

Using the “ARIADNE” Interest Questionnaire to Assess Cypriot Adolescents’ Career Interests

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Abstract. The present study examines the career interests of tenth grade Cypriot students with the use of the “ARIADNE” Career Interest Questionnaire. “ARIADNE” is a career guidance instrument designed to assist individuals’ decision making regarding their educational and vocational choices. The sample used in the present study consisted of 3,579 tenth grade Cypriot students. Participants’ educational and vocational preferences are discussed in relation to their gender. Male students demonstrated higher level of interest in “Computer Science”, “Mathematics and Science”, “Agriculture”, “Enterprising and Management”, “Economics”, “Engineering”, “Sports”, “Military and Police Occupations”, and “Technical Occupations” than their female counterparts. On the other hand, female students reported higher degrees of interest than male students in “Educational Services”, “Social Sciences”, “Legal Services”, “Arts/ Graphic Arts”, “Health and Biology”, “Customer Services”, and “Philology and Philosophy”. Results are discussed in terms of research and practical implications.

Keywords: secondary education Cypriot students, career interests, ARIADNE interest questionnaire

Introduction

Up until 2009, Cyprus has been a state with a stable open, free-market, service-based economy with some light manufacturing. World Bank had classified Cyprus as a high-income economy, while the International Monetary Fund had included it in its list of advanced economies in 2001. Nevertheless, in 2009 the Cypriot economy went into recession. The economy suffered 1.67% shrinkage with large drops mainly in the tourism and shipping sectors which led to rising unemployment. The wider European debt crisis affected heavily the economy of Cyprus leading to the 2012-2013 Cypriot financial crisis. The decisions of the Eurogroup in March 2013, that imposed a one-time bank deposit levy on all

uninsured deposits over the amount of 100,000 euros, caused a major negative effect on the state's labor market.

The current unemployment rate is steadily over 15%, while in January 2009 it was 3.9%. Youth unemployment rates for the period of 2014-2015 ranged from 31.7% (12/2015) to 40.3% (09/2014), while in 2009 they were below 10%. The sharp increases in unemployment, followed by a significant reduction in the salaries and the pension, have violently forced Cypriots to change their life style within a very short period of time (Koutsampelas, & Polycarpou, 2013; Rodrigues, Zolyomi, Kalavrezou, & Matsaganis, 2013).

These changes are likely to have major impacts on the educational and career choices of Cypriot students, as they may express preferences to occupations based on the (perceived) direct link between area of specialty and the labor market. This hypothesis was tested in the present study that investigated career interests of tenth grade students.

There is general consensus that career interests emerge during childhood (Tracey, 2001) but become progressively more stable or fixed as individuals become adolescents, and approach adulthood (e.g. Marcia, 1980; Vondracek, 1993). This might be partly attributed to increasing self-awareness (Amundson, 1995), development of academic or work skills (Phillips & Zimmerman, 1990), world of work knowledge (Walls, 2000), and educational choices knowledge (Betz & Schifano, 2000). Longitudinal studies (e.g. Lubinski, Benbow, & Ryan, 1995; Swanson, 1999) and meta-analytic reviews (Low et al, 2005) have argued that interests remain considerably stable over time. Nevertheless, career interests should not be considered as unchanged factor, because the new learning experiences that somebody acquires might change them. Although one can say that there is a partly crystallization of career interests in adolescence they are still subjected to change when the person has the chance to participate in new activities, try new behaviors, and acquire new experiences.

Career Interests' assessment

Many decades ago Super (1949) identified three types of career interests: expressed, manifest and tested, and in the same way he proposed three different types of assessment that can be used to identify an individual's interests. The first type of assessment measures the "expressed" interests through an interview about what an individual does and doesn't enjoy (expressed interests are verbal statements of liking a task, occupation, object or activity). "Manifest" interests are reflected by an individual's behaviors when participating in various activities, and they are evident by the activities in which they voluntarily engage. Finally, "tested" interests are those that are identified through the use of standardized psychometric tools, such as interest inventories. While interest inventories are the most widely used types of measurement (Locke, Myers, & Herr, 2001), there are several reasons that advocate in favor of using other methods as well: (a) a client may misinterpret the results believing that they provide "definitive" answers (Yost & Corbishley, 1987), and (b)

some researches indicate that expressed interest have more predictive value than the tested ones (e.g. Bartling & Hood, 1981; Borgen & Seling, 1978; Dolliver, 1969; Holland, 1985; Slaney & Russel, 1981). Most career interest inventories are developed by comparing the individual's strength of interest in various activities to those activities that are commonly found in various careers. Particular occupations (or groups of occupations) are then determined to meet the individuals' preferences based on their enjoyment of various activities associated with these occupations. (Levinson, 1993; Power, 2000).

The present study aims at investigating career interests of tenth grade Cypriot students. The following research questions were addressed:

- Which basic groups of occupations do the Cypriot students prefer?
- Are there any gender differences in their preferences?
- What is the relationship between the various basic interest scales?

Methodology

Participants

The sample consisted of 3,579 tenth grade students (48% male, 52% female) attending public urban high schools in Cyprus. Tenth grade was chosen because at the end of this school grade students are obliged to make one of their first career decisions; and choose an "Orientation Group" of disciplines that will affect their future educational choices.

Research took place during the period 2013-2015. Students answered the questionnaire online under the supervision of licensed career counselors. Participants needed approximately 30 minutes to answer the questions.

