

Greek students' entrepreneurial profile, attitude and behaviour: A multidimensional statistical analysis

*Sofia D. Anastasiadou and Poulcheria A. Zirinoglou

University of Western Macedonia, Greece

*sanastasiadou@uowm.gr

Abstract

Entrepreneurial development is of a major importance regarding an economy development. It is therefore need to assess the perception and attitude of university graduating students toward Entrepreneurship Education. A sample of 245 respondents from the Department of Early Childhood Education from School of Humanities and Social Sciences, University of Western Macedonia was participated in the survey. The study used an instrument, a 5 point Likert scale, named Scale of Entrepreneurial Profile. The scale consisted by seven conceptual contracts named Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative. Attitude toward entrepreneurship is evaluated by another item.

The results showed that the conceptual constructs Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative have a positive effect on entrepreneurship.

Keywords: Greek, students, entrepreneurial, profile

1. Introduction

In the era of shrinking economies and unemployment (Iqbal et al., 2012) entrepreneurial development is of a major importance. As Franke and Lüthje (2004) claimed the existing tertiary educational system is of a major importance to offer an academic environment that may serve as a catalyst for high-technology start-ups. In addition entrepreneurship education encourages groundbreaking talents, which are an important dynamic force for forthcoming development and investments (Mei et al., 2019). Entrepreneurship is frequently supplementary with the establishment of new businesses, and the inventors of new businesses are so so-called 'entrepreneurs'. Higher education institutions are compulsory to create the ways in which they respond to the

social and economic necessities of society fastening for development of quality, entrepreneurship and innovation (Zirinoglou, 2020). Wei et al. (2019) claimed that entrepreneurship education not only provides human capital such knowledge and skills but may also transform students' attitudes and behaviors. In a line Kassean et al. (2015) claimed that entrepreneurship education not only transfer theoretical knowledge but is the basis of arrangements, activities and appointments aiming to entrepreneurial professional skills.

Sonitaris et al. (2007) and Basu and Virik (2008) supported that entrepreneurship education stimulates students' subjective norms and intentions towards entrepreneurship. The starring role and determination of entrepreneurship education does not only emulates the background of work opportunities and business but correspondingly reveals on wide-ranging context of an individual's life (Anastasiadou & Zirinoglou, 2020b).

As many researchers claimed higher education institutions are in quest of quality and excellence (Anastasiadis, 2020; Anastasiadis & Christoforidis, 2019; Anastasiadis, et al., 2016; Anastasiadou 2015; Anastasiadou, 2016c; Anastasiadou & Anastasiadis, 2019; Anastasiadou & Zirinoglou, 2015a; Anastasiadou & Zirinoglou, 2015b; Anastasiadou & Zirinolou, 2014a; Anastasiadou et al. 2016a; Anastasiadou et al. 2016b; Anastasiadis, 2016; Anastasiadou & Papadaki, 2019; Taraza, & Anastasiadou, 2019a;. Anastasiadou, & Taraza, 2019a). Many studies have been carried out pointing out the need quality of education (Anastasiadou, 2015; Anastasiadou, 2016c; Anastasiadou, 2018a; Anastasiadou, 2018b; Anastasiadou, 2018c; Anastasiadou, 2018d; Anastasiadou, 2019; Taraza & Anastasiadou, 2019a; Taraza & Anastasiadou, 2019b; Taraza & Anastasiadou, 2019c; Papadaki, & Anastasiadou, 2019; Anastasiadou & Zirinoglou, 2015a; Anastasiadou & Zirinoglou, 2015b; Anastasiadou, 2018c; Anastasiadou & Taraza, 2019a; Anastasiadou & Taraza, 2019b; Anastasiadou & Taraza, 2019c; Anastasiadou et al., 2016b; Anastasiadou, & Taraza, 2020a; Anastasiadou, 2019; Anastasiadou, & Taraza, 2020b; Anastasiadou, 2016c; Taraza, & Anastasiadou, 2019a; Taraza, & Anastasiadou, 2019b; Taraza, & Anastasiadou, 2019). Quality and excellence in higher education is strongly connected with entrepreneurship context of higher education (Anastasiadou & Zirinoglou, 2014; Anastasiadou & Zirinoglou, 2020a; Anastasiadou & Zirinoglou, 2020b; Giacomini, et al., 2011; Giossi et al., 2019). Bacigalupo et al. (2016) claimed that according to the European Commission's Entrepreneurship Competence Framework entrepreneurship as a

transversal key competence related by individuals as well as society. Higher education institutions are required to demonstrate the ways in which they respond to the social and economic needs of society and connected quality in education with entrepreneurship and innovation in education (Béchar, & Grégoire, 2005; Giossi et al., 2019; Kaseorg, & Raudsaar, 2013; Franke, & Lüthje, 2004; Markman & Baron, 2003). Adding higher education institutions are vital to establish the ways in which they respond to the economic needs of society concerning graduate employability enhancement, unemployment reduction and students as well as dropout (Bacigalupo et al., 2016). As Mentoor and Friedrich (2007, p. 223) stated even if students have positive entrepreneurial institutions learning culture encourages and promotes the employee culture rather than the self-employment culture.

Nowadays entrepreneurship courses are offered in most institutions and higher educational and universities as part of the curriculum although the entrepreneurship development in the market place is not visible and countable (Herrington et al., 2009, p. 12). The inevitability for entrepreneurship enlargement is one way for higher education institutions (Anastasiadou & Zirinoglou, 2020b; Zirinoglou, 2020)

In this direction the Department of Early Childhood Education from School of Humanities and Social Sciences, University of Western Macedonia has decided to offer quality assurance and innovation courses in education in recent years. The question searching the extent that these students are capable to development innovative entrepreneurship activities is fundament. This is the main reason that this study is aiming to evaluate Greek students' entrepreneurial profile, attitude and behavior.

2. Purpose of the study-Research Hypotheses

The objective of current study is to evaluate Greek students' Entrepreneurial Profile, attitude and behavior through multidimensional statistical analysis. In addition, the present paper examines the following research hypotheses.

Ho1: Self-efficacy has a positive effect on entrepreneurship

Ho2: Opportunity Detector has a positive effect on entrepreneurship

Ho3: Sociable has a positive effect on entrepreneurship

Ho4: Planner has a positive effect on entrepreneurship

Ho5: Risk Taker has a positive effect on entrepreneurship

Ho6: Leader has a positive effect on entrepreneurship

Ho7: Creative has a positive effect on entrepreneurship

Ho8: Gender has an effect on entrepreneurship

Ho7: Gender has an effect on Entrepreneurship Profile' Dimensions/ Conceptual Constructs

3. The instrument

The study used a 5-point response scale, higher scores then correspond to more positive attitudes, whereas 1 corresponding to strongly disagree to 5 strongly agree. The scale named Scale of Entrepreneurial Profile (Schmidt et al., 2018) consists of 21 items grouped into seven components identified students' entrepreneurial profile (Table 1). The seven components/ conceptual structures were named 1. Self-Efficacy (e.g. Sel_Eff1: I believe I am very capable of organizing and executing actions to be successful). According to Schmidt et al. (2018) viewed Self-Efficacy as the belief on an individual own capacity to control the internal and external necessary resources for the accomplishment of his or her task. Self-Efficacy is associated with self-confidence (Gürol & Atsan, 2006; Robinson et al., 1991). In addition Self-Efficacy is associated with the control motives of internal and external resources (Chen et al., 1998; Gelderen et al., 2008; Lumpkin and Dess, 1996). Baron and Markman (2003), recommended that the nearer the match between entrepreneurs' personal characteristics and the requirements of being an entrepreneur the more successful they will be.

2. Opportunity Detector (e.g. Opp_Det1: I frequently think of products/services that could be offered in the market). Schmidt et al. (2018) defined as Opportunity Detector the ability to detect market opportunities as awareness to market opportunities that may arise regarding new goods and services. In addition, Opportunity Detector can be seen as the ability to recognize and effectively engage innovative ideas and businesses filling market gaps (Lumpkin and Dess, 1996), to pinpoint impending market opportunities is highly related to entrepreneurial success (Markman and Baron, 2003).

