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The Relationship Between Personality Factors, Vocational Identity and Career Decision-Making Self-Efficacy

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Abstract

Context: Adolescence is the training ground for adult life. In a relatively short period, the adolescent will undergo a metamorphosis. During the high school years, the majority of adolescents move from persistent dependence to true independence, from logical thinking to abstract, complex and hypothetical thinking, from impulsivity to consideration and from a diffuse feeling about one's own person to a reasonably defined self-identity. Adolescent's vocational identity formation during high school is an extremely important process in vocational and career counseling, because it helps them to make rational choices regarding the choice of a career gaining an increased level of career maturity.

Methods: The present study had as participants 300 Romanian teenagers which belong to the following paths of studies/profiles: formal sciences (specializations: Mathematics-informatics and Natural Sciences), services (specializations: Economics, trade, tourism and food) and humanities (specialization: Philology). The tools used in the adolescent evaluation process were Career Decision-Making Self-Efficacy-Short Form Scale (CDMSE-SF), the Vocational Identity Status Assessment (VISA) and the NEO Five-Factor Inventory (NEO-FFI-3).

Results: After the interpretation of the obtained results, the following aspects were demonstrated: The identity status *career commitment* correlates with the personality traits - neuroticism, extraversion, openness to experience and conscientiousness, and regarding

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the career decision-making self-efficacy it correlates with the self-evaluation process, obtaining information about self and professions, setting goals, career planning and the problem-solving process. Identity status *identification with career commitment* correlates with personality traits - extraversion, openness to experience and conscientiousness, and from the perspective of the career decision-making self-efficacy, it correlates with the process of self-evaluation, obtaining information about self and professions, setting goals, solving problems and career planning. The identity status *career commitment flexibility* correlates with the personality traits neuroticism and conscientiousness, and from the perspective of the career decision-making self-efficacy it correlates with the problem-solving process. Identity status *career self-doubt* correlates positively with the personality trait neuroticism and negatively with conscientiousness, the process of self-evaluation, obtaining information about self and professions, setting goals, career planning and problem solving.

Conclusion: The main purpose of this study was to investigate the relationship between vocational identity, personality factors and career decision-making self-efficacy. The results demonstrated that certain personality traits, respectively certain components of career decision-making self-efficacy are predictors for the adolescent's vocational identity formation.

Keywords: Adolescents, Career Decision-Making Self-Efficacy, Personality Factors, Predictors, Vocational Identity, VET, Vocational and Training

1 Introduction

The concept of self-efficacy was launched and grounded by Bandura (1999; Bandura et al., 2003). In his view, self-efficacy judgments influence:

> *The choice of situations in which we engage, the amount of effort put into a given situation, the length of time we persist in a task, overcoming obstacles and resistance to difficulties, emotional reactions during anticipation of the situation or involvement in that situation. (Opre, 2006, p. 172)*

Self-efficacy becomes a strong determinant and predictor of the individual's performance level, as a result of various influences, presented in the first table.

Table 1: Diversity of Self-Efficacy Influences (Miclea & Lemeni, 2010, pp. 63-64; as cited in Davidescu, 2019, p. 144)

Self-efficacy influences	*Description*
Pattern of thought	• *The ability of the individual to establish his goal is influenced by the self-assessment of his own capabilities.* • *The individual's course of action is first organized at the level of thought.* • *Those who have a high level of self-efficacy visualize scenarios with positive outcomes (successes).* • *Those who have lack of confidence in their effectiveness usually create scenarios representing failures.*
Motivational processes	• *The type of causal attributions. People who perceive themselves as having a high level of self-efficacy attribute their failures to low efforts. Those with low self-efficacy argue that their failures are due to a lack of skills.* • *The expected results. Many people with low self-efficacy refuse countless attractive opportunities with high chances of success simply because they don't think they are up to the task.*
Affective processes	• *The effectiveness of controlling threatening situations plays an important role in the perception of the level of anxiety.* • *Those who believe they are in control in threatening situations do not have thoughts that might disrupt their activities too much. Instead, people who believe they are unable to control stressful situations are characterized by an increased level of anxiety, perceiving many aspects of the environment as threatening and dangerous.*
Selection processes	• *Because of beliefs about their own abilities, individuals may or may not avoid situations and activities they consider uncontrollable. Through such selections, they get to cultivate certain skills, interests, social networks, which can later influence the course of their lives. In this way, the selection and career planning methods can also be explained. The more the level of self-efficacy is higher, the more the number of possible career directions increase.*

As demonstrated, Bandura emphasized the importance of self-perceptions of efficacy as cognitive mediators of action. While analyzing an action and engaging in it, individuals make judgments about their ability to cope with the various demands of the task.

