on the basis of extreme skewness and/or other statistical assumptions violation, eight items were removed and 31 items were subjected to the next stage of analysis. In order to explore the underlying dimensions of Perceived Self Efficacy in Career the structure of the questionnaire was calculated through Principal Component Analysis. Oblique (instead of

orthogonal) rotation was used as the preferred rotation method, since the dimensions which were initially produced through orthogonal rotation of the axes resulted in moderately correlated factors. We initially imposed no restrictions and five dimensions emerged with a number of cross-loadings masking the dimension's identity. Based on the communality indices and on the reproduced correlation matrix, both indicating the items with the largest metric discrepancies, we progressively deleted six and then four more items, reaching a pool of 21 items which was subjected to Principal Component Analysis afresh.

An oblique rotation was again calculated for the reasons mentioned earlier. A four-factor solution, accounting for approximately 58% of the total variance was found and satisfied all psychometric and theoretical criteria set up to this point (Table 1). The first factor, *Career management* represents the individual's ability to cope adequately with career issues of practical and/or emotional nature. This factor consists of five items and accounts for 37.8% of the total variance. The second factor, *Career skills*, comprises six items that mainly have to do with the development of skills of organization and performance at work especially when working under harsh situations (7.83% of the total variance is explained by this factor). The third factor, *Flexibility at work*, highlights the ability of adaptation to transition, and/or represents the individual' ability to respond to the changes occurring in the work place; the factor is formed by four items and accounts for 6.88% of the total variance. The fourth factor, *Creativity at work*, represents the development of skills related to the active interest in career through creativity, ingenuity and PR skills. This factor (four items) accounts for 5.69% of the total variance. Based on this analysis, and although two items did not load on any of the factors, no further items were excluded as further deletion of items would start having an effect on the overall scale validity. The means, standard deviations, Cronbach's α internal-consistency reliabilities and correlation estimates across factors for the final 21-item version of the PSECS are presented in Table 1.

Table 1. Principal Component Analysis for the Perceived Self Efficacy in Career Questionnaire (Study 1 sample)

	Percent of variance explained				
Oblique rotation, 21 items, N=126	**37.8**	**7.83**	**6.88**	**5.69**	**Σ=58.2**
	F1	**F2**	**F3**	**F4**	**h^2**
Q1 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	**0.92**	0.07	-0.05	-0.03	0.77
Q6 Even when things are difficult in my career, I can find alternative solutions and do quite well	**0.68**	-0.21	-0.11	0.13	0.57
Q7 Even when conditions are very difficult, I can achieve my goals	**0.66**	-0.17	-0.03	0.08	0.64
Q22 In general, I can find ways to face practical and emotional consequences created by the economic and social crisis in my country	**0.46**	-0.33	0.30	-0.08	0.49
Q29 I think I know how to go about in order to fulfil my goals	**0.40**	0.29	0.35	0.23	0.61
Q19 I believe I can efficiently find the necessary connections in order to achieve my career expectations	0.36	0.10	0.32	0.26	0.47
Q9 In comparison to others, I can produce error-free work swiftly	-0.04	**-0.82**	-0.09	0.03	0.64
Q10 Even when I face difficulties while performing work-tasks, I can think of ways to overcome them and become more efficient	0.17	**-0.73**	0.02	0.01	0.65
Q11 In general, I can think of alternative ways to better organize my work and become more efficient	-0.04	**-0.72**	0.14	0.17	0.70
Q21 When facing difficult work-tasks, I am confident I can accomplish them	0.00	**-0.45**	0.10	0.32	0.47
Q25 I can resolve most problems provided I activate the necessary levels of responsibility and effort	0.13	**-0.44**	0.30	0.02	0.46
Q5 I believe I can handle negative emotions (e.g. anger, frustration, self-pity), which hinder my career	0.27	**-0.41**	0.10	0.05	0.40
Q34 Even when duties in my job change, I am able to perform efficiently	-0.21	-0.18	**0.87**	-0.05	0.74
Q33 In comparison to others, I can efficiently change work-places	-0.04	0.09	**0.82**	0.11	0.68
Q31 I believe I can materialize my plans by taking the appropriate steps in order to achieve an important career goal	0.34	-0.05	**0.52**	-0.03	0.52
Q28 I think I can efficiently manage both my workload and my leisure time, if I give it the necessary effort	0.07	-0.30	**0.43**	0.17	0.53
Q32 I find it easy to remain focused to my goals and make my plans come true	0.32	-0.08	0.34	0.05	0.37
Q16 Thanks to my resourcefulness, I know how to handle unexpected events in my work (e.g. difficulties in relationships with colleagues, prejudice due to iscrimination in the labor market, personal and professional needs conflict)	0.00	0.08	-0.11	**0.91**	0.74
Q27 Thanks to my resourcefulness, I know how to deal with unexpected situations in my work	-0.12	-0.13	0.10	**0.81**	0.74
Q23 In comparison to others, I can express my creativity successfully (e.g. through an innovation, the development of an idea, the implementation of a project, or product planning)	0.02	-0.07	0.06	**0.63**	0.48
Q13 In comparison to others, in my work-place I can efficiently handle any intentional or unintentional discrimination action against me, thanks to my PR skills	0.35	-0.15	-0.11	**0.47**	0.53
Key: F1= Career Management, F2= Career Skills, F3= Flexibility at work, F4= Creativity at work — ***Internal consistency (Cronbach's α) estimates***	***.79***	***.81***	***.74***	***.76***	
Means (N=126)	3.51	3.75	3.66	3.61	
(all four distributions followed the Normal distribution with K-S z non-significant) — Standard deviations (N=126)	.60	.60	.67	.65	