3. Sociable (e.g. Sociable1: I have a lot of friends). Schmidt et al. (2018) contended sociable behaviour as the easiness to effectively interact with other persons. Baron and Markman (2000) and Baron and Markman (2003), defined as sociability the easiness to effectively interact with other persons. In addition, Baron and Markman (2000) and Baron and Markman (2003) supposed that social perception, impression management, persuasion and social influence (also associated with leadership) and social adaptability are the required social skills for entrepreneurial success (Masouras, 2019).

4. Planner (e.g. I have issues regarding my work/study always planned well in advance). According to Schmidt et al. (2018) planner behaviour is an entrepreneurial characteristic connected with an individual that prepares himself for the future, trying to predict the needed stages to extent his or her objectives. Planner behavior highlights future entrepreneurs' objective to accept responsibilities and autonomy (Carland et al., 1984). Entrepreneurs ought to have the capability to control the events in their lives as well to have locus of inner control (Gürol and Atsan, 2006).

5. Risk Taker (e.g. Risk_Tak1: I like to be exposed to situations that involve some kind of risk). Schmidt et al. (2018) claimed that Risk-taking is the willingness to commit significant resources to a project in the face of uncertainty. In a line with Schmidt et al. (2018) Moruku (2013) claimed that Risk-taking is one of the most important element regarding entrepreneurial investment. In addition, Risk-taking is consider to be a motive for risky actions with the view to gain economic profits Longenecker et al. (2016).

6. Leader (e.g. Leader1: I frequently influence other people's opinions). According to Schmidt et al. (2018) entrepreneurial leadership is revealed the ability to inspire or influence individuals' behavior.

7. Creative (e.g. Creative1: I repeatedly change the way I study/work). Entrepreneurs put innovation and creativity into practice (Drucker, 1985; Masouras, 2019). Creativity drives entrepreneurial intention and behaviour (Gelderen et al., 2008). Creative actions are taken by an individual that relates ideas, facts, necessities, demands and resources, producing new concepts for products, services and processes.

Attitude toward entrepreneurship is evaluated by an item refereeing very negative, negative, neutral, positive or positive attitude toward entrepreneurial.

Table 1: Scale of Entrepreneurial Profile

Scale of Entrepreneurial Profile (Schmidt et al., 2018)	
Dimension	Items
Self-Efficacy	Sel_Eff1: I believe I am very capable of organizing and executing actions to be successful
	Sel_Eff2: I have all the capacity needed to realize my professional/academic future
	Sel_Eff3: I am sure I am competent enough to develop my career successfully
	Opp_Det1: I frequently think of products/services that could be offered in the market

Opportunity Detector	Opp_Det2: Whenever I observe people complaining about some products/services, I think of the market opportunities that may be opening
	Opp_Det3: I frequently imagine the possibility of success that certain products/services could have in a certain market
Sociable	Sociable1: I have a lot of friends
	Sociable2: I can easily relate with other persons, even with those I still do not know
	Sociable3: I like to be in contact with other persons
Planner	Planner1: I have issues regarding my work/study always planned well in advance
	Planner2: I have a detailed plan for my academic/professional issues
	Planner3: I like to have the activities of my next year always well planned
Risk Taker	Risk_Tak1: I like to be exposed to situations that involve some kind of risk
	Risk_Tak2: To be successful in life, it is necessary to run some risks
	Risk_Tak3: A person that do not run some risks will rarely achieve a successful academic/professional life
Leader	Leader1: I frequently influence other people's opinions
	Leader2: It's easy for me to inspire other persons to do what I want
	Leader3: I am frequently chosen as leader in academic/professional projects or activities
Creative	Creative1: I repeatedly change the way I study/work
	Creative2: I like to do tasks that are completely new everyday
	Creative3: I do not like routine activities

The reliability of the instrument was related to items 1 to 21 was estimated by Cronbach alpha coefficient (α) (Cronbach, 1984). The value of Cronbach's α coefficient for this instrument was equal to 0.900 and it is a very high value in terms of internal consistency (Anastasiadis, 2020; Anastasiadis & Christoforidis, 2019; Anastasiadou, 2006; Anastasiadou, 2007; Anastasiadou, 2008; Anastasiadou, 2009; Anastasiadou et al., 2010b; Anastasiadou, 2011; Anastasiadou, 2012a; Anastasiadou, 2012b; Anastasiadou, 2012c; Anastasiadou, 2013a; Anastasiadou, 2013b; Anastasiadou, 2013c; Anastasiadou, 2014; Anastasiadou, 2018b; Anastasiadou, 2018c; Anastasiadou, 2018d; Anastasiadou & Anastasiadis, 2011; Anastasiadou & Anastasiadis, 2019; Anastasiadou, et al., 2010a; Anastasiadou, et al., 2010b; Anastasiadou et al., 2016a; Anastasiadou et al., 2016b; Anastasiadou & Giossi, 2018; Anastasiadou & Karakos, 2011; Anastasiadou & Kofou, 2013a; Anastasiadou & Kofou, 2013b; Anastasiadou & Loukas, 2009; Anastasiadou & Panitsides, 2014; Anastasiadou & Pappa, 2009; Anastasiadou & Pappa, 2019; Anastasiadou & Taraza, 2020a; Anastasiadou & Taraza, 2020b; Anastasiadou & Tiliakou, 2014; Anastasiadou et al., 2014; Cohen, et al., 1988;

Florou, et al., 2015; Kofou, & Anastasiadou, 2013; Panistides& Anastasiadou, 2015; Souravlas & Anastasiadou, 2020; Souravlas, et al., 2020; Thapa et al., 2016; Theodoridou, et al., 2014).

The Cronbach' alpha coefficient is calculated to measure the reliability of the seven dimensions, i.e. Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative (Table 2). Cronbach' alpha coefficient equals to 0.900 verified the reliability of the instrument Scale of entrepreneurial profile. In additions Cronbach' alpha coefficient was above the cutoff point of 0.70 for all the dimensions of Scale of Entrepreneurial Profile (Table 2).

Table 2: Cronbach's Alpha

Dimensions	Cronbach's Alpha
Self-efficacy	0.738
Opportunity Detector	0.784
Sociable	0.736
Planner	0.766
Risk Taker	0.790
Leader	0.830
Creative	0.894

4. Profiles of the respondents

The demographic profiles includes the following characteristics of the despondences; gender, age and year of education. The demographic profiles shown in Table 3 is based on frequency and relative frequency distributions.

The sample comprised of 245 interviewees from the Department of Early Childhood Education from School of Humanities and Social Sciences, University of Western Macedonia, of whom 16 (6.5%) were men and 229 (93.5%) were women. With respect to the ages of participants, 14 (5.7%) of them were 18 years old, 16 (6.5 %) of them were 19 years old, 30 (12.2 %) of them were 20 years old and, finally, 185 (77.5%) were 21 years or more. With respect to their year of studies, 14 (5.7%) of them were during their first year of their studies, 16 (6.5 %) of them were during the second year, 30 (12.2 %) of them were during the third year 176 (71.8 %) of them were during the fourth year and 9 (3.7%) of them were during the fifth year and above (Table 3).

Table 3: Demographic data of the sample (N = 245)

Variables	Classes	N=245	%
Gender	Male	16	6.5
	Female	229	93.5
Age	18 years	14	5.7
	19 years	16	6.5
	20 years	30	12.2
	21 years or more	185	75.5
Year of Studies	First year	14	5.7
	Second year	16	6.5
	Third year	30	12.2
	Fourth year	185	75.5

5. Results

From the results of Principal Component Analysis it was evidence that both the Kaiser-Meyer-Olkin (KMO) index, equal to 0.861 and deemed very satisfactory as it exceeds the accepted value criterion (0.60), as well as Bartlett's Test of Sphericity ($\chi^2=2471,228$, $df=210$, $p<0.001$) have shown that the application of Factor Analysis on the Principal Components is permissible (Hair et al., 1995; Hair et al., 2005).

The table 4 that follows presents the results of principal components analysis for all of the statements on the entrepreneurial profile scale, from which it follows that the criterion of the eigenvalue or characteristic root (eigenvalue > 1), is verified for seven components/ factors/ conceptual constructs.

Self-Efficacy: The reliability of the factor Self-Efficacy according to Cronbach's alpha coefficient is $\alpha=0.738$ (Table 4). The composite reliability CR=0.823 is observed to be larger than 0.7 ($CR>0.7$), indicating internal consistency (Formell & Laarcker, 1981). AVE assumes the value 0.613 and also supports the subscale's reliability (Table 4) (Fornell & Lacker, 1981).