> *These self-efficacy appraisals influence thinking ("This is what I have to do and can do" or "I'll never succeed; what will others think of me?"), emotion (stimulation, interest, joy or anxiety and depression) and action (engagement and increased involvement or inhibition and demobilization)". (Opre, 2006, p. 176)*

According to Bandura's theory (1977), self-efficacy expectancies, which refer to a person's beliefs about their ability to successfully perform a task or behavior, can be important mediating variables of behavior and behavior change.

Self-efficacy beliefs can be related to both past experiences and expectations about future academic development. Teenagers with high levels of self-efficacy tend to set reliable goals and feel confident in achieving them. Instead, a low level of self-efficacy may involve an adolescent to perform a certain task related to career choice (Komarraju & Nadler, 2013).

According to the literature, self-efficacy and outcome expectancies are generally addressed in terms of career decision-making self-efficacy and occupational outcome expectancies (Gore & Leuwerke, 2000; Gushue, 2006; Hoffmann et al., 2021; Lent et al., 2017; Sari & Şahin, 2013).

Career decision-making self-efficacy (CDMSE) is considered a primary element for an adolescent's career-choice interests, goals, choices, experiences, and performance (Jo et al., 2016), being researched more with vocational identity and family interaction types (Gushue et al., 2006; Hargrove et al., 2002) and with cognitive styles (Fan, 2016).

CDMSE is an adolescent's belief that can successfully complete career decision-making tasks (Austin, 2010; Gushue et al., 2006; Taylor & Betz, 1983). Adolescents with a high level of career decision-making self-efficacy prefer decisions that are more challenging and complex (Tabernero & Wood, 2009) and are more motivated to seek as much information as possible when involved in these decision-making processes (Seijts et al., 2004).

The main objective of the study carried out by Baglama and Uzunboylu (2017) was to investigate the existence of a relationship between CDMSE and expectations about the results related to professions. Thus, the results demonstrated that there is a moderate positive correlation between these variables, CDMSE having a predictive value on the expectations regarding the results related to the professions; similar results were also identified by Woo et al. (2017).

Tokar et al. (1998) indicated that the Big Five model can predict certain career variables such as: Development of career beliefs, career decision-making process, exploratory behavior, job satisfaction and job performance. Lent et al. (1994, 2000) argue that self-efficacy is a mediating variable between personality traits and vocational interests. In addition, in the study conducted by Sharma and Suri (2019), the personality trait openness to experience significantly moderated the relationship between career decision-making self-efficacy and foreclosed tendency, neuroticism and conscientiousness significantly moderated the relationship between self-efficacy career decision-making and career choice, and extraversion and agreeableness were found to be nonsignificant moderators of the relationship between career decision-making self-efficacy and career choice (career exploration and foreclosed tendency). Being characterized by a lack of positive adaptation and emotional stability, neuroticism is associated with a wide variety of negative emotions (Brown & Hirschi, 2013). Adolescents who have neuroticism as their predominant personality trait tend to be particularly careful and affected by certain negative consequences so that they have a high level of insecurity in certain steps of the career decision-making process. Regarding the extraversion personality

trait, Feldt et al. (2011), Hirschi and Hermann (2013) and Di Fabio et al. (2015) found that teenagers who have a high level of extraversion feel much more optimistic and are more determined in terms of choosing a career, having a low level of indecision. Finally, adolescents whose predominant trait is conscientiousness are likely to be goal-oriented, persistent, self-disciplined and organized (Brown & Hirschi, 2013), outlining their vocational identity, and not encountering problems in the decision-making process and the acquisition of information (Hirschi & Hermann, 2013).

