Generalized Self-Efficacy, Coping, Career Indecision, and Vocational Choices of Senior High School Students in Greece

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Implications for Career Guidance Practitioners

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The main purpose of this study is to examine the dimensions of career indecision among a sample of Greek high school students (N = 848) and to classify the students of the sample in regard to their career decision status. A second objective is the investigation of the relationship between career decision status groups and generalized self-efficacy, coping strategies, and vocational interests. The results suggest that four factors contribute to career indecision: absence of structure, need for career guidance, diffusion of interests, and personal conflict. The clustering procedure indicates that the students of the sample could be classified in three career indecision cluster groups: decided, exploring possibilities, and undecided. These cluster groups differ in all four career indecision factors, generalized self-efficacy, coping strategies, and vocational interests. Results are discussed in terms of a career counseling framework.

Keywords: career counseling; career decision status; career indecision; career indecision cluster groups; coping; self-efficacy; vocational interests

In recent years, career indecision has become an increasingly important construct in the field of vocational psychology (Kelly & Lee, 2002). The first relevant studies were conducted in the 1960s and demonstrated the distinction between *indecision* and *indecisiveness*. This has changed in the past two decades because of the concentrated efforts to measure the components or antecedents of career indecision and to categorize undecided students differing on psychological variables (Lucas & Epperson, 1990; Slaney, 1988). The primary purpose of the current study was to examine the dimensions of career indecision among a sample of Greek high school students and to classify the students of the sample in regard to the points that the difficulty of decision making is focused. The second objective for the current study was to investigate the relationship between career decision status groups and generalized self-efficacy, coping strategies, and vocational interests.

Career Indecision

The construct of *career indecision* attempts to explain why some individuals are uncertain about a career choice, whereas others are firmly committed (Wanberg & Muchinsky, 1992). Professional literature on career indecision distinguishes between individuals who are undecided about their careers and those who are, by their nature, generally indecisive (Santos & Coimbra, 2000). Individuals who are undecided are thought to be going through a developmental stage that is normal and temporary (Betz, 1992; Lewko, 1994; Osipow, 1999). On the other hand, individuals who are indecisive portray an ongoing inability in the decision-making process because of a psychological problem (Hartman, Fuqua, & Hartman, 1983), a possible personality disorder (Callanan & Greenhaus, 1992), or an inadequate identity formation (Guerra & Braungart-Rieker, 1999). This problem has been referred to as *generalized indecision*.

Although one can distinguish between individuals who are indecisive and those who are undecided, today's researchers accepted that *career indecision* should be conceptualized as a complex, multidimensional construct (Vondracek, Hostetler, Schulenberg, & Shimizu, 1990), and that undecided individuals do not represent a group of homogenous characteristics (Betz, 1992; Chartrand & Camp, 1991; Lucas & Epperson, 1990). This evolution is reflected in the emergence of instruments, which evaluate different

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dimensions of career indecision (Gaffner & Hazler, 2002; Gati, Osipow, Krausz, & Saka, 2000; Larson, Heppner, Ham, & Dugan, 1988) and show multiple types of undecided students (for a review, see Gordon, 1998).

Career Indecision and Generalized Self-Efficacy

The role of self-efficacy as a fundamental influence on career indecision has been stressed by empirical research the past decade. The construct of *self-efficacy*, which was introduced by Bandura (1997), relates to judgments on the skills a person engages to successfully complete a task. In short, perceived efficacy is concerned not with the number of skills you have but with what you believe you can do with what you have under a variety of circumstances. Within career psychology the research carried out by Betz and Hackett (1986) has encouraged self-efficacy investigations of the content of career choice from a self-efficacy perspective, such as an *examination of career-related behaviors*. Research findings have largely supported the usefulness of career decision-making self-efficacy in predicting career indecision (Betz, Klein, & Taylor, 1996; Betz & Luzzo, 1996; Giannakos, 1998).

Although the aforementioned theory and research support that self-efficacy is linked to a different domain of functioning, some researchers have also conceptualized a generalized sense of self-efficacy. This particular sense of efficacy beliefs refers to a global confidence in one's coping ability across a wide range of demanding or novel situations (Sherer et al., 1982). Thus, general self-efficacy aims at a broad and stable sense of personal competence to deal effectively with a variety of stressful situations (Schwarzer & Scholz, 2000), such as *career indecision*.