Note: Correlation estimates between factors: *F1-F2*: -.30, *F1-F3*: .36, *F1-F4*: .45, *F2-F3*: -.31, *F2-F4*: -.35, and *F3-F4*: .36

Dimension scores across sample subgroups

We carried out a series of analyses of variance comparing across educational levels and across occupation status for each of the four PSECS dimensions. These analyses revealed mean score differences for the Career Skills and Flexibility at work dimensions, where students from Second Chance Schools scored lower in Career Skills and the unemployed scored lower in Career Skills and Flexibility (Figure 1). None of the factors of the PSECS was associated with gender.

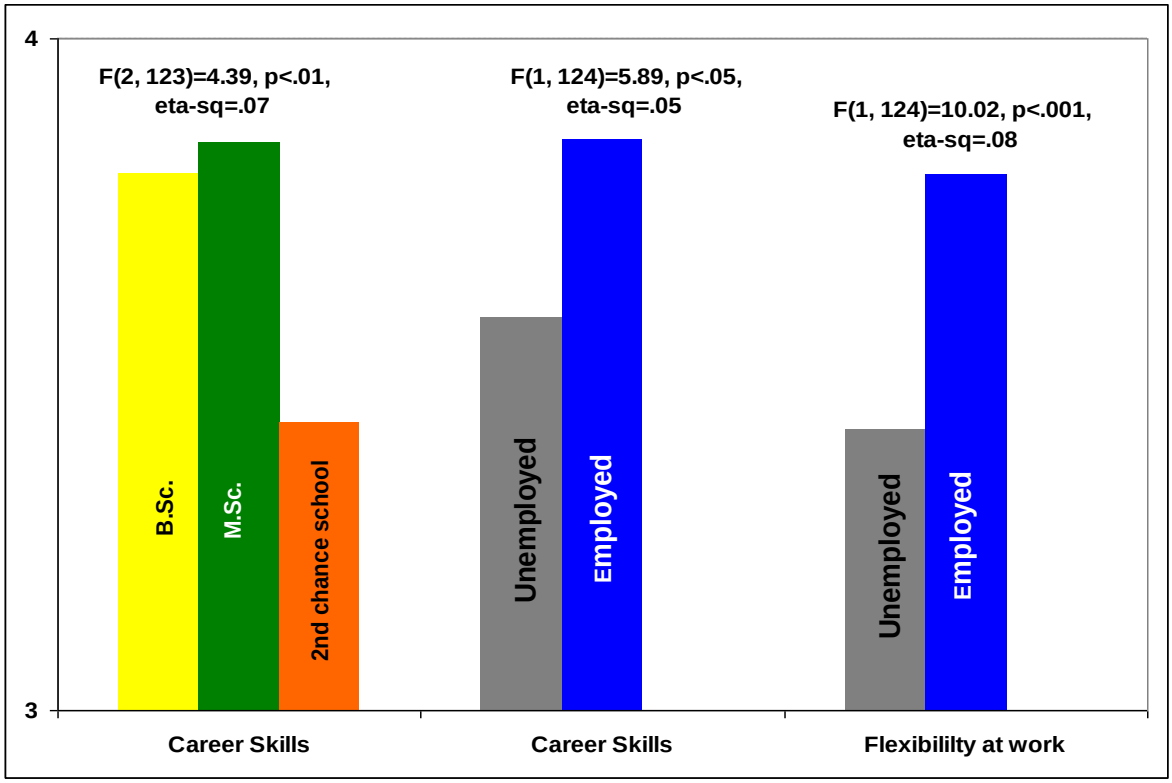

Figure 1. Analysis of variance results across the three educational and the two occupational groups (significant results only).