Instruments

"ARIADNE" Career Interest Questionnaire (www.ariadne-project.gr) was used to assess the students' career interests. ARIADNE (Sidiropoulou, & Drosos, 2013, 2014, 2015) is a state-of-the-art, online computerized psychometric tool that assesses the relationship between the activities that a student likes or dislikes and the activities required in various occupations. It was standardized in a sample of 1003 Cypriot students. Reliability coefficients ranged from $\alpha = .82$ to $\alpha = .94$. The user's manual (Sidiropoulou-Dimakakou, & Drosos, 2014) presents construct validity evidence based on the questionnaire's internal structure.

ARIADNE is designed to correspond to most of Europe's educational systems and the current labor market, and it provides scores for 16 broad educational/occupational categories. The first part of ARIADNE consists of two hundred (200) items and employs a 5-point Likert-type scale of "I strongly disagree" to "I strongly agree". Scores range from 0 to 100 (a secondary scoring scale is used) with higher scores indicating higher level of interest. The length of the second part of ARIADNE

depends on the first answers of each student, as it is comprised of items that further explore their interests in the occupational categories with high scores. ARIADNE is an adaptive questionnaire and it can provide scores for up to thirty (30) occupations' sub-categories.

For the needs of the present study we examined only the 16 broad occupational categories.

Table 1. Description of the 16 broad occupational categories of ARIADNE

Occupational Categories
1) <i>Educational Services</i> : People with a high score in Educational Services are interested in teaching various subjects to students, as well as in pedagogy and education. If there is moderate - high or high score then additional questions appear to examine the student's preferred age group for teaching.
2) <i>Technical Occupations</i> : People with high scores in Technical Occupations prefer activities that require manual work. Common interests of people with high score in this category are the use and handling of equipment, technical construction, damage repairs etc.
3) <i>Military and Police Occupations</i> : People with a high score in this category like to get involved with the provision of security services and protection of civilians, as well as with the military as staff of the army/naval/air force etc.
4) <i>Agriculture</i> : People with a high score in "agriculture" sector are interested in occupations related to nature, farming, agriculture and general livestock and crop production. Agriculture often requires knowledge of chemistry and biology and it has various applications in areas such as food technology.
5) <i>Sports</i> : People with a high score like to engage in sport activities. Their involvement can be direct (as athletes) or indirect. Sometimes there may be a high level of interest in this category, but people might consider their activities only as hobbies.
6) <i>Mathematics and Science</i> : People with a high score like to study mathematics, the application of mathematical methods to problem solving, as well as to study natural science and its applications. If there is moderate - high or high score in the questionnaire, additional questions will appear on the screen to examine the specific area that interests the person (mathematics, chemistry, physics, geology or pharmaceuticals (that combines "Health and Biology" with "Mathematics and Science").
7) <i>Social Sciences</i> : People reporting a high score in this category are interested in the study of human behavior both as an individual and as member of a society. If there is moderate - high or high score in the questionnaire, additional questions will appear to determine whether students are interested in psychology/counseling, sociology/anthropology, theology, paramedical occupations (that combine "Health & Biology" with "Social Sciences") or journalism and Media (that combines "Philology/Philosophy" with "Social Sciences"). The interest may be limited to the study of psychological and social phenomena or it may extend to helping individuals and communities to overcome various problems and difficulties.
8) <i>Computer Science</i> : People with a high score like to deal with computers. They might be interested in both the hardware and the software of computers. In case of moderate - high or high score in the questionnaire, additional questions will appear to determine whether there is specific interest in the field of graphic design (that combines "Computer Science" with "Fine Arts/ Graphic Arts").
9) <i>Health & Biology</i> : People with a high score like to learn about the anatomy of the human body, and they want to acquire broader knowledge in the field of biology. In the future, they would like to work in the health sector (e.g. as doctors, dentists, physiotherapists, etc.), or to engage in research in these fields. In case of moderate - high or high score in the questionnaire additional questions will appear to examine the specific

area that interests the person (biology, medicine/dentistry, paramedical occupations, pharmaceuticals, dietetics).
10) Legal Services: People with a high score like dealing with the laws and their interpretation. They are interested in studying law and having constant updating. The relevant professions (e.g. lawyer, notary, prosecutor, judge, legal consultant, etc.) may require the support of accused people, legal advice, judgment to resolve disputes etc.
11) Engineering: People with higher scores in this sector are interested in designing, organizing and implementing constructions, buildings etc., in mechanical and electrical engineering and its application in solving practical issues. In case of medium - high or high score in the questionnaire additional questions appear to examine the specific field that interests the individual the most (architecture, civil engineering or electrical and computer engineering).
12) Fine Arts / Graphic Arts: People with a high score like to express themselves through art. In the relevant professions, various media are used to express ideas and feelings and to describe or interpret human experiences. In case of moderate - high or high score in the questionnaire, additional questions will appear to evaluate the field or fields of art that mostly interest the person: Music, Painting, Photography/ Decoration, Theater, Graphic Design (that combines "Fine Arts/ Graphic Arts" with "Computer Science") and Architecture (that combines "Fine Arts/ Graphic Arts" with "Engineering").
13) Economics: People with a high score like to deal with economic issues (e.g. financial planning of an enterprise, forming balance sheets etc.) and / or to engage in accounting (recording revenue - costs of a business etc.).
14) Philology and Philosophy: People with a high score are interested in philology/ literature, philosophy and relevant fields (literature, history, foreign languages). In case of moderate - high or high score in the questionnaire, additional questions will appear to examine the field that interests the person most: Philology/literature and History Studies, Foreign Languages, and Journalism and Media (that combines "Philology and Philosophy" and "Social Sciences").
15) Enterprising and Management: People with a high score are interested in working in the various sectors of an enterprise or possibly to create their own.
16) Customer Services: People with a high score prefer activities that require manual work such as cooking, makeup, hairdressing, manicure, pedicure, etc.