Career decision-making self-efficacy can be influenced by both individual factors (examples: Predispositions, sex, race, ethnicity) and contextual factors such as learning experiences and family background (Tang et al., 2008).

The aim of this study was to investigate the relationship between personality factors, professional identity, and self-efficacy in career decision-making in 11th and 12th grade adolescents. The hypothesis from which the approach of this study started is the following:

– There are significant differences between personality factors, vocational identity and career decision-making self-efficacy.

– Dependent variables – personality factors, vocational identity and career decision-making self-efficacy

2 Material and Methods

In this section, the following aspects are described: the participants included in this research, the measurement and data collection tools and the type of design.

2.1 Participants

The participants of this study were 11th and 12th grade teenagers between 16-18 years old (N=300, M_{age}=17 years, SD=.81), students from Maramureș county, Romania. The teenagers chosen for this study belong to the following paths of studies/profiles: Formal sciences (specializations: Mathematics-informatics and natural sciences), services (specializations: Economics, trade, tourism and food) and human profile (specialization: Philology). Out of the total of 300 participants (see table 2), 150 are teenage boys and 150 are teenage girls.

Table 2: Distribution of Participants Included in the Study According to Sex and Study Profile

			Profile			*Total*
			Services	*Formal sciences*	*Human*	
Gender	*masculine*	Count	62	68	20	150
		% within gender	41,3%	45,3%	13,3%	100,0%
	feminine	Count	38	32	80	150
		% within gender	25,3%	21,3%	53,3%	100,0%
	Total	Count	100	100	100	300
		% within gender	33,3%	33,3%	33,3%	100,0%

2.2 Instruments

The following instruments were applied for data collection: for the assessment of career decision-making self-efficacy was applied the Career Decision-Making Self-Efficacy-Short Form Scale, for the assessment of vocational identity was applied the Vocational Identity Status Assessment and for the assessment of personality traits The NEO Five-Factor Inventory was applied.

2.2.1 Career Decision-Making Self-Efficacy-Short Form Scale (CDMSE-SF; Taylor & Betz, 1983)

This instrument measures confidence in one's ability to make optimal career decisions. It contains 25 items rated on a Likert scale from 1 to 5, where 1 represents *"total lack of confidence"* and 5 *"full confidence"*; the items being divided into the following five subscales: *Self-evaluation, information acquisition, goal setting, career planning and problem solving.*

Betz et al. (1996) reported a high consistency of the items, the Cronbach α coefficient being between .73-.83 for the subscales and .94 for the total score of the 25 items. Also, Gloria and Hird (1999) validated this scale on a group of white students and on a group of ethnic minority students and found that among white students a Cronbach's α coefficient of .95 was obtained, and for those among minorities, a Cronbach α coefficient of .97 was obtained. In contrast, Watson, Brand, Stead, and Ellis (2001) validated this scale on a group of South African students and reported only one subscale with a Cronbach's α coefficient below .70, and for the entire questionnaire they obtained a Cronbach's α coefficient of .91.

This scale can be completed in the pencil-paper version, individually or in a group, and the time allotted for completion is not restricted.

2.2.2 The Vocational Identity Status Assessment (VISA; Porfeli et al., 2011)

Porfeli et al. (2011) developed this questionnaire based on the identity findings developed by three researchers. First, they considered research by Marcia (1966) that laid the foundation for identity development through exploration and commitment. Then, they put into practice the research carried out by Crocetti and colleagues who used the dimensions of commitment, exploration and reconsideration of commitment (Crocetti et al., 2009, 2010). Lastly, Porfeli et al. (2011) also incorporated the research by Luyckx and colleagues, which used deep and horizontal exploration, commitment, and identification with commitment (Luyckx et al., 2006).

The recent version (Porfeli et al., 2011) includes six vocational identity statuses: Marcia's four identity statuses and two more - *moratorium seeking and undifferentiated status*. These identity statuses were discovered using the constructs "career exploration" (which includes two forms of exploration: In-depth and in-breadth), "career commitment" (which includes the following two forms: Assumption of the commitment and identification with the commitment) and "career reconsideration" (which includes self-doubt and career flexibility).