Concluding this first study, the results show that PSECS and its dimensions provide a reliable assessment tool for the self-appraisal of an individuals' self-efficacy in career. However, this was just the first step towards the finalization of the scale. In Study 2 we proceeded to a second, hypothesis-testing step by attempting to confirm the four PSECS dimensions through confirmatory factor analysis modelling in a different sample.

Study 2–Confirmatory factor analysis of PSECS

The goal in Study 2 was to test the dimensional structure of the PSECS using confirmatory factor analysis methods in an educational setting (high school students and teachers).

1. Method

Participants

We collected our data from high school students and teachers from the Prefecture of Attica (mainly Athens and Piraeus) during March and April 2013. The high school students were 276 and their average age was 16.43 years (sd=1.36). Approximately 40% were males and 60% were females. The participating teachers (of all education levels and from the prefecture of Attica) were 141 with a mean age of 44.44 years (sd=9.16). With respect to gender, 37.6%

were males and 62.4% were females. Their average years of teaching were 16.63 (sd=8.23) and approximately 25% of them had received postgraduate education.

Instruments

The 21-item PSECS version as reached via Study 1 was employed for this second hypothesis-testing study. A demographic questionnaire was also employed to collect the data on the participants' gender, educational status, age, teaching years, educational and occupational decisions among other personal information. Finally, *Generalized Self-Efficacy* data were also collected using the New General Self-Efficacy Scale (NGSE, Chen et al., 2001) which consists of 8 items (e.g., I will be able to successfully overcome many challenges), as adapted for the Greek population (Sidiropoulou-Dimakakou, Mylonas, Argyropoulou & Tampouri, 2012). Individuals were asked to rate items on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). The final score is the sum of responses for each participant. According to the authors of the original scale, construct validity and reliability are satisfactory, and the scale has implications for research in organizational settings (Chen et al., 2004). For the current data, the NGSE internal consistency levels (Cronbach's α) reached .83 with its PCA structure being unidimensional (Chen et al. 2001).

Procedure

Participants filled-in the questionnaires during a regular class period. Prior to administering the instruments, students were advised that their responses would be anonymous and would be used for research purposes only. Standard written instructions were provided with each instrument, and oral clarification of the instruments was provided upon request. The procedure remained anonymous throughout all research stages.

2. Results

Confirmatory factor analysis

We computed confirmatory factor solutions for three models, a null model with all parameters uncorrelated, a unifactorial model and, a four-factor model specifying factors as they had emerged in Study 1. For each model, the statistical criteria evaluated were the Least Squares Chi-square criterion and its statistical significance, the χ^2 over *df* ratio, the Root Mean Square Error of Approximation (*RMSEA*) and its confidence limits, the Root Mean Square Residual (*RMR*), along with the Goodness of Fit Index (*GFI*), the Adjusted Goodness of Fit Index (*AGFI*), the Comparative Fit Index (*CFI*), and to compare across models where applicable, the difference between the Chi-square criteria ($\Delta\chi^2$) and the statistical significance of this difference along with the Tucker-Lewis Index (*TLI*) for model improvement as compared to the null model. The uncorrelated-independence model was easily rejected, with goodness of fit indices not exceeding .35 (Table 2).

Table 2. Confirmatory Factor Analysis results

Criteria	Null model	Unifactorial model	Four-Factor model
χ^2	3,029.20	469.58	415.41
df	210	180	174
p	< .001	< .001	< .001
χ^2/df	14.42	2.61	2.38
RMSEA [*CI* 90%]	.31 [.30, .32]	.063 [.056, .070]	.058 [.051, .065]
RMR	.30	.047	.045
GFI	.34	.90	.91
AGFI	.27	.87	.88
CFI	.00	.91	.93
$\Delta\chi^2$	-	2,559.62	44.27
Δdf	-	30	6
p	-	< .001	< .001
TLI	-	.88 *	.90 *

* as compared to the null model.

The outcomes for the unifactorial model were satisfactory but the four-factor model showed a much better fit to the data while both models showed significant improvement in respect to the null model. Although a unifactorial solution might be considered more parsimonious, the Parsimony Goodness of Fit Indices (*PGFI*) were lower than acceptable levels for both models (<.90) but $\Delta\chi^2$ for the four-factor model was statistically significant suggesting improvement in comparison to the unifactorial one. The estimated loadings for the final solution computed through this four-factor model are provided in Table 3.