In addition the eigenvalue for the conceptual construct Self-Efficacy is 7.244 and it furnishes evidence that all of the items related to Self-Efficacy across all structures load on one factor with an eigenvalue over 1, fact that verifies convergent validity (Kim et al., 2008) (Table 4). More specifically, the conceptual construct Self-Efficacy with eigenvalue 7.244, interprets 14.610% of the total dispersion of the data, a percentage considered satisfactory (Hair et al., 1995; Hair et al., 2005), collects or is constructed from items 'Sel_Eff1: I believe I am very capable of organizing and executing actions

to be successful’, ‘Sel_Eff2: I have all the capacity needed to realize my professional/academic future’, ‘Sel_Eff3: I am sure I am competent enough to develop my career successfully’ and indeed with very high loads, 0.869, 0.832 and 0.626 respectively. From the eigenvalue or characteristic root criterion (eigen value ≥ 1) it is verified that the items Sel_Eff1, Sel_Eff2 and Sel_Eff3 represent the same conceptual construct (Table 4). The values of the Common Variance (Communalities) for items Sel_Eff1, Sel_Eff2 and Sel_Eff3 assume the values 0.783, 0.776 and 0.553, respectively, and exceed the value criterion (0.40), posed as the verification limit for the satisfactory quality of the items for factor/ conceptual construct Self-Efficacy.

The above extracted factor had an eigenvalue which met the criterion of being larger than 1 and the values of the loadings of the items of which the conceptual construct comprises support the acceptability of the convergent validity. More specifically, the three items, Sel_Eff1, Sel_Eff2 and Sel_Eff3 which construct the factor Self-Efficacy verify that the measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures should load on one factor with eigenvalue over 1, thus convergent validity is acceptable. In addition the loadings of all the previous items are over 0.50 and thus convergent validity is assessed (Wixon & Watson, 2001).

Opportunity Detector: The reliability of factor *Opportunity Detector*, according to the Cronbach alpha coefficient, is 0.784 and is high. Values of Cronbach’s α coefficient over 0.7 are considered as satisfactory (Spector, 1992; Nunnally, 1978). The composite reliability CR=0.817 is shown to be larger than 0.7 (CR>0.7), indicating internal consistency (Formell & Laarcker, 1981). AVE takes a value of 0.604 and supports the reliability of the Opportunity Detector subscale (Table 2) because values of the average variance extracted with the cut-off of 0.5 are considered as satisfactory (Fornell & Lacker, 1981). Furthermore the eigenvalue for the conceptual construct Opportunity Detector is 2.320 and thus is evidence that all the items of all the structures load on one factor with eigenvalue over 1 fact which verifies convergent validity (Kim et al., 2008) (Table 4).

More specifically, the conceptual construct Opportunity Detector with an eigenvalue of 2.320, interprets 10.875% of the total dispersion of the data, a percentage considered satisfactory (Hair et al., 1995; Hair et al., 2005), collects or is constructed from items ‘Opp_Det1: I frequently think of products/services that could be offered in the market’, ‘Opp_Det2: Whenever I observe people complaining about some products/services, I

think of the market opportunities that may be opening’, ‘Opp_Det3: I frequently imagine the possibility of success that certain products/services could have in a certain market’ were quite satisfy’ and, indeed, with very high loads, 0.857, 0.856 and 0.588 respectively. From the eigenvalue or characteristic root criterion ($\text{eigenvalue} \geq 1$) it is verified that the items Opp_Det1, Opp_Det2 and Opp_Det3 were quite satisfy and represent the same conceptual structure. The values of the Common Variance (Communalities) for items Opp_Det1, Opp_Det2 and Opp_Det3 assume the values 0.727, 0.799 and 0.813, respectively, and exceed the value criterion (0.40), posed as the verification limit for the satisfactory quality of the statements for factor Opportunity Detector.

The only extracted factor had an eigenvalue satisfying the criterion of being larger than 1 and the loadings of the items comprising the conceptual construct attest that convergent validity is acceptable. More specifically, the items Opp_Det1, Opp_Det2 and Opp_Det3 and verify that the measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures load on one factor with eigenvalue over 1, fact that suggests that convergent validity is acceptable (Kim et al., 2008). In addition, the loadings of all the previous items are over 0.50 and thus convergent validity is assessed (Wixon & Watson, 2001) (Table 4).

Sociable: The reliability of factor Sociable, according to the Cronbach alpha coefficient is 0.736 and is high. Values of Cronbach’s α coefficient over 0.7 are considered as satisfactory (Spector, 1992; Nunnally, 1978). The composite reliability $CR=0.780$ is shown to be larger than 0.7 ($CR>0.7$), indicating internal consistency (Formell & Laarcker, 1981). AVE takes a value of 0.553 and supports the reliability of the Sociable subscale/ conceptual construct (Table 4) because values of the average variance extracted with the cut-off of 0.5 are considered as satisfactory (Fornell & Lacker, 1981). Furthermore the eigenvalue for the conceptual construct Sociable subscale is 1.808 and thus is evidence that all the items of all the structures load on one factor with eigenvalue over 1 fact which verifies convergent validity (Kim et al., 2008) (Table 4).

More specifically, the conceptual construct named Sociable with an eigenvalue equal to 1.808 interprets 10.195% of the total dispersion of the data, a percentage considered satisfactory (Hair et al., 1995; Hair et al., 2005), collects items ‘Sociable1: I have a lot of friends’, ‘Sociable2: I can easily relate with other persons, even with those I still do not know’, ‘Sociable3: I like to be in contact with other persons’ and, indeed, with very high loadings 0.859, 0.816 and 0.505 respectively. From criterion ($\text{eigenvalue} \geq 1$) it is

verified that these 3 items represent the same conceptual construct. The values of the Common Variance (Communalities) for statements Sociable1, Sociable2 and Sociable3 assume the values 0.576, 0.837 and 0.785, respectively, and exceed the value criterion (0.40), posed as the verification limit for the satisfactory quality of the statements for factor Sociable (Table 4).

For only factor extracted, the value of its eigenvalue which meets the criterion of being larger than 1 and the loadings of the items comprising the conceptual structure support that the convergent validity is acceptable. More specifically, these 3 items Sociable1, Sociable2 and Sociable3 construct the factor Sociable and verify that that measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures should load on one factor with eigenvalue over 1, fact that verifies that convergent validity to be acceptable (Kim et al., 2008). In addition the loadings of all the items Sociable1, Sociable2 and Sociable3 are over 0.50 and thus convergent validity is assessed (Wixon & Watson, 2001).

Planner: The reliability of factor Planner, according to Cronbach's alpha coefficient, is 0.766 and is deemed high. Values of Cronbach's α coefficient over 0.7 are considered as satisfactory (Spector, 1992; Nunnally, 1978). The composite reliability CR=0.774 is shown larger than 0.7 (CR>0.7), indicating internal consistency (Formell & Laarcker, 1981). AVE takes the value 0.533 and thus supports the reliability of the Trust in Government' decision implementation of distance learning in all levels of education scale (Table 5) because values of the average variance extracted with the cut-off of 0.5 are considered as satisfactory (Fornell & Lacker, 1981) (Table 4).

Furthermore the eigenvalue for conceptual construct Planner is 1.148 interprets 10.163% of the total dispersion of the data, a percentage considered satisfactory (Hair et al., 1995; Hair et al., 2005), and it, thus, serves as evidence that all the items of all the structures should load on one factor with eigenvalue over 1, fact that verifies convergent validity (Kim et al., 2008) (Table 4).

More specifically, the conceptual construct Planner with an eigenvalue equal to 1.148 collects items 'Planner1: I have issues regarding my work/study always planned well in advance', 'Planner2: I have a detailed plan for my academic/professional issues', 'Planner3: I like to have the activities of my next year always well planned', and, indeed, with very high loadings 0.747, 0.737 and 0.705 respectively. The values of the Common Variance (Communalities) for statements Planner1, Planner2 and Planner3 assume the values 0.659, 0.740 and 0.735, respectively, and exceed the value criterion

(0.40), posed as the verification limit for the satisfactory quality of the statements for factor Planner. From criterion ($\text{eigenvalue} \geq 1$) it is verified that these 3 items Planner1, Planner2 and Planner3 represent the same conceptual construct. For only factor extracted, the value of its eigenvalue which meets the criterion of being larger than 1 and the loadings of the items comprising the conceptual structure support that the convergent validity is acceptable. More specifically, these 3 items, Planner1, Planner2, and Planner3 construct the factor Planner and verify that that measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures should load on one factor with eigenvalue over 1, fact that verifies that convergent validity (Kim et al., 2008). In addition, the loadings of all the items Planner1, Planner2 and Planner3 are over 0.50 and thus convergent validity is assessed (Wixom & Watson, 2001).