Career Indecision and Coping

Career indecision is considered to be a stressful situation as it includes dilemmas and conflicts triggered by interpersonal, intrapersonal, and environmental factors. A number of authors assessed career indecision as a stressful situation showing types of undecided students differing on variables such as *levels of anxiety* (Chartrand & Robbins, 1990; Larson et al., 1988), *affective distress, personal agency,* and *problem solving* (Larson & Majors, 1998). According to Folkman and Lazarus (1980), when individuals are confronted with a stressful event (i.e., career indecision) they develop coping strategies (or styles) to master, reduce, or tolerate the internal and/ or external demands that are created by the stressful transaction. These strategies have two major functions: the regulation of distressing

emotion (emotion-focused coping) and doing something to change for the better the problem causing the distress (problem-focused coping) (Besevegis, 2001; Folkman, 1984). Although the aforementioned studies investigated how people cope with career indecision, the assessment of coping styles in career indecision is not sufficiently examined. To address this shortcoming, we consider it interesting to investigate the coping strategies that use career undecided students.

Career Indecision and Vocational Interests

Finally, as already mentioned, the study of career indecision has centered its interest in identifying different types of undecided students (for a review, see Gordon, 1998). However, very few researchers examined the vocational interests that undecided students form (Slaney, 1988) or the differences that may arise concerning the interests of decided and undecided students (Elton & Rose, 1971; Lunneborg, 1975). Vocational literature defines interests as things that we like and find enjoyable (Hyde & Trickey, 1995; Sidiropoulou-Dimakakou, 2000). These things are manifested through the activities we pursue, the objects we value, and we find fun, exciting, or challenging. For that reason interests have an important influence on educational plans and occupational choices. Some researchers highlighted the importance of interests to vocational decisions. Brown and Brooks (1991) support that the assessment of interests contributes in the development of self-awareness, in the identification of occupational alternatives and in the process of career decision making. Spokane (1998) has also demonstrated how interests can be used to uncover underlying dimensions of career decisions dilemmas. That is why the exploration of the relation between career indecision and vocational interests becomes significantly interesting in the current study, given that it may contribute to the investigation of interest.

Current Study

The current study aims to address 5 questions:

Research Question 1: What are the underlying dimensions of career indecision for a sample of Greek high school students? This is an attempt to extend past work on career indecision that analyzed Career Decision Scale (CDS; Osipow, 1987) items for factor identification. According to theory and prior research a 4-factor structure was expected (Osipow, Carney, & Barak, 1976; Shimizu, Vondracek, Schulenberg, & Hostetler, 1988; Vondracek et al., 1990).

- 320 Journal of Career Development / June 2007
 - *Research Question 2:* What are the distinct patterns of decisional difficulties that the students of the sample share? We seek to extend past work on career indecision types using CDS items for cluster identification (Gordon, 1998). According to levels of career indecision, groups of students are expected to emerge differing in their career decision status.
 - *Research Question 3:* Is there any relation between generalized self-efficacy, as measured by the General Self-Efficacy Scale (GSE; Schwarzer & Scholz, 2000) and the career indecision cluster groups? Following Schwarzer and Scholz (2000) we expected that students with higher career indecision demonstrate lower generalized self-efficacy.
 - Research Question 4: Are there differences in coping styles, as measured by the Athens Coping Scale (ACS), between the career indecision cluster groups? Following previous studies (Folkman & Lazarus, 1980; Larson & Majors, 1998) we expected that students with high levels of career indecision employ emotion coping strategies more often, whereas students with low levels of career indecision use problem-focused strategies.
 - *Research Question 5:* Are there differences in vocational interests, as measured by the Career Interest Inventory (CII; Hyde & Trickey, 1995), between the career indecision cluster groups? Following previous studies (Elton & Rose, 1971; Lunneborg, 1975; Slaney, 1988) we expected that the various indecision clusters of students may differentiate themselves in their levels of vocational interests.

Method

Participants

The pool of the current study's participants is students enrolled in the last two grades of high school in the broader area of Athens and Piraeus (Attica, Greece). Eighteen schools were randomly recruited from the official catalogues of the Ministry of Education. The sample of the current study comprised 848 students. Of these, 422 (49.8%) were male and 426 (50.2%) female. With respect to the grade of high school they attended 429 (50.6%) students were at the second grade of high school (age 17 years) and 419 (49.4%) at the third grade of high school (age 18 years). The average age was 16.8 years (SD = .71).