Results

Measures of central tendency and variability were computed, as well as the percentages of students who had low, median and high levels of interest in the 16 interest scales. The data are presented in Table 2 and Graph 1.

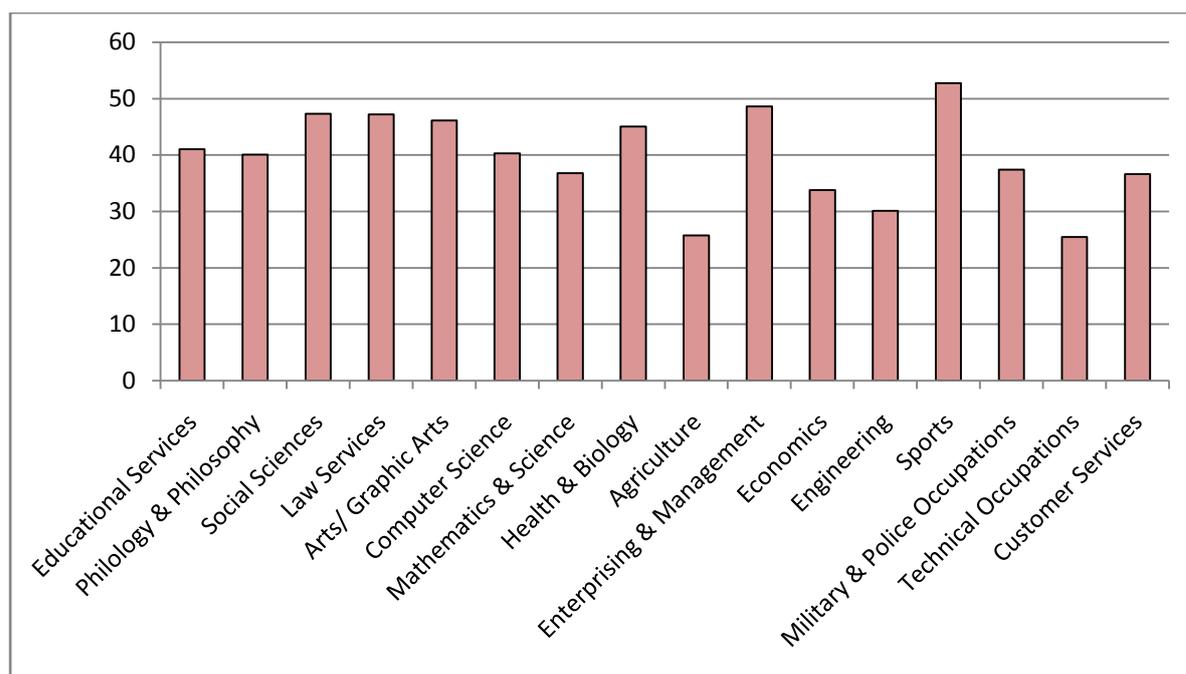
As can be seen in Table 2:

- Students showed higher level of interest in "Sports" ($M=52.78$), as 51.3% has medium-high or high score. "Enterprising & Management" come next ($M=48.62$) with 49.8% of students having medium-high or high score; and "Social Sciences" ($M=47.32$) with 44.6% having medium-high or high score. Additionally, we have "Legal Services" ($M=47.19$) with 41.3% of students showing medium-high or high level of interest, "Arts/ Graphic Arts" ($M=46.14$) with 41.4% showing medium-high or high level of interest, and "Health & Biology" ($M=45.05$) with 40.08% showing medium-high or high level of interest.
- Students showed lower level of interest in "Technical Occupations" ($M=25.45$), as 86.9% has medium-low or low score. "Agriculture" come next ($M=25.76$) with 88.8% of students having medium-low or low score; and "Engineering" ($M=30.12$) with 84.0% having medium-low or low score. Additionally, we have "Economics"

($M=33.80$) with 78.4% of students showing medium-low or low level of interest, and “Customer Services” ($M=36.65$) with 74.8% showing medium-low or low level of interest.

Table 2. Means, Standard deviations of scores and frequencies for students' low, median and high scores in “ARIADNE” basic interest scales