Table 3: Scale of Entrepreneurial Profile, Factors Loadings, Eigenvalues and Reliability and Validity Estimates

Construct	Eigenvalues	% of variance	Loadings	Communalities	Cronbach's alpha	CR	AVE	M	SD
Self-efficacy	7.244	14.610			.738	.823	.613	4.441	.6049
Sel_Eff1: I believe I am very capable of organizing and executing actions to be successful			.869	.783				4.38	.735
Sel_Eff2: I have all the capacity needed to realize my professional/academic future			.832	.776				4.46	.698
Sel_Eff3: I am sure I am competent enough to develop my career successfully			.626	.553				4.48	.802
Opportunity Detector	2.320	10.875			.784	.817	.604	4.298	.7088
Opp_Det1: I frequently think of products/services that could be offered in the market			.857	.727				4.07	.929
Opp_Det2: Whenever I observe people			.856	.799				4.43	.790

complaining about some products/services, I think of the market opportunities that may be opening

Opp_Det3: I frequently imagine the possibility of success that certain products/services could have in a certain market

Sociable	1.808	10.195		.736	.780	.533	2.957	1.014
Sociable1: I have a lot of friends			.859	.576			3.25	1.174
Sociable2: I can easily relate with other persons, even with those I still do not know			.816	.837			2.75	1.330
Sociable3: I like to be in contact with other persons			.505	.785			2.87	1.252
Planner	1.148	10.163		.766	.774	.533	3.378	.9249
Planner1: I have issues regarding my work/study always planned well in advance			.747	.659			3,33	1.112
Planner2: I have a detailed plan for my academic/professional issues			.737	.740			3,51	1.193
Planner3: I like to have the activities of my next year always well planned			.705	.735			3,30	1.051
Risk Taker	1.141	10.007		.790	.784	.452	3.852	.8435
Risk_Tak1: I like to be exposed to situations that involve some kind of risk			.782	.717			4.02	1.067
Risk_Tak2: To be successful in life, it is necessary to run some risks			.734	.738			4.05	.864
Risk_Tak3: A person that do not run some risks will rarely achieve a successful			.702	.769			3.48	1.070

academic/professional life								
Leader	1.049	9.247		.830	.703	.441	3.597	.9019
Leader1: I frequently influence other people's opinions			.678	.745			3.75	1.025
Leader2: It's easy for me to inspire other persons to do what I want			.659	.688			3.45	1.038
Leader3: I am frequently chosen as leader in academic/professional projects or activities			.650	.766			3.59	1.070
Creative	1.019	7.897		.804	.778	.539	3.669	.9058
Creative1: I repeatedly change the way I study/work			.774	.657			3.93	1.094
Creative2: I like to do tasks that are completely new everyday			.746	.768			3.32	1.093
Creative3: I do not like routine activities			.679	.699			3.76	1.019

Risk Taker: The reliability of factor Risk Taker according to Cronbach's alpha coefficient, is 0.790 and is deemed high. Values of Cronbach's α coefficient over 0.7 are considered as satisfactory (Spector, 1992; Nunnally, 1978). The composite reliability CR=0.784 is shown larger than 0.7 (CR>0.7), indicating internal consistency (Formell & Laarcker, 1981). AVE takes the value 0.452 and thus supports the reliability of the conceptual construct named Risk Taker (Table 4) because values of the average variance extracted with the cut-off of 0.5 are considered as satisfactory (Fornell & Lacker, 1981) (Table 4).

Furthermore the eigenvalue for the conceptual construct named Risk Taker is 1.141 and thus is evidence that all the items of all the structures load on one factor with eigenvalue over 1 fact which verifies convergent validity (Kim et al., 2008) (Table 4). The values of the Common Variance (Communalities) for statements 'Risk_Tak1: I like to be exposed to situations that involve some kind of risk', 'Risk_Tak2: To be successful in life, it is necessary to run some risks', 'Risk_Tak3: A person that do not run some risks will rarely achieve a successful academic/professional life' assume the values 0.717,

0.738 and 0.769, respectively, and exceed the value criterion (0.40), posed as the verification limit for the satisfactory quality of the statements for factor Risk Taker. More specifically, the conceptual construct Risk Taker, with an eigenvalue of 1.141 interprets 10.007% of the total dispersion of the data, a percentage considered satisfactory (Hair, 2005), collects or is constructed from items Risk_Tak1, Risk_Tak2 and Risk_Tak3 and, indeed, with very high loads, 0.782, 0.734 and 0.703 respectively. From the eigenvalue or characteristic root criterion ($\text{eigenvalue} \geq 1$) it is verified that the 3 items Risk_Tak1, Risk_Tak2 and Risk_Tak3 make up factor Risk Taker, and verify that the measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures load on one factor with eigenvalue over 1 fact that suggests that convergent validity is acceptable (Kim, 2008). In addition the loadings of all the items Risk_Tak1, Risk_Tak2 and Risk_Tak3 are over 0.50 and thus convergent validity is assessed (Wixon & Watson, 2001) (Table 4).

Leader: The reliability of factor Leader according to Cronbach's alpha coefficient, is 0.830 and is deemed high. Values of Cronbach's α coefficient over 0.7 are considered as satisfactory (Spector, 1992; Nunnally, 1978). The composite reliability CR=0.703 is shown larger than 0.7 ($\text{CR} > 0.7$), indicating internal consistency (Formell & Laarcker, 1981). AVE takes the value 0.441 and thus supports the reliability of the Leader scale (Table 6) because values of the average variance extracted with the cut-off of 0.5 are considered as satisfactory (Fornell & Lackner, 1981) (Table 4).

Furthermore the eigenvalue for the conceptual construct Leader is 1.049 and thus is evidence that all the items of all the structures load on one factor with eigenvalue over 1 fact which verifies convergent validity (Kim et al., 2008) (Table 4). The values of the Common Variance (Communalities) for statements Leader1: I frequently influence other people's opinions', 'Leader2: It's easy for me to inspire other persons to do what I want', 'Leader3: I am frequently chosen as leader in academic/professional projects or activities' assume the values 0.717, 0.738 and 0.769, respectively, and exceed the value criterion (0.40), posed as the verification limit for the satisfactory quality of the statements for factor Leader. More specifically, the conceptual construct Leader, with an eigenvalue of 1.049 interprets 9.247% of the total dispersion of the data, a percentage considered satisfactory (Hair et al., 1995; Hair et al., 2005), collects or is constructed from items Leader1, Leader2 and Leader3 and, indeed, with very high loads, 0.678, 0.659 and 0.650 respectively. From the eigenvalue or characteristic root criterion

(eigenvalue ≥ 1) it is verified that the 3 items Leader1, Leader2 and Leader3 make up factor Leader, and verify that the measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures load on one factor with eigenvalue over 1 fact that suggests that convergent validity is acceptable (Kim et al., 2008). In addition the loadings of all the items Leader1, Leader2 and Leader3 are over 0.50 and thus convergent validity is assessed (Wixon & Watson, 2001) (Table 4).

Creative: The reliability of factor/ conceptual construct Creative according to Cronbach's alpha coefficient, is 0.804 and is deemed high. Values of Cronbach's α coefficient over 0.7 are considered as satisfactory (Spector, 1992; Nunnally, 1978). The composite reliability CR=0.778 is shown larger than 0.7 (CR>0.7), indicating internal consistency (Formell & Laarcker, 1981). AVE takes the value 0.539 and thus supports the reliability of the Creative subscale (Table 6) because values of the average variance extracted with the cut-off of 0.5 are considered as satisfactory (Chin, 1998; Fornell & Lacker, 1981) (Table 4).