Table 3. Standardized solution and item loadings for each factor through confirmatory factor analysis (four-factor model)

Items	Factor	Loadings
Q1	Career Management	.70
Q6	Career Management	.62
Q7	Career Management	.72
Q22	Career Management	.55
Q29	Career Management	.62
Q19	Career Skills	.58
Q9	Career Skills	.58
Q10	Career Skills	.63
Q11	Career Skills	.66
Q21	Career Skills	.52
Q25	Career Skills	.48
Q5	Career Skills	.61
Q34	Flexibility at work	.58
Q33	Flexibility at work	.54
Q31	Flexibility at work	.55
Q28	Flexibility at work	.56
Q32	Creativity at work	.51
Q16	Creativity at work	.61

Q27	Creativity at work	.68
Q23	Creativity at work	.65
Q13	Creativity at work	.66

Our CFA models revealed the expected pattern of the four factors in our data and confirmed the four dimensions as these were theoretically described and as they emerged during Study 1.

Reliability, convergent validity and group differences

For the final four factors reliability estimates (Cronbach's α) were computed and all reached satisfactory levels (.77, .79. .71, and .78 for factors 1 to 4 respectively). The correlation of each factor with Generalized Self-Efficacy reached high levels (.61, .67, .57, and .60 for factors 1 to 4 respectively), so convergent validity was generally supported. Several models of analysis of variance were computed to estimate the relations between the four PSECS factors with gender, educational group (students, teachers), students' decision status with respect to occupation (decided or not), teacher's degree levels (B.Sc. vs. M.Sc. & Ph.D.) and other variables. Statistically significant differences were observed across the two genders and across the two educational groups, but the η^2 indices were very low (below .03). However, across the two groups of students with respect to their career "decision" status, the students who reported having focused on a specific career also reported higher expectations about their future work creativity (Mn=3.61, sd=.63) than the students who have no concrete sense of their future career (Mn=3.26, sd=.77) (F 1, 272 = 16.08, $p < .001$, $\eta^2 = .06$).

Finally, for the teacher sample only, three statistically significant differences across their degree levels were observed, namely for the Flexibility at Work factor, the Creativity at Work factor, and to a lesser extent for the Career Skills factor. Specifically, for the Flexibility at Work factor the B.Sc. teachers reported the lowest score (Mn=3.55, sd=.73) in contrast to the higher Degree teachers (Mn=3.92, sd=.65); for this comparison, F 1, 139 = 7.47, $p < .01$, $\eta^2 = .05$. For the Creativity at Work factor the B.Sc. teachers reported the lowest score (Mn=3.44, sd=.82) in contrast to the higher Degree teachers (Mn=3.85, sd=.71); for this comparison, F 1, 138 = 7.4, $p < .01$, $\eta^2 = .05$. For the Career Skills factor the differences were less strong ($\eta^2 = .04$) but still significant (F 1, 139 = 6.14, $p < .05$) with the B.Sc. teachers reporting the lowest score (Mn=3.45, sd=.65) in contrast to the higher Degree teachers (Mn=3.95, sd=.52).

In brief, through these analyses, it became evident that the four PSECS factors a) present good internal consistency, b) converge in meaning with Generalized Self-Efficacy –a finding indicating good validity levels, and c) can depict interpretable group differences, wherever a relation with demographic and other population characteristics exists.

Discussion

The goal of the present research was to explore the beliefs of personal efficacy in respect to one's career (evaluations of skills a person engages in order to fulfill a variety of career-related functions and requirements). The model describing

these beliefs was derived following systematic psychometric testing for sequential solutions on progressively smaller sets of items. By arriving at the 21-item PSECS through Study 1 and its item analysis methods, we then subjected the PSECS to confirmatory analysis testing. The exploratory and confirmatory factor analyses supported four dimensions which are indeed distinct, even though they are not independent. In our models, a first strong factor is followed by three less strong factors with respect to percentage of accounted variance. The first factor is indeed a core dimension but does not support a unidimensional structure as was evident through CFA as well.

Based on Study 1 findings, Career Skills factor is negatively correlated with all other three factors, so the adult respondents (employed and unemployed) seem to contradistinguish these career characteristics to Career Management and mostly to Flexibility at Work and Creativity at Work, with these three factors being positively correlated to each other. This may be an indication for a second-order factor structure but this question is beyond the aims of the current paper. This finding though seems to indicate that career skills are a relatively stable personality trait not directly dependent to other self-efficacy factors affecting career planning, but being linked to previous successful and failed career experience.