Descriptive Statistics/ Occupational categories	<i>Educational Services</i>	<i>Philology & Philosophy</i>	<i>Social Sciences</i>	<i>Legal Services</i>	<i>Arts/ Graphic Arts</i>	<i>Computer Science</i>	<i>Mathematics & Science</i>	<i>Health & Biology</i>
Mean	41.06	40.08	47.32	47.19	46.14	40.32	36.81	45.05
S.D.	18.39	19.99	21.59	21.63	20.42	24.59	22.67	25.15
Students with low level of interest (0 – 33,33)	37.7%	40.1%	28.9%	28.4%	29.6%	44.6%	48.7%	38.1%
Students with median- low level of interest (33,34 – 50,00)	33.2%	31.1%	26.4%	30.3%	29.0%	22.9%	23.8%	21.1%
Students with median- high level of interest (50,01 – 66,66)	19.2%	18.5%	24.1%	22.2%	23.1%	16.1%	15.7%	18.2%
Students with high level of interest (66,67 – 100,00)	9.9%	10.3%	20.5%	19.1%	18.3%	16.4%	11.8%	22.6%
Descriptive Statistics/ Occupational categories	<i>Agriculture</i>	<i>Enterprising & Management</i>	<i>Economics</i>	<i>Engineering</i>	<i>Sports</i>	<i>Military & Police Occupations</i>	<i>Technical Occupations</i>	<i>Customer Services</i>
Mean	25.76	48.62	33.80	30.12	52.78	37.44	25.45	36.65
S.D.	19.76	18.61	21.47	19.95	31.30	24.71	21.60	23.87
Students with low level of interest (0 – 33,33)	71.1%	23.0%	54.2%	61.7%	31.2%	49.8%	72.2%	48.1%
Students with median- low level of interest (33,34 – 50,00)	17.7%	30.2%	24.2%	22.3%	17.5%	21.2%	14.7%	26.7%
Students with median- high level of interest (50,01 – 66,66)	7.3%	31.4%	14.4%	10.9%	14.9%	14.0%	7.2%	13.1%
Students with high level of interest (66,67 – 100,00)	3.9%	18.4%	9.2%	5.1%	36.4%	15.0%	5.9%	12.1%



Graph 1. Means of the 3,579 students in the 16 basic interest scales.

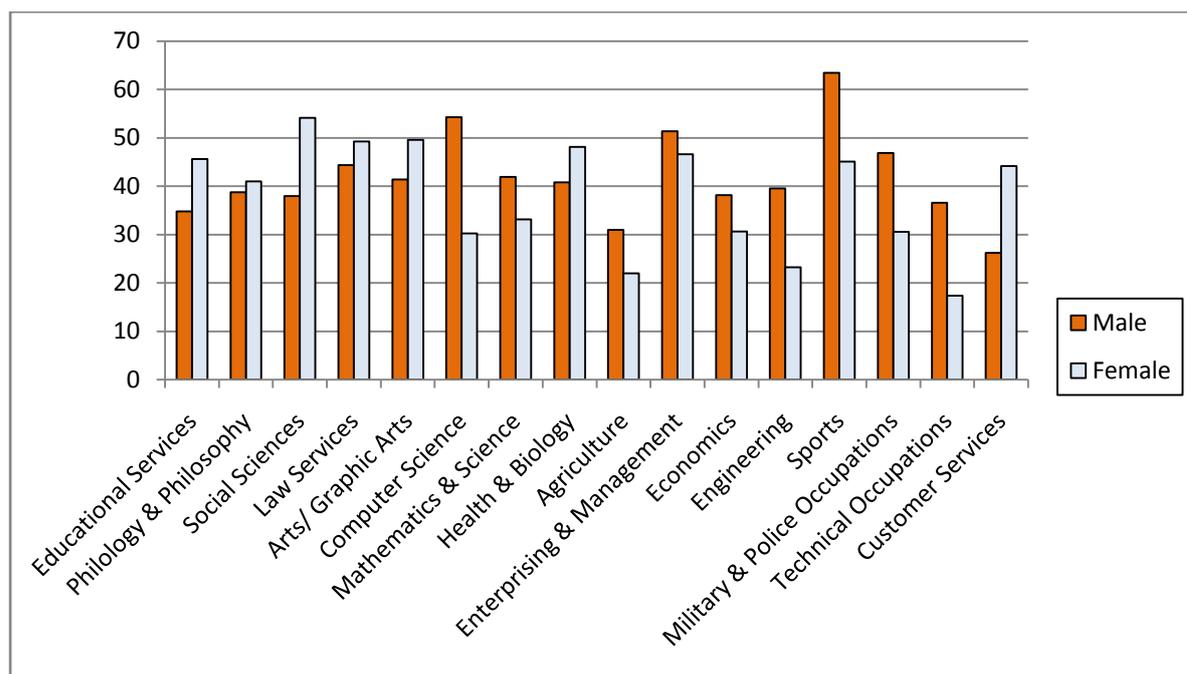
A one-way multivariate analysis of variance (MANOVA) was used to test whether students' gender has an effect on the levels of interest in the 16 occupational categories. MANOVA revealed a significant multivariate main effect for gender, Wilks' $\Lambda=0,45$, $F(16, 3562)=268.123$, $p <.001$, partial $\eta^2=.55$. Results of separate ANOVA tests (Table 3) showed that students' gender results in significant differences in ratings of their interest in most of the occupational categories, as following:

- Boys demonstrated higher scores than girls in the following interest scales: "Computer Science", "Mathematics & Science", "Agriculture", "Enterprising & Management", "Economics", "Engineering", "Sports", "Military & Police Occupations", and "Technical Occupations".
- On the other hand, girls had higher scores than boys in the following interest scales: "Educational Services", "Social Sciences", "Legal Services", "Arts/Graphic Arts", "Health & Biology", "Customer Services", and "Philology & Philosophy".