Instruments

Career indecision was assessed by CDS (Osipow, 1987), which consists of 18 items. The CDS has been primarily used as a measure of the degree of indecision; however, it was originally developed with the expressed intent of identifying types of indecision. Items 3 through 18 represent the 16 items measuring indecision (e.g., "Several careers have equal appeal to me. I'm having a difficult time deciding among them," "I can't make a career choice right now because I don't know what my abilities are"), and Items 1 and 2 indicate certainty of career choice (e.g., "I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice"). Responses are recorded on a 4-point Likert-type response continuum of 4 (*like me*) to 1 (*not like me*). Item scores are averaged to obtain a scale score (see Results section).

Osipow (1987) cited studies that established test-retest reliability (during a 2-week period) for the CDS at .82 and .90 for two distinct samples of college students (n = 50 and n = 59, respectively). Concurrent and construct validity for the CDS have been demonstrated by studies showing the scale's expected relationships among a variety of hypothetical constructs, the scale's ability to differentiate career-decided and undecided groups, and the scale's sensitivity to relevant changes following treatment designed to reduce career indecision (Osipow, 1987). The internal consistency reliability of CDS has been consistently high with r's in the .80s (Fuqua & Hartman, 1983). In the study by Shimizu et al. (1988) the Tucker-Lewis reliability coefficient for the full scale was .992. In the current research the internal consistency (Cronbach's α) of CDS was .86.

Generalized self-efficacy was assessed by the GSE (Jerusalem & Schwarzer 1992), which comprises 10 items (e.g., "I can always manage to solve difficult problems if I try hard enough," "When I am confronted with a problem, I can usually find several solutions") as adapted to the Greek population (Glynou, Jerusalem, & Schwarzer, 1992). Students were asked to rate items across a 4-point Likert-type scale ranging from 1 (*never occurred*) to 4 (*always occurs*). The final score is the sum of responses for each participant.

The stability of the GSE has been examined in several longitudinal studies (Schwarzer & Scholz, 2000). One year test-retest reliability (Pearson's correlation coefficient), estimated for two distinct samples of students and teachers ($\alpha = 2,846$ and $\alpha = 140$, respectively) from Germany, ranged from 55 to .75. Jerusalem and Schwarzer (1992) reported Cronbach's alphas ranging from .75 to .90, with the majority in the high .80s, in their 23-nation sample. The estimated internal consistency (Cronbach's α) of GSE in the current investigation was .77. According to the authors', results of factor analysis showed that the scale is unidimensional. High results in the GSE were positively correlated with positive emotion and work satisfaction. Negative coefficients were found with depression, anxiety, and burnout (Jerusalem & Schwarzer, 1992).

Coping was measured using the Athens Coping Scale (Besevegis, 2001), which comprises 35 items. Students were asked to indicate on a 4-point Likert-type scale ranging from 0 (never) to 3 (often) the extent to which they use each of the coping strategies, as follows: Family Assistance Seeking (5 items; e.g., "I talked to my parents and asked their help"), Avoidance-Emotional Control (6 items; e.g., "I started doing other things to keep myself busy and not think of what bothered me"), Giving Up-Distancing (6 items; e.g. "I decided that I couldn't do anything"), Personal Problem Solving (6 items; e.g., "I increased my efforts in order to solve my problem"), Withdrawal (4 items; e.g., "I shut myself off, I locked myself in my room"), Seeking Other's Support (4 items; e.g., "I asked somebody to help me out"), Forgetting (4 items; e.g., "I tried to forget the problem"). For each factor, the composite score is calculated as the mean score of the respective items. The author reported reliability coefficients ranging from .59 to .91, and test-retest reliability (during a 6-week period) ranging from .65 to .91. At the concurrent validity of the scale, it was verified that the scale correlated, in theoretically expected directions, with measures that included coping styles (such as Coping Scale for Children and Youth, CSCY; Brodzinsky et al., 1992). In other research it was also verified that the coping strategies were moderately related with other personality variables of interest, such as internal and external locus of control (for a review, see Besevegis, 2001).

We also used Career Interest Inventory (CII) regarding the evaluation of career choices (Hyde & Trickey, 1995) as adapted to the Greek population (Sidiropoulou & Pavlopoulos, 2005). The CII consisted of 150 items of career activities, which tap into 15 professional categories that represent work labor. These categories are social science (10 items; e.g., "Write reports on how people behave"), clerical services (10 items; e.g., "Type on a computer keyboard"), health services (10 items; e.g., "Help people who have illness"), agriculture (10 items; e.g., "Plant and take care of trees"), customer services (10 items; e.g., "Serve food in a restaurant"), fine arts (10 items; e.g., "Draw cartoons for a newspaper"), mathematics and science (10 items; e.g., "Do laboratory research with chemicals"), building trades (10 items; e.g., "Paint houses or buildings"), educational services (10 items; e.g., "Teach school subjects to children"), legal services (10 items; e.g., "Talk to people about their legal rights"), transport (10 items; e.g., "Drive a lorry to deliver things"), sales (10 items; e.g., "Sell sports equipment"), management (10 items; e.g., "Manage a hotel"), craft work (10 items; e.g., "Repair jewelry"), and machine