Furthermore the eigenvalue for the conceptual construct Leader is 2.912 and thus is evidence that all the items of all the structures load on one factor with eigenvalue over 1 fact which verifies convergent validity (Kim et al., 2008) (Table 4). The values of the Common Variance (Communalities) for statements 'Creative1: I repeatedly change the way I study/work', 'Creative2: I like to do tasks that are completely new everyday) and 'Creative3: I do not like routine activities' assume the values 0.657, 0.768 and 0.699, respectively, and exceed the value criterion (0.40), posed as the verification limit for the satisfactory quality of the statements for factor Creative.

More specifically, the conceptual construct Creative, with an eigenvalue of 2.912 interprets 7.897% of the total dispersion of the data, a percentage considered satisfactory (Hair, 2005), collects or is constructed from items Creative1, Creative2 and Creative2 'and, indeed, with very high loads, 0.774, 0.746 and 0.679 respectively. From the eigenvalue or characteristic root criterion (eigenvalue ≥ 1) it is verified that the 3 items 'Creative1: I repeatedly change the way I study/work', 'Creative2: I like to do tasks that are completely new every day and 'Creative3: I do not like routine activities' make up factor Creative', and verify that the measurements/items lead to the same results and render convergent validity acceptable (Spector, 1992; Churchill, 1979). All structures load on one factor with eigenvalue over 1 fact that suggests that convergent validity is acceptable (Kim et al., 2008). In addition the loadings of all the items

‘Creative1: I repeatedly change the way I study/work’, ‘Creative2: I like to do tasks that are completely new every day and ‘Creative3: I do not like routine activities’ make up factor Creative are over 0.50 and thus convergent validity is assessed (Wixom & Watson, 2001) (Table 4).

The Cronbach alpha coefficient regarding the total instrument was equal to $\alpha=0.900$, fact that reveal the reliability of the instrument. The measurement model fits the observed data ($\chi^2=869.93$, $\chi^2/df=1.78$, CFI=0.95, GFI=0.94, RMSEA=0.04, AGFI=0.90, IFI=0.95) well (Burns, & Bush, 1995; Chin, 1998).

The following table, table 5, presents the intercorrelations across the 7 conceptual constructs used in this study plus an item measures the attitude toward entrepreneurship. An assessment of the bivariate correlations indicates that all of the correlations are significant and are in the expected direction. The strongest correlation was between the conceptual constructs Leader and Creative ($r=0.663$, $p<0.001$). The second strongest correlation was between the conceptual constructs Leader and Risk Taker ($r=0.598$, $p<0.01$) whereas the third strongest correlation was between the conceptual constructs Creative and Planner ($r=0.594$, $p<0.01$) following by the correlation between the conceptual constructs Creative and Risk Taker ($r=0.586$, $p<0.01$) and by the correlation between the conceptual constructs Leader and Planner ($r=0.518$, $p<0.01$). Equally statistical significant were the correlations between the conceptual constructs Leader and Sociable ($r=0.498$, $p<0.01$) and between the conceptual constructs Risk Taker and Planner ($r=0.495$, $p<0.01$). As far as the correlations between Entrepreneurship conceptual construct and entrepreneurial profile’ conceptual constructs concerns that correlation analysis revealed significant correlations at a significant level of 99%. More specifically, the strongest correlation was between the conceptual constructs Leader and Entrepreneurship ($r=0.430$, $p<0.01$), the second strongest correlation was between the conceptual constructs Opportunity Detector and Entrepreneurship ($r=0.414$, $p<0.01$), whereas the third strongest correlation was between the conceptual constructs Creative and Entrepreneurship ($r=0.410$, $p<0.01$). Equally statistical significant were the correlations between the conceptual constructs Sociable and Entrepreneurship ($r=0.348$, $p<0.01$), between the conceptual constructs Planner and Entrepreneurship ($r=0.342$, $p<0.01$), between the conceptual constructs Risk Taker and Entrepreneurship ($r=0.336$, $p<0.01$) and between the conceptual constructs Self-Efficacy and Entrepreneurship ($r=0.266$, $p<0.01$).

Table 5: Correlation Estimates

	Entrepreneurship	Self- efficacy	Opportunity Detector	Sociable	Planner	Risk Taker	Leader	Creative
Entrepreneurship	1							
Self-Efficacy	.266**	1						
Opportunity Detector	.414**	.397**	1					
Sociable	.348**	.104	.359**	1				
Planner	.342**	.159*	.239**	.397**	1			
Risk Taker	.336**	.312**	.326**	.381**	.495**	1		
Leader	.430**	.235**	.310**	.498**	.518**	.598**	1	
Creative	.410**	.285**	.285**	.360**	.594**	.586**	.663**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

In addition the seven hypothesized effects were supported (Table 6). Thus it is evident that the conceptual constructs Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative have a positive effect on entrepreneurship.

Table 6: Hypotheses Testing

Hypotheses	Standardized estimates	p-value	Results
Ho1: Self-Efficacy has a positive effect on entrepreneurship	.39	<0.001	Supported
Ho2: Opportunity Detector has a positive effect on entrepreneurship	.51	<0.001	Supported
Ho3: Sociable has a positive effect on entrepreneurship	.49	<0.001	Supported
Ho4: Planner has a positive effect on entrepreneurship	.38	<0.001	Supported
Ho5: Risk Taker has a positive effect on entrepreneurship	.38	<0.001	Supported
Ho6: Leader has a positive effect on entrepreneurship	.27	<0.001	Supported
Ho7: Creative has a positive effect on entrepreneurship	.22	<0.001	Supported

Among the dimensions, the highest mean level of perceptions was 4.441 for Self-efficacy conceptual construct and the lowest mean level was 2/957 for Sociable conceptual construct (Table 7).

Table 7: Mean Score and Standard Deviation (SD) of Students' Perceptions and Expectations Regarding Educational Service Quality (N = 245)

Conceptual constructs of Entrepreneurial profile and Entrepreneurship	Mean $\pm$ SD
Self-Efficacy	4.441 $\pm$ 0.6049
Opportunity Detector	4.298 $\pm$ 0.7088
Sociable	2/957 $\pm$ 1.0144
Planner	3.378 $\pm$ 0.9249
Risk Taker	3.852 $\pm$ 0.8435
Leader	3.597 $\pm$ 0.9019
Creative	3.669 $\pm$ 0.9058
Entrepreneurship	3.89 $\pm$ 0.950

It should be pointed out that there was no statistically significant relation between the gender and students' entrepreneurial profile, attitude and behavior (Table 8).

Table 8. The Relationship between Students' Gender and Entrepreneurship (N = 245)

Entrepreneurial profile, attitude and behavior	Gender	N	Mean $\pm$ SD	P Value
	Male	16	3.94 $\pm$ 0.680	.836
	Female	229	3.89 $\pm$ 0.967	

In addition there was not any statistically significant relation between gender and Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative conceptual constructs (Table 9).

Table 9: The Relationship between Students' Gender and students' entrepreneurial profile, attitude and behavior

Entrepreneurial profile, attitude and behavior	Gender	N	Mean $\pm$ SD	P Value
Self-Efficacy	Male	16	4.3750 $\pm$ 0.80623	p=0,654
	Female	229	4.4454 $\pm$ 0.59033	
	Male	16	4.2708 $\pm$ 0.78144	p=0.875

Opportunity Detector	Female	229	4.2999±0.70527	
Sociable	Male	16	3.0208±0.99233	p=0.794
	Female	229	2.9520±1.01793	
Planner	Male	16	3.3958±0.84519	p=0.937
	Female	229	3.3770±0.93191	
Risk Taker	Male	16	3.9375±0.77190	p=0.675
	Female	229	3.8457±0.84953	
Leader	Male	16	3.6042±0.88793	p=0.975
	Female	229	3.5968±0.90481	
Creative	Male	16	3.5417±1.02470	p=0.561
	Female	229	3.6783±0.89881	

Conclusions

The objective of current study is to evaluate Greek students' Entrepreneurial Profile, attitude and behavior through multidimensional statistical analysis. The structural equation model verified the measurement model fit regarding the observed data. Thus the conceptualized model that describes of Greek students' Entrepreneurial Profile, attitude and behavior. The model revealed that the Entrepreneurial Profile consist of conceptual constructs named Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative. The strongest correlation was between the conceptual constructs Leader and Entrepreneurship, the second one was between the conceptual constructs Opportunity Detector and Entrepreneurship and the third one was between the conceptual constructs Creative and Entrepreneurship. In addition the study made it evidence that the strongest correlation was between the conceptual constructs of entrepreneurial profile was between Leader and Creative, the second strongest one was between Leader and Risk Taker whereas the third strongest one was between Creative and Planner. These results proved that leadership influence people, motivate their creativity, inspire entrepreneurs' goals, develop business networks and establish trust on the market place. In addition leadership and planner behaviour are important parameters in order to put the basis for innovative business plans. The results also made evidence that there was no statistically significant relation between the gender and students' entrepreneurial profile, attitude and behavior.