Table 3. Means, Standard deviations of scores of boys and girls; and ANOVA's results

Statistics/ Occupational categories	<i>Educational Services</i>	<i>Philology & Philosophy</i>	<i>Social Sciences</i>	<i>Legal Services</i>	<i>Arts/Graphic Arts</i>	<i>Computer Science</i>	<i>Mathematics & Science</i>	<i>Health & Biology</i>	
Boys	Mean	34.77	38.74	37.94	44.35	41.40	54.26	41.91	40.78
	S.D.	15.94	19.23	19.61	20.30	19.58	23.66	22.46	23.61
Girls	Mean	45.61	41.04	54.12	49.26	49.57	30.23	33.13	48.14
	S.D.	18.70	20.48	20.41	22.31	20.32	19.85	22.08	25.78

F (1, 3575)	330.31	11.56	567.12	45.44	145.27	1084.32	135.76	76.03
p	<.001	<.01	<.001	<.001	<.001	<.001	<.001	<.001
Statistics/ Occupational categories	<i>Agriculture</i>	<i>Enterprising & Management</i>	<i>Economics</i>	<i>Engineering</i>	<i>Sports</i>	<i>Military & Police Occupations</i>	<i>Technical Occupations</i>	<i>Customer Services</i>
Boys	Mean	30.98	51.41	38.20	39.58	63.43	46.91	36.59
	S.D.	21.35	17.16	21.17	20.17	30.57	24.51	22.96
Girls	Mean	21.96	46.61	30.62	23.27	45.08	30.59	17.38
	S.D.	17.58	19.35	21.15	16.75	29.52	22.50	16.35
F (1, 3575)	190.16	58.73	111.92	691.24	326.65	425.09	853.96	573.90
p	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001



Graph 2. Means of the 1,503 male and the 2,076 female students in the 16 basic interest scales..

Correlations

Correlations (Pearson r coefficients) were computed among the 16 interest scales on data for 3,579 students (Table 4). Although results suggest that most of the correlations are statistically significant, the vast majority is lower than $r=.35$. Results with r greater than .35 are presented below:

- “Engineering” is strongly correlated with “Technical Occupations” ($r=.72, p<.001$), “Agriculture” ($r=.56, p<.001$), “Computer Science” ($r=.54, p<.001$), “Mathematics & Science” ($r=.51, p<.001$), and “Military & Police Occupations” ($r=.48, p<.001$).
- “Social Sciences” are strongly correlated with “Legal Services” ($r=.53, p<.001$), “Educational Services” ($r=.48, p<.001$), “Philology & Philosophy” ($r=.41, p<.001$), “Health & Biology” ($r=.40, p<.001$), “Arts/ Graphic Arts” ($r=.39, p<.001$), and “Customer Services” ($r=.37, p<.001$).
- “Mathematics & Science” are strongly correlated with “Health & Biology” ($r=.57, p<.001$), “Agriculture” ($r=.53, p<.001$), “Computer Science” ($r=.41, p<.001$), and “Technical Occupations” ($r=.36, p<.001$).
- “Technical Occupations” are strongly correlated with “Agriculture” ($r=.59, p<.001$), “Military and Police Occupations” ($r=.54, p<.001$), “Computer Science” ($r=.41, p<.001$), and “Sports” ($r=.37, p<.001$).
- “Legal Services” are strongly correlated with “Philology & Philosophy” ($r=.48, p<.001$), and “Enterprising & Management” ($r=.40, p<.001$).
- “Arts/ Graphic Arts” are strongly correlated with “Customer Services” ($r=.52, p<.001$).
- “Economics” are strongly correlated with “Enterprising & Management” ($r=.64, p<.001$).
- “Military & Police Occupations” are strongly correlated with “Sports” ($r=.49, p<.001$), and “Agriculture” ($r=.45, p<.001$).

Table 4. Correlation Coefficients among the 16 basic interest scales

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16
P1	1															
P2	.30**	1														
P3	.48**	.41**	1													
P4	.27**	.48**	.53**	1												
P5	.34**	.32**	.39**	.24**	1											
P6	-.04*	.08**	-.08**	.05	.16**	1										
P7	.07**	.15**	.13**	.16**	.12**	.41**	1									
P8	.24**	.19**	.40**	.24**	.13**	.08**	.57**	1								
P9	.17**	.22**	.22**	.18**	.26**	.32**	.53**	.34**	1							
P10	.21**	.18**	.22**	.40**	.17**	.26**	.15**	.06**	.22**	1						
P11	.15**	.12**	.10**	.32**	.02	.33**	.26**	.09**	.25**	.64**	1					
P12	.03	.14**	.03	.16**	.29**	.54**	.51**	.19**	.56**	.31**	.34**	1				
P13	.07**	.05**	.04*	.13**	.14**	.22**	.14**	.07**	.27**	.20**	.18**	.31**	1			
P14	.07**	.13**	.12**	.27**	.18**	.32**	.32**	.16**	.45**	.25**	.22**	.48**	.49**	1		
P15	.03	.08**	.02	.08**	.24**	.49**	.36**	.07**	.59**	.23**	.26**	.72**	.37**	.54**	1	
P16	.38**	.13**	.37**	.19**	.52**	-.09**	-.01	.13**	.21**	.13**	.06**	.04*	.08**	.12**	.13**	1

Note. * $p<.05$, ** $p<.01$,

P1= Educational Services, P2=Philology and Philosophy, P3=Social Sciences, P4=Legal Services, P5= Arts/ Graphic Arts, P6= Computer Science, P7=Mathematics and Science, P8=Health and Biology, P9=Agriculture, P10=Enterprising and Management, P11=Economics, P12=Engineering, P13=Sports, P14= Military and Police Occupations, P15= Technical Occupations, P16= Customer Services.

Discussion

Tenth grade Cypriot students showed higher level of interest in activities related to “Sports” followed by “Enterprising & Management”, “Legal Services”, “Social Sciences”, “Arts/ Graphic Arts”, and “Health & Biology”. Score differences among the aforementioned career interests are rather small. On the contrary, students scored lower at “Technical Occupations”, “Agriculture”, “Engineering”,

“Economics”, and “Customer Services”. It is worth mentioning that several of the career interest groups with low scores are related to manual activities (“Technical Occupations”, “Agriculture” and “Customer Services”). The low score in manual occupations might be partly related to the sample’s synthesis, as the research took place in “General Lyceum” (Senior High School) that prepares students to entry Universities, and not in Technical Lyceum that prepares students for technical occupations.