operation (10 items; e.g., "Run a large saw to cut timber"). Responses are reported on a Likert-type response scale ranging from 1 (*dislike a great deal*) to 5 (*like very much*). For each category, the composite score is the sum of the respective items. With respect to the internal consistency of the inventory, Cronbach alphas as calculated for each of the 15 professional categories were satisfactory (.87 to .94). The concurrent validity of the scale is high in relation to other scales, which contain work-activity statements, such as Ohio Vocational Interest Survey, Second Edition (cf., CII; Hyde & Trickey, 1995. For example, clerical services correlated .62 with the OVIS II Clerical subscale; and the machine operation correlated .74 with the OVIS II Machine Operation subscale (Career Interest Inventory [CII]; Psychological Corporation, 1995).

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 will be used for research purposes only. Standard written instructions were provided with each instrument, and oral clarification of the instruments was provided on request. Students were coded, and therefore the procedure was totally anonymous. In the current research CDS was employed for the first time with Greek students. For the instrument to be used we translated the CDS into Greek (all the translations were done by the first author and revised by the second author), and a back translation was carried out by a qualified mother tongue English translator.

Results

Career Indecision

Preliminary factor analysis. To explore the underlying dimensions of career indecision (Research Question 1) the factorial structure of the CDS was computed. Oblique (instead of orthogonal) rotation was used as the preferred rotation method because the extracted factors were expected to significantly correlate with each other (Schulenberg, Shimizu, Vondracek, & Hostetler, 1988; Shimizu et al., 1988). The following criteria were used for factor extraction: (a) the inspection of the scree test for the number of factors (Cattell, 1966), (b) an eigenvalue higher than 1 (Kaiser-Guttman criterion),

Factor Analysis $(N = 848)$								
		CDS1	CDS2	2 CI	DS3	CDS4		
Percentage of variance explained (55.7%)		34.00	7.80	7.4	40	6.50		
Mean score (SD)		1.82 (.67)	2.44 (.80)	2.	25 83)	1.85 (.69)		
Internal consistency – reliability indices		.82	.65		54 ^b	.50		
CDS Items	М	η^2	Factor Loadings (Oblique Rotation))		
10. None of the careers I know about seems ideal to me.	1.83	.58	.74ª	.16	.10	.06		
5. None of the careers I know about appeals to me.	1.55	.50	.72ª	.26	07	.15		
14. I don't know what my interests are.	1.63	.50	.70ª	14	14	13		
13. I can't make a career choice right now because I don't know what my abilities are.	1.85	.51	.70ª	16	16	07		
7. I feel lost; I don't have enough information to make a career decision right now	2.09	.60	.62ª	17	.17	03		
8. I feel discouraged, so much that I'd like to put off making a decision for the time being	2.08	.55	.61ª	13	.11	.04		
9. I've got to start looking for other possible careers.	1.74	.46	.54ª	.04	.05	.28		
11. I'd like to make a decision quickly. I wish I could take a test.	2.59	.50	.39	36	.19	07		
12. I know what I'd like to major but in, I do not know about a career.	2.73	.48	.39	31	.26	16		
18. I feel I need some additional support for it as a choice for myself.	2.01	.65	.02	79ª	.05	05		
16. I've decided on a career, but I'm not certain how to go about implementing my choice.	2.27	.59	09	68ª	14	.56ª		
17. I need more information about occupations.	2.19	.58	.22	58ª	.16	.03		
15. So many things interest me. It's hard for me to find just one.	2.29	.66	21	.00	.86ª	.08		

Table 1Career Decision Inventory (CDS): ExploratoryFactor Analysis (N = 848)

(continued)

CDS Items	М	η^2	Factor Loadings (Oblique Rotation)			
4. I'm having a difficult time deciding among several careers that have an equal appeal me.	2.20	.63	.08	01	.77ª	05
6. My choice is against the wishes of someone who is important to me.	1.66	.62	.03	05	.08	.75ª
3. If I had the skills, I would know what career to pursue, but this is really not possible for me.	1.88	.44	.27	.02	.13	.49ª

Table 1(continued)

Note: CDS1: Absence of Structure; CDS2: Need for Career Guidance; CDS3: Diffusion of Interests; CDS4: Personal Conflict.

a. All items for each factor were summed, and the sums were divided by the number of items for each factor, for comparability reasons. Items 11 and 12 are not part of any of the 4 factors.

b. Pearson *r* is computed for CDS3 (2 items); for the other 3 factors, Cronbach α indices are reported.