Some further psychometric evidence concerns discriminant validity levels as we observed statistically significant differences (although η^2 indices do not allow for psychological interpretations) between the students who reported a clearer focus on a specific career and those who did not for three of the four PSECS factors. Although the differences are small, they are indicative of the scale's discriminative properties across differential groups. The reliability indices in both studies are also indicative of the limited measurement errors and this corroborates to the discriminative power of the four factors present in PSECS. Brief discussions on convergent validity and the differences across groups follow.

For the PSECS *relation with generalized self-efficacy*, according to the outcomes of our studies, the correlations of the four PSECS factors with the Generalized Self-Efficacy Scale reached high levels. This concurs with self-efficacy theory supporting an internal-dependency relation linking the sense of self-efficacy with respect to a specific behavior and the generalized sense of self-efficacy; this relation reflects the link between a person's self-appraisal for work-ability levels with the person's overall self-confidence levels regarding his/her ability to fulfill a number of tasks (Bandura, 1997). The higher a person's perception about his/her own ability in fulfilling a variety of tasks, the higher the perceived self-efficacy in career planning he/she develops. Generalized self-efficacy is in fact largely related to previous experience and evolves as a personality trait across the life-span as success and failure accumulate (Chen et al., 2001; Shelton, 1990).

With respect to *gender differences*, only weak differences were found on the factors of the Perceived Self Efficacy in Career questionnaire. This indicates that although self-efficacy has been suggested as an important occupational choice

predictor, it may not influence male and female subsequent careers differently. These findings are consistent with previous research (e.g. Bush, 1995; Chung, 2002; Mathieu et al., 1993) suggesting that gender differences in career self-efficacy found by Betz & Hackett (1986) may not be generalizable. This finding is in accordance with self-efficacy's stability as a personality trait, a trait not depending on demographic factors, but being a grid of all previous success and failure experience, including that within occupation (Kaliris, Sidiropoulou-Dimakakou, Argyropoulou & Fakiolas, 2013).

When *directions of study groups (arts, science, and technology) were compared*, no significant differences were found although we might expect such differences. This result seems to indicate that students of the sample (Study 2) do not relate the educational paths they may choose to their career planning. They seem to rely more on their own personality characteristics (i.e., Generalized Self-Efficacy) to describe their perceived future Career Self-Efficacy facets. Finally, with respect to *educational-level differences* (B.Sc. vs. higher Degree), for the teacher sample, statistically significant differences were observed across their degree levels, for the Flexibility at Work factor, the Creativity at Work factor, and to a lesser extent for the Career Skills factor. This finding suggests that the teachers' educational level has an important effect on achieving self-efficacy in career skills as it may spark more profound knowledge, behavior and value processing (Kozina et al., 2010) possibly leading to a better career planning and management.

Limitations

Several limitations of the current studies should be considered. Results of the present investigation should not be generalized beyond the populations studied (students and educators). In the future, establishing norms for specialized settings and age groups may prove useful to counsellors. We also believe that future research needs to cross-examine the current factor structure through CFA designs for other groups as well. As the PSECS addresses content especially relevant to beliefs of personal efficacy in respect to one's career, more research on other populations is warranted (e.g., high school to postsecondary, school to work, midcareer change, long-term unemployed and retirement). Finally, another challenge for future research would be to further explore the relations of an individual's perceived self-efficacy in career selection with a network other self-efficacy and personality variables.

Implications

We believe that this measure offers an additional perspective for counselling practice on the way individuals evaluate their skills in order to manage effectively career-related issues. Moreover, this scale aims to contribute to career counselling theory and research concerning how people combine cognitive, social and behavioral skills in order to plan and adjust their career within a changing economic landscape. Additionally, researchers and practitioners could be better informed on career development needs and resources to aid individuals navigate through career changes during the current complex era.

If career counselling is viewed as counselling in selecting a career, one of the main roles of counsellors would be to guide the client to explore their career situation and subsequently to develop the necessary skills in order to fulfill a variety of career-related issues. Any assessment based on the four PSECS factors should allow clients to make more accurate self-appraisals so as to deal with the development of their essential career skills, thus facilitating their own careers. This interactive procedure involves helping individuals and counsellors select tools that are tailored to investigate career paths and also help counsellors to increase their intervention effectiveness. Having assessed the four skills levels, counsellors can employ methods to train individuals towards skills enhancement by a) developing career adaptability by encouraging individuals' responsibility for their own career development, b) asking individuals to tell their career stories and manage career experience, c) guiding skill perfection in role playing scenarios, d) teaching individuals using exploratory strategies to find reemployment, e) improvement of career skills through mentoring/coaching.

Declaration of Conflicting Interests

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