The aforementioned results have little correspondence to Cyprus’ labor market needs. The country’s natural gas reserves and the subsequent growth prospects are leading to employment needs for technical occupations, such as craft-workers and machine operators, for management occupations, and for engineers that will be specialized in natural gas (ANAD, 2012). Moreover, Cyprus’ economy is based in the service sector (including: commerce, accounting, legal services, telecommunications that offer good prospects), while tourism, shipping, maritime trade and agriculture, also, offer relatively good prospects (ANAD, 2015). Nevertheless, the levels of interest of Cypriot students in many occupations with relatively good prospects such as technical occupations, agriculture, engineering, and economics/logistics, are rather low; and our hypothesis that students would show higher level of interest in occupations with (perceived) easier and faster access to labor market was not confirmed. Perhaps it would be interesting to examine in a future research whether their work values have been affected; and they tend to put higher importance in work values like income, social status, work prospects etc.

For a better understanding of these results, we should take into consideration that interests and preferences are only one of the factors that influence the choice of an individual’s career and educational path. People, also, tend to examine their skills, their work values, other personal and family factors, and career prospects in the various occupations. Thus, they might choose to follow an occupation that comes second or third in their level of interest, but satisfies better the other criteria that they value. More specifically, career counseling practice with adolescents has shown that, although a great percentage has a high level of interest in the activities relevant to “Sports”, the vast majority does not consider the relevant occupations as realistic career choices, due to lack of suitable skills or bad (perceived) future prospects. Their interest in sports is mostly expressed in leisure activities.

Results of the present study stress the necessity for implementing career guidance programs and activities which promote occupations and labor sectors with good prospects. Development of interests is correlated with children’s social experiences. So, the education system in general and career counselors in particular can have a major role in increasing students’ interest in occupations and sectors where they’ll be easier employed. Career guidance is of paramount importance for efficiently meeting the newly-emerging labor market needs in an economy that is still suffering from the crisis’ effects.

In respect to the students’ gender our findings revealed that girls scored higher than boys in “Educational Services”, “Social Sciences”, “Legal Services”, “Arts/ Graphic Arts”, “Health & Biology”, “Customer Services”, and “Philology & Philosophy”, while boys had higher scores than girls in “Computer Science”, “Mathematics & Science”, “Agriculture”, “Enterprising & Management”, “Economics”, “Engineering”, “Sports”, “Military & Police Occupations”, and “Technical Occupations”. These results are consistent with the findings of a series of other studies (e.g. Lippa, 1998; Proyer & Hausler, 2007; Sidiropoulou-Dimakakou, 1991, 1995a; Sidiropoulou-Dimakakou, & Pavlopoulos, 2005) that have shown significant gender differences among career interests and subsequently among career

and educational choices. It seems that career development is influenced by the broader socialization of people and the culturally defined role of each gender, as many authors have pointed out (e.g. Athanasiadou, 2010; Delligianni-Kouimtzi, Athanasiadou, Papathanasiou, Stogiannidou, & Fortotira, 2008; Sidiropoulou-Dimakakou, 1995, 1997). The present study does not intend to focus on the gender perspective in career interests, as other studies have already thoroughly discussed gender differences. Nevertheless, our results confirm that students' gender in Cyprus has a major role in the development of their interests, and highlight the necessity for career guidance intervention programs and activities that are designed to reduce these differences.

Additionally, our study examined the correlations that occurred between the career interest groups. The expected relationship among "Social Sciences", "Legal Services" and "Educational Services" was found. Likewise, the expected relationship among "Engineering", "Technical Occupations", "Computer Science", and "Mathematics & Science" was detected. It should be noted that "Mathematics and Science" was, also, strongly correlated with "Health & Biology", and "Agriculture", which is easily explained as the relevant studies have many courses in common. "Economics" was found to be strongly associated with "Enterprising & Management". This finding was anticipated as well because both these career interest groups are in essence part of Business Administration studies. The relationship that appeared between "Military & Police Occupations" with "Sports" and "Technical Occupations" was expected as all three categories require exercise of physical and manual activities. Finally, the correlation between "Arts/ Graphic Arts" and "Customer Services" was, also, expected because "Customer Services" include occupations such as chef, hairdresser etc. that require artistic skills. The fact that the vast majority of the correlations were statistically significant could be attributed to the large number of participants. This may be the case with even very low correlations. No correlations (or of very low magnitude - below $r=.10$) were found between groups that we did not expect to be associated together (e.g. "Arts/Graphic Arts" and "Economics"). This finding is consistent with many studies suggesting lack of correlation between certain career interest groups (e.g. Farh, & Leong, 1998; Proyer, 2006; Sidiropoulou-Dimakakou, Mylonas, & Argyropoulou, 2008).

Conclusions

The utility of career interest assessment tools is based on the connection between information about the individual and information about the occupations. This is an important asset that facilitates career counseling not only by helping people identify their preferences but by giving them the chance to broaden them, if necessary. We should always take into consideration that interests might change as time passes by. This means that people are not obliged to commit themselves in an occupation for the rest of their life just because they showed a high level of interest in a certain period of their life (Krumboltz, 2009).