(c) at least two items with primary loadings higher than $.40^1$ (Gorsuch, 1988), and (d) the interpretability of the factor in terms of its content. A 4-factor solution, accounting for 55.7% of the total variance was found to best meet the above criteria (see Table 1).

The first factor Absence of Structure refers to a person's inability to make a decision, mostly because of a lack of information and confusion with regards to his or her interests, attitudes, and abilities. This factor consists of 7 items and explains 34% of the total variance. The second factor Need for Career Guidance encompasses 3 items that mainly have to do with the need for information and guidance and explains 7.80% of the variance. The third factor Diffusion of Interests refers to the problem relating to difficulties in decision making when many alternatives combined with many interests exist. That particular factor is formed by 2 items and explains 7.40% of total variance. The fourth factor Personal Conflict refers to doubts caused by lack of skill information and external objections along with a "how to do it" difficulty (3 items). This factor accounts for 6.50% of the total variance. As expected, the intercorrelations between the 4 factors were all positive and statistically significant ranging between .30 (Diffusion of Interests × Personal Conflict) and .58 (Personal Conflict × Need for Career Guidance). The composite scores for each factor were calculated as the mean scores of the respective items (see also Table 1).

We must note that the first 2 items of the scale were not included in the factor analysis as they refer to a sense of security with respect to the academic and/or career choice; hence they constituted a separately defined "dimension," namely *certainty*. This statistical manipulation is in accordance to the scoring instructions of the manual. Pearson r was computed and equaled .54. The mean of the responses produced for this "dimension" is 2.78 with a standard deviation of .83.

Identification of Indecision Types

Cluster analysis. To identify groups of students differing in their career decision status, cluster analysis was conducted (Research Question 2). Cluster analysis was selected, as it is considered an ideal method for examining the CDS and unveiling the types of career indecisiveness because the scale was originally developed with types in mind (Savickas & Jarjoura, 1991); and such a typological approach may be examined in respect to homogeneous groups of people. Cluster analysis is an analytic tool designed to identify relatively homogeneous groups of individuals based on the scores from a set of related variables (Wanberg & Muchinsky, 1992). In our research, the variables of career indecision were the actual items of CDS. As Winer (1992) pointed out, cluster analysis is the most appropriate technique for indecision research, noting that results of the technique reflect the original idea of CDS developers (i.e., that a number of indecision types exist). As Borgen and Barnett (1987) mentioned in their work, cluster analysis is the most appropriate technique to engage with this kind of data because of minimizing the variance within the clusters under development while maximizing the variance between clusters under development.

Ward's method for calculating the algorithm of clustering of participants was used in the analysis. The identification of significant clusters was performed with the inspection of critical gaps in the distribution of fusion coefficients (Norusis, 1988), which represent the distance among clusters throughout the successive stages of the analysis. Such a gap was traced through the transitive stage from 3 clusters to 2. This provided evidence that the 3 clusters were adequate for classifying the students with respect to their career indecisiveness.

The first cluster was called *decided*. Students of this cluster, in general, demonstrated the greatest means of career certainty and reported lower levels of career indecision. This cluster included 343 (40.7%) participants. Individuals in this cluster are comfortable with their career decision status and believe they are able to make decisions without difficulty. However,

they may need occupational information and career counseling because they have settled on a vocational path.

The second type was named *exploring possibilities*. This cluster constituted 27.8% of the sample (n = 234) and represented the greatest mean in Item 15 (many interests/hard to decide) because they agreed with the decided in the score of Item 6 (someone opposes first choice). Members of this group feel that they have a moderate amount of career decidedness and appear to approach career decisions in a normative manner. They may need information to choose among alternatives and support about how to deal with opposition from significant others. This group might be considered developmentally undecided, especially as compared to the more indecisive group, which is followed.

Students of the third cluster represented the lowest means of career certainty and the greatest means of indecision. Members of this group are not comfortable with their career decision status and are not able to make decisions. They need extensive career intervention. Based on the profile of the responses, 265 (31.5%) of the students of the third cluster were characterized as "undecided."