Still a lot of empirical research need to be done regarding students' entrepreneurial profile and behavior orientation. Universities should and must pay attention to their

curriculum regarding to Entrepreneurship courses in order to prepare future dynamic entrepreneurs and successful investors.

References

Alevriadou, A. Anastasiadou S. & Damianidou, D. (2014). Reliability and validity of the “Reading-free Vocational Interest Inventory (R-FVII)” in adolescents and adults with intellectual disabilities. *Procedia - Social and Behavioral Sciences* 114, 388 – 393.

Anastasiadis L. (2020). Emotional Intelligence Influences on Consumers Consumer Behavior. *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC*, Vol 2, Iss1, <https://hephaestus.nup.ac.cy/bitstream/handle/11728/11527/article1.pdf?sequence=1&isAllowed=y>.

Anastasiadis, L., Anastasiadou, S. & Iakovidis, G. (2016). *Malcolm Baldrige National Quality Award (MBNQA) dimensions in Greek Tertiary Education System*. 8th International Conference ‘The Economies of Balkan and Eastern Europe Countries in the changed world’, EBEEC 2016, Split, Croatia. *KnowledgeE Publishing-the Economies of Balkan and Eastern Europe Countries in the Changed World (EBEEC)* | pages 436-455.

Anastasiadis, L. & Christoforidis, C. (2019). Evaluating citizens’ actual perceptions and expectations and assessing e-Service Quality Gap in Public Sector related to e-Government Services, *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC*, Vol. 1 – Iss. 1. <http://hephaestus.nup.ac.cy/bitstream/handle/11728/11395/Paper5.pdf?sequence=1&isAllowed=y>.

Anastasiadou, S. (2006). *Factorial validity evaluation of a measurement through principal components analysis and implicative statistical analysis*. In D.X.Xatzidimou, K. Mpikos, P.A. Stravakou, & K.D. Xatzidimou (eds), 5th Hellenic Conference of Pedagogy Company, Thessaloniki, pp. 341-348.

Anastasiadou S., (2007). It’s the men’s world: Greek males’ students believe that the women’s position must be home with the kids. *The International Journal of Interdisciplinary Social Sciences*, Volume 2, Issue 5, pp.123-132.

Anastasiadou S. (2008). Exploring Intrinsic and Extrinsic Motivation during a PhD completion with the aid of Principal Components Analysis. *The International Journal of Interdisciplinary Social Sciences*, Volume 3, Issue 2, pp. 171-178.

Anastasiadou S. (2009). The effects different modes of representations in statistical problems solving: A study with third grade primary school pupils. *The International Journal of Learning*, Volume 16, Issue 4, pp.27-36.

Anastasiadou S. (2011). Reliability and validity testing of a new scale for monitoring attitudes toward learning statistics with technology. *Acta Didactica Napocencia*, vol. 4 number 1, pp. 1-10. <http://adn.teaching.ro/>.

Anastasiadou, S. (2012a). Structural Equation Modelling in the Construction of a Structural Model of the Repercussions and Consequences in the Greek society and economy of Balkan and Eastern Europe Countries immigrants' entrance. *International Review of Applied Economic Research*, Vol.6. No.1-2, pp1-9.

Anastasiadou S. (2012b). Evaluating a structural equation model measuring lifelong learning and continuing education factors. *The International Journal of Knowledge, Culture and Change Management*, Volume 12, Issue 3, pp.21-34.

Anastasiadou S. (2012c). Diversifications between expected and perceived attitudes toward learning statistics with technology. *The International Journal of Learning*, vol 18, Issue 3, pp.161-176.

Anastasiadou S. (2013a). Evaluating a Structural Equation Model Measuring Attitudes toward Reading Books and E-books. *The International Journal of the Book*, vol 10, pp.1-10.

Anastasiadou S. (2013b). Evaluating a structural equation model measuring lifelong learning and continuing education factors. *The International Journal of Knowledge, Culture and Change Management*. Volume 12, Issue 3, pp.21-34.

Anastasiadou S. (2013c). Developing and Evaluating a Structural Equation Model Measuring Leadership Changes in a Lifelong Learning World. *The International Journal of Educational Organization and Leadership*, Volume 19, Issue 2, pp.1-17.

Anastasiadou, S. (2014). A structural equation model describes factors affecting Greek students' consumer behavior. *Procedia Economics and Finance*. Volume 9, pp. 402–406.

Anastasiadou, S. (2015). The Roadmaps of the Total Quality Management in the Greek Education System according to Deming, Juran and Crosby in light of EFQM Model. *Procedia Economics and Finance*, vol. 33 pp. 562 – 572.

Anastasiadou, S. (2018a). *Gap analysis between perceived and expected of service quality in Greek Tertiary Education*. Proceedings of EDULEARN18: 10th annual International Conference on Education and New Learning Technologies Palma de Mallorca, Spain, pp. 8373-8382. doi:10.21125/edulearn.2018.1951.

Anastasiadou, S. (2018b). Evaluating Perception, Expectation of Students/Pre-service Teachers and Service Quality Gap in Greek Tertiary Education. *KnE Social Sciences | The Economies of the Balkan and the Eastern European Countries in the changing World (EBEEC 2018) |* pages: 294–308.

Anastasiadou, S. (2018c). *Leadership according to EFQM Model in Tertiary education: The case of Greek Universities*. Proceedings of 10th International Conference The Economies of the Balkan and the Eastern European Countries in the changing world, EBEEC 2018, Warsaw, Poland, pp. 20-24.

Anastasiadou, S. (2018d). *Total quality management in Greek Tertiary Educational System: The case of Greek Universities*. Proceedings of 10th International Conference EBEEC 2018 - The Economies of the Balkan and the Eastern European Countries in the changing world, Warsaw, Poland, pp. 59-64.

Anastasiadou, S. (2019). *Comparison of contemporary advanced statistical methods regarding construct validity evaluation of TEIQue-SF instrument: Statistical Implicative Analysis vs. Principal Components Analysis*. 9ème Colloque International sur Analyse Statistique Implicative (ASI 10). Belfort – France. pp. 148-163.

Anastasiadou, S. & Anastasiadis, L. (2011). Reliability and validity testing of a new scale for monitoring attitudes toward electronics and electrical constructions subject. *International Journal of Applied Science and Technology (IJAST)*, Vol 1, No 1, pp. 1-10.

Anastasiadou S. & Anastasiadis L. (2019). *Quality Assurance in Education in the Light of the Effectiveness of Transformational School Leadership*. In: Sykianakis N., Polychronidou P., Karasavvoglou A. (eds) *Economic and Financial Challenges for Eastern Europe*. Springer Proceedings in Business and Economics. Springer, Cham, pp. 323-344. https://doi.org/10.1007/978-3-030-12169-3_21.

Anastasiadou, S., Anastasiadis, L, Vandikas, J. & Angeletos, T. (2010a). Implicative statistical analysis and Principal Components Analysis in recording students' attitudes toward electronics and electrical constructions subject. *The International Journal of Technology, Knowledge and Society*, Volume 16, Issue 5, pp. 341-356.

Anastasiadou, S. Anastasiadis, L, Angeletos, T. & Vandikas J. (2010b). A Multidimensional Statistical Analysis of Students' Attitudes toward Physics *International Journal of Diversity in Organisations, Communities and Nations* Volume 16, Issue 5, pp. 341-356.

Anastasiadou S., Anastasiadis L. Kalabouka K. Florou G. (2014). Ethnocentrism, patriotism and animosity impact on freedom of competition and business activity. *Wseas Transactions on Business and Economics*, Vol 11, pp. 692-699.