Career interest's assessment contributes to an individual's self-knowledge, to determining their career choices, to differentiating career activities from leisure activities and to determining the cause of lack of satisfaction in various activities. Additionally, career interest inventories might motivate an individual to acquire a better knowledge of the world of education and work. The results can increase career guidance services effectiveness, and play a major role in helping students understand how career interests may be connected to their future career success. For

the aforementioned reasons, career interest inventories have become an essential part of career counseling services.

The current perspective regarding the role of career interest inventories in career counseling suggests that they should be used as motivation for learning, in-depth self-exploration, exploration of the world of work, and development of decision-making skills. This approach aims at preparing students for an uncertain and unpredictable world where they will probably have to make several career choices. "ARIADNE" Career Interest Questionnaire is based on this philosophy; and its results should be used with flexibility in career counseling and be considered as both a challenge and a call for learning and further exploration.

High quality career counseling and guidance services with the use of valid and reliable psychometric tools are needed so that schools, universities, and career offices address the challenges of a constantly changing world of work. Having this in mind, European University of Cyprus (<http://www.euc.ac.cy/>) is providing free use of "ARIADNE" in trained career counselors of High-schools in Cyprus with special permission by the Ministry of Education and Culture.

References

- Amundson, N. E. (1995). An interactive model of career decision-making. *Journal of Employment Counseling*, 32, 11-21.
- ANAD (Αρχή Ανάπτυξης Ανθρώπινου Δυναμικού στην Κύπρο - Human Resource Development Authority of Cyprus) (2012). *Έγκαιρος Εντοπισμός Αναγκών Απασχόλησης και Κατάρτισης για Αποτελεσματική Διαχείριση του Φυσικού Αερίου στην Κύπρο [Early identification of employment and training needs for effective use of natural gas in Cyprus]*. Nicosia: Human Resource Development Authority of Cyprus.
- ANAD (Αρχή Ανάπτυξης Ανθρώπινου Δυναμικού στην Κύπρο - Human Resource Development Authority of Cyprus) (2015). *Προβλέψεις απασχόλησης στην Κυπριακή Οικονομία 2014-2024 [Employment forecasts in the Cyprus economy 2014-2024]*. Nicosia: Human Resource Development Authority of Cyprus.
- Athanasiadou, Chr. (2010). Επαγγελματική συμβουλευτική με την οπτική του φύλου [Career counselling in the light of gender] In B. Deligianni-Kouimtzi, Chr. Athanasiadou, & Ar. Stogiannidou (Eds.) *Συμβουλευτική με την οπτική του φύλου [Counselling in the light of gender]* (pp. 129-156). Athens: Ellinika Grammata..
- Bartling, H. C. Hood, A. B. (1981). An 11-year follow-up of measured interest and vocational choice. *Journal of Counseling Psychology*, 28, 27-35.
- Betz, N. E., & Schifano, R. S. (2000). Evaluation of an intervention to increase realistic self-efficacy and interests in college women. *Journal of Vocational Behavior*, 56, 35-52.
- Borgen, F. H. & Seling, M. J. (1978). Expressed and inventoried interests revisited: Perspicacity in the person. *Journal of Counseling Psychology*, 25, 536-543.
- Deligianni-Kouimtzi, V., Athanasiadou, Ghr., Papathanasiou, M., Stogiannidou, A., & Fortitira, M. (2008). *Σχολικός επαγγελματικός προσανατολισμός με την οπτική του φύλου: Ασκήσεις ευαισθητοποίησης μαθητών-μαθητριών [School Vocational Guidance in the light of gender: Exercises for male and female students sensitization]*. Thessaloniki: Aristotle University of Thessaloniki.
- Dolliver, R. H. (1969). Strong Vocational Interest Blank versus expressed vocational interests: A review. *Psychological Bulletin*, 72(2), 95-107. doi: 10.1037/h0027850
- Farh, J. & Leong, F. (1998). Cross-cultural validity of Holland's model in Hong-Kong. *Journal of Vocational Behavior*, 52, 425-440.
- Holland, J. L. (1985). *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments*. Englewood Cliffs, NJ: Prentice-Hall.