The differences in the factor scores of the CDS as a function of the above 3 types of indecision were confirmed in a multivariate analysis of variance (MANOVA), with a Wilks's Lambda reaching only .21, and its respective F(10, 1670) reaching 197.26, p < .001, $\eta^2 = .54$. At the univariate level, differences in the mean scores of all 4 factors of career indecision were observed, as presented in Table 2. The measures of association showed moderate to strong effect sizes explaining from 30% to nearly 60% of the correlation variance.

The distribution of the 3 types of career indecision did not differ significantly between the two sexes, $\chi^2(2, N = 842) = 1.86, p < .05$. The chi-square criterion revealed a significant association between career indecision type and school grade, $\chi^2(2, N = 842) = 8.33, p < .05$, as follows: The percentage of the decided cluster was higher among the third grade of high school (45.1%) than among the second grade (36.5%). On the other hand, more students of the second grade (35.5%) than of the third grade of high school (27.3%) belonged to the undecided cluster. The exploring possibilities cluster yielded similar percentages for the two classes (28.0% and 27.6%, for second and third grade), respectively.

Self-Efficacy as a Function of Indecision Cluster Group

A univariate analysis of variance (ANOVA) was used to determine whether significant differences existed among the indecision cluster groups based on the GSE (Research Question 3). The result was significant, F(2, 836) = 94.35,

328 Journal of Career Development / June 2007

	Care	er Indecision C			
	$\begin{array}{c} & \text{Exploring} \\ \text{Decided} & \text{Possibilities} \\ (n = 343) & (n = 234) \end{array}$		Undecided $(n = 265)$		
CDS Factors	\overline{X}	\overline{X}	\overline{X}	F(df = 2, 839)	η^2
Absence of structure Need for career guidance Diffusion of interests Personal conflict	1.30_{a} 1.72_{a} 1.77_{a} 1.44	1.76 _b 2.52 _b 2.67 _c 1.71	2.56 _c 3.03 _c 2.43 _c 2.24	725.87*** 583.70*** 126.06*** 104.73***	.63 .42 .23 30
Certainty	3.27_{c}^{a}	$2.60_{\rm b}$	2.24 _c 2.29 _a	150.94***	.30

Table 2Factor Means of the Career Decision Scale (CDS)Across the Three Clusters of Career Indecision

Note: Rating scale ranges from 4 = like me to 1 = not like me. Means sharing a common subscript letter do not differ significantly according to post hoc Scheffé test at $\alpha = .05$. *p < .05. *p < .05. **p < .01. ***p < .001.

Table 3Factor means of the Athens Coping Scale (ACS)Across the Three Clusters of Career Indecision

	Care	er Indecision C			
	Decided $(n = 343)$	Exploring Possibilities (n = 234)	Undecided $(n = 265)$	- F	
ACS Factors	\overline{X}	\overline{X}	\overline{X}	(df = 2, 836)	η^2
Family Assistance Seeking	1.74 _b	1.67 _{ab}	1.54	4.51**	.01
Avoidance - Emotional Control	1.46	1.59 _b	1.68 _b	9.65***	.02
Giving Up – Distancing	.86	.96	1.12 _b	15.69***	.04
Personal Problem Solving	2.14	2.08	2.04	3.36*	.01
Withdrawal	1.59	1.65	1.80 _b	9.69***	.03
Seeking Other's Support	1.91	1.92	2.00	2.08	.01
Forgetting	2.08	2.02	2.01	1.47	.00

Note: Rating scale ranges from 0 = never to 3 = often. Means sharing a common subscript letter do not differ significantly according to post hoc Scheffé test at $\alpha = .05$. *p < .05. *p < .01. **p < .001.

p < .001, $\eta^2 = .18$. Specifically, the decided group (M = 31.30) demonstrated higher mean of generalized self-efficacy than exploring possibilities (M = 28.97) that, in turn, scored higher than the undecided (M = 27.19) (Scheffé).

Coping Strategies as a Function of Indecision Cluster Group

A MANOVA design was used to determine whether significant differences existed among the indecision cluster groups based on the ACS (Research Question 4). Results of the MANOVA revealed a significant Wilks's Lambda (.92), F(14, 1660) = 4.90, p < .001, $\eta^2 = .04$, thus indicating significant differences on the coping strategies. The multivariate effect size was small; and at the univariate level of the analysis, although there have been differences in the mean scores of five strategies of Coping Scale (of 7 strategies in all) as presented in Table 3, the measures of association do not exceed .04 at the univariate level. Still, the differences found among the three clusters of career indecision remain of interest and are discussed further in light of the above findings.