Anastasiadou, S.D, Fotiadou, X.G. & Anastasiadis, L. (2016a). Estimation of Vocational Training School (IEK) students' contentment in relation to quality of their studies. *New Trends and Issues Proceedings on Humanities & Social Sciences*, [On line].10, pp 09-18. Available from: www.prosoc.eu.

Anastasiadou, S.D, Florou, G.S, Fotiadou, X.G. & Anastasiadis, L. (2016b). Evaluation of the satisfaction of preservice educators of Primary Education from their work and faithfulness to their work. *New Trends and Issues Proceedings on Humanities and Social Sciences*. [On line].10, pp35-41. Available from: www.prosoc.eu.

Anastasiadou, S. & Giossi, S. (2018). *Implicative Statistical Analysis vs. Confirmatory Factor Analysis in evaluation of Lifelong Learning Impact on Human Resources Development*. Proceedings of CERI2018: 12th annual International Conference on Education and New Learning Technologies, Seville (Spain) pp. 6413-6413.

Anastasiadou S., Karakos, A. (2011). The beliefs of electrical and computer engineering students' regarding computer programming. *The International Journal of Technology, Knowledge and Society*, Vol 7. Issue 1, pp.37-52.

Anastasiadou, S. & Kofou, I. (2013a). The Development of a Structure Equation Model, for Goal Achievement and Preparation for a Future Education Leader. *The International Journal of Educational Organization and Leadership* 19 (2): 41-55.

Anastasiadou, S. & Kofou, I. (2013b). *Incorporating Web 2.0 Tools into Greek Schools*. *International Journal of Technologies in Learning*, Volume 20, Issue 1, pp.11-23.

Anastasiadou S. Loukas D. (2009). Greek pre-service teachers' cognitive abilities in understanding the concept of frequency: A multilevel statistical analysis. *The International Journal of Learning* Volume 16, Issue 5, pp.189-202.

Anastasiadou, S. & Panitsides, E. (2014). *And now whither..? European Union lifelong learning policy: a two level analysis*. Proceedings of EBEEC 2014. The 6th International Conference Economies of Balkan and Eastern Europe Countries in the changed world EBEEC 2014, Nis, Serbia, pp. 42-51.

Anastasiadou S., Pappa A. (2009). Structural Equation Modelling in the Construction of Structural Model of Educational Research. *The International Journal of Interdisciplinary Social Sciences*, Vol 4, Issue 5, pp.151-158.

Anastasiadou, S. & Pappa. A. (2019). *Greek pre-service teachers' perceptions, emotions and attitudes toward representations of physic concepts*. ICERI2019, the 12th annual International Conference of Education, Research and Innovation, Seville (Spain), ICERI2019, pp. 8987-8992.

Anastasiadou, S. & Papadaki, Z. (2019). Consumers' perceptions toward E-Service Quality, Perceived Value, Purchase and Loyalty Intentions. *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC*, Vol 1, Issue 1, <https://hephaestus.nup.ac.cy/bitstream/handle/11728/11391/paper1.pdf?sequence=1&isAllowed=y>.

Anastasiadou, S. & Taraza, E. (2019a). *Total Quality Management: Implementation of the Six Sigma Methodology for Improving Quality in Higher Education*. ICERI2019, the 12th annual International Conference of Education, Research and Innovation, Seville (Spain), ICERI2019, pp. 9533-9537.

Anastasiadou S. & Taraza, E. (2019b). *Pre-service teachers' perceptions toward leadership regarding the MBVQA Model*. 11th annual International Conference on Education and New Learning Technologies, Palma de Mallorca, Spain, EDULEARN 19, pp. 533-543.

Anastasiadou S. & Taraza, E. (2019c). *The structure and paths of Malcolm Baldrige National Quality Award (MBNQA) dimensions applied in Greek Tertiary educational systems dimensions in Greek Tertiary Education System*. 11th annual International Conference on Education and New Learning Technologies, Palma de Mallorca, Spain, EDULEARN 19, pp. 455-463.

Anastasiadou, S. & Taraza, E. (2020a). *Resistance to Change as an Obstacle Regarding Quality in Higher Education Institutions (HEIS)*. Proceedings of of 14th annual International Technology, Education and Development Conference (INTED2020), Valencia, Spain, pp. 396-401.

Anastasiadou, S. & Taraza, E. (2020b). *Six Sigma in Tertiary Education: A Win of Change regarding Quality Improvement in Education*, Proceedings of of 14th annual International Technology, Education and Development Conference (INTED2020), Valencia, Spain, pp. 9595-9601.

Anastasiadou S., Tiliakou C. (2014). Classical Item Analysis of the Greek State of English Language Proficiency “A” Level Exam. *The International Journal of Literacies*, Volume 20, Issue 3, pp.39-53.

Anastasiadou, S. & Zirinolou, P. (2014). Reliability testing of EFQM scale: The case of Greek secondary teachers *Procedia - Social and Behavioral Sciences* Volume 143, pp. 990–994.

Anastasiadou, S. & Zirinoglou P. (2015a). Teachers’ attitudes toward Quality Assurance Dimensions regarding EFQM Model in Primary Education in Greece, *Procedia Economics and Finance*, vol. 33, pp. 411-431.

Anastasiadou, S. & Zirinoglou P. (2015b). EFQM dimensions in Greek Primary Education System. *Procedia Economics and Finance*, vol 33, pp. 411 – 431.

Anastasiadou, S. Zirinoglou, P. (2020a). Quality assessment in Greek Tertiary Education using Gap Analysis. *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC*. Vol 2, Issue 1, <http://hephaestus.nup.ac.cy/handle/11728/11531>.

Anastasiadou, S. Zirinoglou, P. (2020b). Reliability and Validity Analysis of validity testing of a new scale for monitoring Students Attitudes toward Entrepreneurship Courses (SATEC). *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC* Vol 2, Issue 1, <http://hephaestus.nup.ac.cy/handle/11728/11530>.

Anastasiadou, S., Zirinoglou, P., Karasavoglou, A., Florou, G. (2016c). Total Quality Management in Education: The case of Primary and Secondary Education for the implementation of the best educational policy. *Data Analysis, Bulletin* 17, 110-130.

- Bacigalupo, M., Kampylis, P., Punie, Y. & Van den Brande, G. (2016). *EntreComp: The Entrepreneurship Competence Framework*. Luxembourg: Publication Office of the European Union; EUR 27939 EN; doi:10.2791/593884.
- Baron, R.A. & Markman, G.D. (2000). Beyond social capital: How social skills can enhance entrepreneurs success. *Academy of Management Executive*, 14(1).
- Basu, A. & Virick, M.(2008). *Assessing entrepreneurial intentions amongst students: A comparative study*. Retrieved from http://works.bepress.com/anuradha_basu/12/ [Accessed: December 15, 2015].
- Béchar, J., & Grégoire, D. (2005). Entrepreneurship Education Research Revisited: The Case of Higher Education. *Academy of Management Learning & Education*, 4(1), 22-43. Retrieved July 19, 2020, from www.jstor.org/stable/40214261.
- Burns, A.C. & Bush, R.F. (1995). *Marketing Research*. Englewood Cliffs, NJ: PrenticeHall.
- Chen, C.C., Greene, P.G. & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13.
- Chin. W. W. (1998). Issues and opinion on structural equation modeling, *Mis Quarterly*, 22(1), pp 7-16.
- Churchill, G.A. (1979). A paradigm for developing better measures for marketing constructs. *Journal of Marketing Research*, 16, pp 64-73.
- Cohen, R.T., Monlaque, P., Nathason. L.S., & Swerdlik, M.E. (1988). *Psycholoical testing: An introduction to tests of measurement*. Mountain Viw, CA: Mayfield Publishing Company.
- Croanbach, L.J. (1984). *Essentials of psychological testing* (4th ed.). New York: Harper & Row.
- Drucker, P.F. (1985). *Innovation and Entrepreneurship* (2nd ed.). Oxford, UK: Butterworth-Heinemann
- Florou, G., Anastasiadou, S., Karasavvoglou, A., S, Valsamidis, S, Mandilas A. (2015). *Greek Public Tertiary Education Departments in Agriculture*. Proceedings of the 7th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA), Kavala, Greece, pp. 471-479.

Fornell C. & Larcker D. (1981). Evaluating Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, pp 39-50.

Franke, N., and Lüthje, C. (2004). Entrepreneurial intentions of business students: a benchmarking study. *Int. J. Innov. Technol. Manag.* 01, 269–288. doi: 10.1142/S0219877004000209.