- Hyde, G., & Trickey, G. (1996). *Career Interest Inventory for Schools: Manual*. London: The Psychological Corporation – Harcourt Brace & Co.
- Koutsampelas, C., & Polycarpou, A. (2013). The Distributional Consequences of the Cypriot Crisis. *Cyprus Economic Policy Review*, 7(1), 47-61
- Krumboltz, J. D. (2009). The happenstance learning theory. *Journal of Career Assessment*, 17(2), 135-154.
- Levinson, E.M. (1993). *Transdisciplinary vocational assessment: Issues in school-based programs*. Brandon, VT: Clinical Psychology Publishing Co.
- Lippa, R. (1998). Gender-related individual differences and the structure of vocational interests: The importance of the people–things dimension. *Journal of Personality and Social Psychology*, 74(4), 996-1009. doi: 10.1037/0022-3514.74.4.996
- Locke, D.C., Myers, J.E., & Herr, E.L. (Eds.) (2001). *The handbook of counseling*. Thousand Oaks, CA: Sage.
- Low, K. S. D., Yoon, M., Roberts, B. W., & Rounds, J. (2005). The Stability of Vocational Interests From Early Adolescence to Middle Adulthood: A Quantitative Review of Longitudinal Studies. *Psychological Bulletin*, 131(5), 713-737. <http://dx.doi.org/10.1037/0033-2909.131.5.713>
- Lubinski, D., Benbow, C. P., & Ryan, J. (1995). Stability of vocational interests among the intellectually gifted from adolescence to adulthood: A 15-year longitudinal study. *Journal of Applied Psychology*, 80, 90–94.
- Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology* (pp. 159–187). New York: Wiley.
- Phillips, D. A., & Zimmerman, M. (1990). The developmental course of perceived competence and incompetence among competent children. In R. J. Sternberg & J. Kolligian Jr. (Eds.), *Competence considered* (pp. 41–66). New Haven, CT: Yale University Press.
- Pancyprian Federation of Women’s Associations. (2013). *Οι επιπτώσεις της οικονομικής κρίσης στην ποιότητα ζωής των νέων γυναικών [The consequences of economic crisis in the quality of young women’s life]*. Nicosia: PFWA.
- Power, P. W. (2000). *A guide to vocational assessment* (3rd ed.). Austin, TX: PRO-ED.
- Proyer, R. (2006). The relationship between vocational interests and intelligence: Do findings generalize across different assessment methods? *Psychology Science*, 48(4), 463-476.
- Proyer, Rene T., & Hausler, J. (2007). Gender differences in vocational interests and their stability across different assessment methods. *Swiss Journal of Psychology*, 66(4), 243-247.
- Rodrigues, R., Zolyomi, E., Kalavrezou, N., & Matsaganis, M. (2013). *The impact of the Financial Crisis on Unmet Needs for Healthcare: Research Note 7/2013*. European Commission.
- Sidiropoulou-Dimakakou, D. (1995). *Σχολικός Επαγγελματικός Προσανατολισμός με Στόχο την Ισότητα των Φύλων [School Vocational Guidance for Gender Equality]*. Athens: General Secretariat for Equality- Research Center for Equality Issues.
- Sidiropoulou-Dimakakou, D. (1997). Εκπαιδευτικές και επαγγελματικές επιλογές των δύο φύλων: Ο ρόλος του Επαγγελματικού Προσανατολισμού [Educational and vocational choices of both sex]. In V. Deligianni & S. Ziogou (Eds). *Φύλο και Σχολική Πράξη [Gender and School Practice]* (pp. 645-666). Thessaloniki: Vantias.
- Sidiropoulou-Dimakakou, D. & Drosos, N. (2013). *ARIADNE – Career Interests Questionnaire*. Poster presented in the annual conference of the International Association of Educational and Vocational Guidance (IAEVG). Montpellier, France, 24-27/9/2013.
- Sidiropoulou-Dimakakou, D., & Drosos, N. (2014). *ΑΡΙΑΔΝΗ- Ερωτηματολόγιο Επαγγελματικών Ενδιαφερόντων: Εγχειρίδιο χρήστη [ARIADNE-Career Interest Questionnaire: User’s Guide]*. Nicosia: European University of Cyprus.
- Sidiropoulou-Dimakakou, D., & Drosos, N. (2015). Διερεύνηση των Επαγγελματικών Ενδιαφερόντων των Κύπριων Μαθητών με τη χρήση του Ερωτηματολογίου Επαγγελματικών Ενδιαφερόντων «ΑΡΙΑΔΝΗ» [Investigation of Cypriot Pupils’ Career Interests with the use of the “ARIADNE” Career Interest Questionnaire]. In D. Sidiropoulou-Dimakakou, A. Asvestas, G. Koumoundourou, & E. Mylona-Kalava (Eds.) *Σύγχρονα Θέματα Επαγγελματικής Συμβουλευτικής [Contemporary Career Counselling Issues]*, pp.133-146. Athens: Gregory.

- Sidiropoulou-Dimakakou, D., Mylonas, K., & Argyropoulou, K. (2008). Holland's hexagonal personality model for a sample of Greek university students. *International Journal for Educational and Vocational Guidance*, 8(2), 111-125.
- Sidiropoulou-Dimakakou, D. & Pavlopoulos, V. (2005). Επαγγελματικά διαφέροντα μαθητών Δευτεροβάθμιας Εκπαίδευσης με τη χρήση του Ερωτηματολογίου Επαγγελματικών Διαφερόντων [Career interests of secondary education students with the use of Career Interest Inventory]. *Review of Counselling and Guidance*, 72-73, 117-134.
- Slaney, R. B. & Russell, J. E.A. (1981). An investigation of different levels of agreement between expressed and inventoried vocational interests among college women. *Journal of Counselling Psychology*, 28, 221-228.
- Super, D. E. (1949). *Appraising vocational fitness by means of psychological tests*. New York: Harper & Row.
- Swanson, J. L. (1999). Stability and change in vocational interests. In M. L. Savickas, & R. L. Spokane (Eds.), *Vocational interests meaning, measurement, and counseling use* (pp. 135-158). Palo Alto, CA: Davies-Black.
- Tracey, T. J. G. (2001). The development of structure of interests of children: Setting the stage. *Journal of Vocational Behavior*, 59, 89 -104.
- Vondracek, F. W. (1993). Promoting vocational development in early adolescence. In R. M. Lerner (Ed.), *Early adolescence: Perspectives on research, policy, and intervention* (pp. 277-292). Hillsdale, NJ: Erlbaum.
- Walls, R. T. (2000). Vocational cognition: Accuracy of 3rd-, 6th-, 9th-, and 12th-grade students. *Journal of Vocational Behavior*, 56, 137-144.
- Yost, E.B. & Corbishley, M.A. (1987). *Career Counseling: A Psychological Approach*. San Francisco: Jossey-Bass.