Vocational Interests as a Function of Indecision Cluster Group

A MANOVA design was used to determine whether significant differences existed among the indecision cluster groups based on the CII professional categories (Research Question 5). Results of the MANOVA revealed a significant Wilks's Lambda (.88), F(30, 1644) = 3.55, p < .001, $\eta^2 = .06$, thus indicating significant differences on the professional categories of CII. The MANOVA design was followed by univariate ANOVA and post hoc pairwise contrasts to identify specific differences between pairs of clusters, as presented in Table 4. The multivariate effect size was again very limited; and at the univariate level of the analysis, although significant differences were observed in the mean scores, the measures of association did not exceed .06. The differences found among the three clusters of career indecision are rather indicative in this design and remain of interest as to be discussed further in light of the above findings.

Discussion

The results of the current research suggest that four factors contribute to career indecision of students in Greece. Recent studies by Schulenberg et al.'s (1988) and Shimizu et al.'s (1988) revealed a four-factor solution,

330 Journal of Career Development / June 2007

	Care	er Indecision C			
	Decided $(n = 343)$	Exploring Possibilities (n = 234)	Undecided $(n = 265)$	F	
CII Professional Categories	M	М	М	(df = 2, 836)	η^2
Social Science	24.57 _{ab}	24.13	26.10 _b	3.27*	.01
Clerical Services	17.94	18.54	20.88 _b	14.04***	.03
Health Services	20.48	21.38	21.98	2.42	.01
Agriculture	17.90	18.99 _{ab}	20.72 _b	8.45***	.02
Customer Services	15.27 "	16.38	18.80 _b	24.89***	.06
Fine Arts	24.79 [°]	24.92	26.97 _b	5.00^{**}	.01
Mathematics and Science	22.72	23.95	24.04	2.90	.01
Building Trades	12.69	13.07	14.72 _b	10.99***	.02
Educational Services	21.81	21.82	24.14 _b	7.12***	.02
Legal Services	20.62 [°] _{a b}	19.59	21.97 _b	3.40^{*}	.01
Transport	13.64	14.55	16.97 _b	26.48***	.05
Sales	16.69	18.73 [°] _b	20.81	29.55***	.06
Management	23.09	24.49 [°] _{ab}	26.14 _b	8.42***	.02
Craft Work	14.93	15.38	17.52 _b	15.12***	.03
Machine Operation	12.64 [°] _a	13.28 [°] a	15.18 _b	14.77***	.03

Table 4 Means of Professional Categories of the Career Interest Inventory (CII) Across the Three Clusters of Career Indecision

Note: Rating scale ranges from $1 = dislike \ a \ great \ deal$ to $5 = like \ very \ much$. Means sharing a common subscript letter do *not* differ significantly according to post hoc Scheffé test at $\alpha = .05$. *p < .05. *p < .05. *p < .01. ***p < .001.

which resembles the current results. According to our findings, we affirm that CDS contains items that reflect different antecedents of career indecision that seems to be functioning in Greek culture, in a manner consistent with the intended purpose of the scale. Within the context of vocational counselling, differentiation between diverse antecedents of career indecision has important implications for developing appropriate interventions (Chartrand & Robbins, 1990; Osipow, 1999) according to the particular needs of each undecided individual.

One of the main research questions tested refers to the classification of students in various cluster groups of career decision status; it is confirmed what most researchers of career indecision support: Individuals, who are undecided, are not homogeneous but rather represent multiple forms of indecision (Wanberg & Muchinsky, 1992). Three cluster groups are classified: decided, exploring possibilities, and undecided. The profile of the decided group indicates that these individuals are characterized by a strong sense of career decidedness, have clear pictures of their interests and talents, and are decided about what career they will follow. This is also emphatically stated when they report their continuous need for more occupational information and additional support. Past studies, containing comparable profiles, included a decided-but-need support profile, (Schulenberg et al., 1988), a decided type (Savickas & Jarjoura, 1991), and a confident decided cluster (Wanberg & Muchinsky, 1992).

The profile of the exploring possibilities comprises students who have already started exploring potential alternatives to some extent; however, they seem to have a difficulty in choosing among a few alternatives. From the perspective of career development theory we suggest that this cluster has a problem in specifying a choice through the exploration stage, where the individual examines alternatives and various plans, and the possibilities of their implementation (Kantas & Hantzi, 1991). This cluster contains elements of an approach-approach (Shimizu et al., 1988) or specifying a choice through advanced exploration type (Savickas & Jarjoura, 1991) or a tentatively decided-crystallizing preferences profile (Rojewski, 1994).