Carland, J.W., Hoy, F., Boulton, W.R. & Carland, J.A.C. (1984). Differentiating entrepreneurs from small business owners: A conceptualization. *The Academy of Management Review*, 9(2), 354.

Gelderen, M. van, Brand, M., van Praag, M., Bodewes, W., Poutsma, E. & van Gils, A. (2008). Explaining entrepreneurial intentions by means of the theory of planned behaviour. *Career Development International*, 13(6), 538-559.

Chin W. W. (1998). Issues and opinion on structural equation modeling, *Mis Quarterly*, 22(1), pp 7-16.

Giacomin, O., Janssen, F., Pruett, M., Shinnar, R.S., Llopis, F. & Toney, B. (2011). Entrepreneurial intentions, motivations and barriers: Differences among American, Asian and European students. *International Entrepreneurship and Management Journal*, 7, 219–238.

Giossi, S., Anastasiadou, S., Gamanis, A. & Gamanis G. G. (2019). Tracing the concept of entrepreneurship and the role of an entrepreneur: A critical review. *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC*, Vol 1, Issue 1, <https://hephaestus.nup.ac.cy/bitstream/handle/11728/11394/Paper4.pdf?sequence=1&isAllowed=y>.

Gürol, Y. & Atsan, N. (2006). Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey. *Education Training*, 48(1), 25-38.

Hair, J., Anderson, R., Tatham, R. & Black, W. (1995). *Multivariate Data Analysis With Raedings*, p.373. USA: Prentice-Hall International, Inc.

Hair, F.J., Black C.W., Badin, N.J., Anderson, E.R. & Tatham, R.L. (2005). *Multivariate Data Analysis*. New Joursey, Pearson Education Inc.

Herrington, M., Kew, J. & Kew, P. (2009). *Tracking entrepreneurship in South Africa: A GEM perspective*. Cape Town: University of Cape Town.

Iqbal, A., Melhem, Y. & Kokash, H. (2012). Readiness of the university students towards entrepreneurship in Saudi private university: An exploratory study. *European Scientific Journal*, 8(15): 109-131.

Kassean, H., Vanevenhoven, J., Liguori, E., and Winkel, D. (2015). Entrepreneurship education: a need for reflection, real-world experience and action. *Int. J. Entrep. Behav. Res.* 21, 690–708. doi: 10.1108/IJEBr-07-2014-0123.

Kaseorg, M. & Raudsaar, M. (2013). *Students' Attitudes toward Entrepreneurship*. *International Journal of Business and Management Studies*, CD-ROM. ISSN: 2158-1479: 2(2):31–43.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision support systems*, 44(2), pp.544-564.

Kofou, I., Anastasiadou S. (2013). Language and Communication Needs Analysis in Intercultural Education. *The International Journal of Diversity in Education*. Vol 12, pp.15-64.

Longenecker, J.G., Petty, J.W., Palich, L.E. & Hoy, F. (2016). *Small business management: Launching & Growing Entrepreneurial Ventures*. Cengage Learning.

Lumpkin, G.T. & Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *The Academy of Management Review*, 21(1), 135-173.

Markman, G. D., & Baron, R. A. (2003). Person-entrepreneurship fit: why some people are more successful as entrepreneurs than others. *Human Resource Management Review*, 13(2), 281–301. [https://doi.org/10.1016/S1053-4822\(03\)00018-4](https://doi.org/10.1016/S1053-4822(03)00018-4).

Masouras, A. (2019). Young entrepreneurship in Cyprus. *Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie*, 42(2), 27-42.

Masouras, A. (2019). *Entrepreneurship in Small and Medium-Sized Enterprises*. Nova Science Publishers: NY.

Mentoor, E.R. & Friedrich, H.C. (2007). Is entrepreneurial education at South African universities successful? An Empirical Example. *Industry & Higher Education*, 21(3), p. 222-223.

Moruku, R.K. (2013). Does entrepreneurial orientation predict entrepreneurial behaviour? *International Journal of Entrepreneurship*, 17, 41-60.

Nunnally, C.J. (1978). *Psychometric Theory*. New York: McGraw Hill Book Co.

Panitsides, E., Anastasiadou S. (2015). Lifelong Learning Policy Agenda in the European Union: A bi-level analysis. *Open Review of Educational Research*, 2015 Vol. 2, No. 1, 128–142, <http://dx.doi.org/10.1080/23265507.2015.1043936>, Routledge.

Papadaki, Z.E., Anastsasiadou, S.D. (2019). *Evaluating Perception, Expectation of Consumers, and Service Quality Gap in Greek Banking in a Period of Financial Crisis and Capital Controls*. In: Sykianakis N., Polychronidou P., Karasavoglou A. (eds) *Economic and Financial Challenges for Eastern Europe*. Springer Proceedings in Business and Economics. Springer, Cham, pp. 67-80. https://doi.org/10.1007/978-3-030-12169-3_5.

Robinson, P.B., Stimpson, D.V, Huefner, J.C. & Hunt, H.K. (1991). An attitude approach to the prediction of entrepreneurship. *Entrepreneurship: Theory & Practice*, 15(4), 13-31.

Schmidt, S., Bohnenberger, M.C., Panizzon, M., Silvana Regina Ampessan-Marcon, S.R., Toivonen, E., Lampinen, M. (2018). Students entrepreneurial behaviour: an eight-construct scale validation, *International Journal of Entrepreneurship*, Vol.2, Iss. 2. pp. 1-20: doi: 1939-4675-22-2-151

Sonitaris V., Zerbinati, S.& Andreas, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4): 566-591.

Souravlas, S., Anastasiadou, S. (2020a). Pipelined Dynamic Scheduling of Big Data Streams. *Applied. Sciences*. 10, 4796.

Souravlas, S., Katsavounis, S. & Anastasiadou, S. (2020b). On Modeling and Simulation of Resource Allocation Policies in Cloud Computing Using Colored Petri Nets. *Applied Sciences*. 020, 10(16), 5644; <https://doi.org/10.3390/app10165644>.

Spector P.E. (1992). *Summated Rating Scale Construction: An Introduction*. Sage University Paper Series on Quantitative Application in the Social Sciences. Newbury Park, CA.

Taraza, E. & Anastasiadou, S. (2019a). *Evaluation of Total Quality Management (TQM) in Greek Higher education Using advanced statistical methodologies*. ICERI2019, the 12th annual International Conference of Education, Research and Innovation will be held in Seville (Spain), ICERI2019, pp. 9450-9460.

Taraza, E. & Anastasiadou, S. (2019b). *EFQM Excellence Model in Vocational Lyceum: Reliability and Validity of EFQM Instrument*. Proceedings of 13th annual International Technology, Education and Development Conference (INTED2019), Valencia, Spain, pp. 2273-2285.

Taraza, E.I. & Anastasiadou, S.D. (2019c). Personality traits in the light of the effectiveness of transformational vocational school leadership and leaders. *New Trends and Issues Proceedings on Humanities and Social Sciences*. [Online]. 6(1), pp 184–191. Available from: www.prosoc.eu.

Thapa, K.B. Okalidou, A., Anastasiadou S. (2016). Teachers' screening estimations of speech–language impairments screening estimations of speech–language. *International Journal of Language & Communication Disorders*. Vol. 51, No. 3, 310–327.

Theodoridou, E., Alevriadou, A., Semoglou, A. Anastasiadou, S. (2014). Investigating Memory Strategies and Motor Memory in Dyslexic and Non-dyslexic Children, *International Journal of Learner Diversity and Identities*, Volume 20, Issue 3, pp.25-44.

Wixon, B.H & Watson, H.J. (2001). An empirical investigation of the factors affecting data warehousing. *MIS Quarterly* 25(1), pp 17-41.

Wei X, Liu X and Sha J (2019) How Does the Entrepreneurship Education Influence the Students' Innovation? Testing on the Multiple Mediation Model. *Front. Psychol.* 10:1557. doi: 10.3389/fpsyg.2019.01557

Zirinolou, P. (2020). Students' attitudes towards the subject of entrepreneurship in education. *International Journal of Entrepreneurship and Innovative Competitiveness – IJEIC*, Vol 2, Issue 1, <http://hephaestus.nup.ac.cy/>.