Approximately one third of the students in that sample were categorized as undecided. These students demonstrated an underdevelopment of all those personality characteristics that relate to career decision because they have difficulties in coping with the vocational development tasks. According to the literature, this cluster is similar to past types described alternatively as diffusion (Schulenberg et al., 1988), undecided (Crites, 1969), and chronic indecision (Rojewski, 1994; Savickas & Jarjoura, 1991). According to the aforementioned results, we consider that our findings do reflect the multidimensional nature of career indecision. We support that although we use CDS only for research purposes, our results show the utility of the scale's items to differentially diagnose decision status of students in Greek culture. The cluster solution, identified in the current study, appears to have many similarities, as compared to the previous relevant studies in the United States, in various samples of adolescents and college students.

Results also indicated that some differences—bearing various levels of importance—exist among decision status groups along the following variables: self-efficacy, coping, and vocational interests. Although previous studies supported that career decision-making self-efficacy is correlated negatively with career indecision (Betz et al., 1996; Betz & Luzzo, 1996) the results of

the current research report that a negative correlation with career indecision arises also from the effect of generalized self-efficacy. The possible explanation for our results finds some support in the empirical approach, which reports that the greater the belief in one's competence to handle new situations and behavioral challenges (generalized self-efficacy) (Sherer et al., 1982) the better to deal effectively with a wide range of demands (Schwarzer & Scholz, 2000) such as *career indecision*. That latter could mean, within the context of vocational counseling, that if the career counselor meets a career-undecided individual with low perceived self efficacy the counseling effort would focus on increasing self-efficacy, while continuing to help the client explore the career-planning process (Larson & Majors, 1998). At this point, we consider that our results contribute to the cross-cultural implications of self-efficacy, as self-efficacy has been recognized for its utility with diverse populations, attributable to its attention to environmental influences (Lindley, 2006).

Examining the effect of coping strategies for the career indecision cluster groups, it was found that decided students use more often the family assistance seeking strategy when they confront a stressful event, such as *career* indecision, whereas undecided students use, more often than decided and exploring possibilities students, strategies such as giving up-distancing and withdrawal. Although the differences are not striking in terms of variance accounted for, they seem to indicate a possible correlate of career indecision. The main conclusion that we can draw from the analysis of the current results supports Folkman and Lazarus's (1980) study and Larson and Major's (1998) study, allowing simultaneously an expansion of their conclusions: Greek decided students may consider career indecision as more of a controlled situation and tend to use a problem-focused strategy because the exploring possibilities students and, furthermore, the undecided students seem not to be able to control the situation or the adaptive challenges they are faced with, a fact that may lead them to employing emotion-focused strategies. The differential impact of coping on career indecision suggests that it is important to discriminate between problem-focused strategies and emotion-focused strategies and to select specific interventions for students who differ in their decision status with these differences in mind.

A basic goal of the current research was the investigation of the level of vocational interests among the indecision cluster groups. Our results support that undecided students had high scores for large numbers of vocational interests, whereas exploring possibilities students reported fewer vocational interests, with the decided students' cluster reporting the fewest number of

vocational interests, having focused on some particular interests already. Thus, an interpretation of our results could be that undecided students have limited exposure to the world of work and, therefore, tend to have less clearly differentiated interest patterns. On the other hand, exploring possibilities and decided students seem to reserve a more stable profile of career interests thus clarifying an action plan. The explanation for this result may be applied to the findings of Santos and Coimbras's (2000) study, based on the psychological process of career exploration and investment. According to the authors, career indecision is related to career exploration and the absence of investment. In this way, undecided students need an intervention that promotes interest information in the context of exploration new experiences because decided and, moreover, exploring possibilities students need an intervention that interprets interest information in the context of crystallization experiences.

However, we must consider the limitations of the current study. One of its greatest limitations is the area from which the sample was drawn. The sample drew exclusively from the municipality of Attica, Greece, excluding more rural and suburban areas. An additional restriction relates to the range of the participants' age. The effect sizes for the comparisons related to coping strategies and vocational interests are limited and result in indicative correlates of career indecision status. Future research might address questions referring to stability over time in career indecision cluster membership and the possible identification of turning points, as well as the effects, of career interventions in enhancing career decisiveness. Finally, CDS has been employed for the first time with Greek students; therefore it is considered essential to administer the scale to a greater range of student population.

Notes

1. In general, factors with less than three items are reported to lack stability; it was decided, however, to follow the literature using the Career Decision Scale, where two-item factors are quite common, to increase comparability of our findings with previous research (Hartman & Hartman, 1982; Osipow, Carney, & Barak, 1976).

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Argyropoulou et al. / Career Indecision 337

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