Therefore, this questionnaire contains 30 items that are rated on a Likert scale from 1 to 5, where 1 represents "strongly disagree" and 5 "strongly agree".

Regarding the validity characteristics, the Cronbach α coefficient for the subscales varies between .67 and .83 for the Italian version (Porfeli et al., 2011), and for the Romanian version, Negru-Subțirică et al. (2015) conducted a confirmatory factor analysis and found that the original six-factor structure fit the current data (X2 = 158,103, df 156,103, df = 39; CFI = .972, RMSEA = .051; SRMR = . 026).

2.2.3 The NEO Five-Factor Inventory (NEO-FFI-3; Costa & McCrae, 1992a)

The NEO-FFI-3 is a 60-item version of the NEO-PI-3. The questionnaire consists of five scales of 12 items each, which measure the five Big Five domains. Participants are asked to select their response to given statements on a Likert scale from 1 to 5, where 1 represents "*strongly disagree*" and 5 "*strongly agree*"; this inventory can be administered to participants between the ages of 12 and 85.

The NEO-FFI-3 can be administered both individually and in groups, and can be completed in electronic and paper-pencil versions, without a specific time limit.

Short-term retest reliability has not been studied with the NEO-FFI-3, but three studies have examined the NEO-FFI. Robins et al. (2001) reported test-retest correlations, computed over a two-week period, of .89, .86, .88, .86, and .90 for N, E, O, A, and C in a sample of college students. Murray et al. (2003) reported six-month test–retest reliabilities of .80, .86, .87, .80, and .85 in a sample of 462 Australian adults. A subset (n=208) of the students who provided normative data for the NEO PI-R completed the NEO-FFI approximately three months prior. By scoring the NEO-FFI scales from the data for the NEO PI-R it was possible to estimate

the three-month test-retest fidelity for the NEO-FFI scales in this sample of students. Coefficients ranged from .79, .79, .80, .75, and .83 for N, E, O, A, and C (Costa & McCrae, 1992b).

For the Romanian version (Iliescu & Sîrbu, 2019), after adapting and calculating the fidelity of the five scales of the NEO-FFI-3, Cronbach α coefficients of .78, .72, .70, .80 and .82 were obtained for the S form for N, E, O, A and C, and for the R form Cronbach's α coefficients of .78, .74, .73, .81 and .83 for N, E, O, A and C.

2.3 Research Design

To investigate the existence of an association between personality traits (measured with the NEO-FFI Inventory, Costa & McCrae, 1992a), vocational identity (measured with the VISA; Porfeli et al., 2011) and career decision-making self-efficacy (measured with CDMSE-SF; Taylor & Betz, 1983), this study will have a factorial design (4x5x5 design).

Statistical analyzes were run in IBM SPSS Statistics 20 (2011) and AMOS 20 (Arbuckle, 2011).

3 Results

To test the hypothesis of this research, first the Pearson r correlation coefficient was calculated to observe the existence of some associations between the measured variables and then the path model was calculated to identify the predictors for the acquisition of vocational identity.

Table 4: Pearson R Correlation Coefficients for Measured Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Neuroticism	-													
2. Extraversion	.17*	-												
3. Openness to experience	.25*	.44*	-											
4. Agreeableness	.27*	.35*	.36*	-										
5. Conscientiousness	.10	.37*	.35*	.32*	-									
6. Self-Appraisal	-.07	.28*	.31*	.24*	.45*	-								
7. Occupational information	-.01	.20*	.27*	.22*	.38*	.63*	-							
8. Goal selection	-.07	.19*	.27*	.27*	. 47*	.63*	.63*							
9. Planning	-.19*	.19*	.26*	.17*	.42*	.68*	.64*	.68*	-					
10. Problem solving	-.06	.12**	.24*	.20*	.27*	.59*	.40*	.51*	.55*	-				
11. Career commitment	-.15*	.14**	.17*	.04	.32*	.39*	.35*	.39*	.42*	.17*	-			
12. Identification with career commitment	-.10	.17*	.24*	.09	.46*	.58*	.54*	.51*	.54*	.36*	.56*	-		
13. Career commitment flexibility	.21*	.03	.09	.03	-.14**	-.03	-.04	-.02	-.09	.14*	-.42*	-.21*	-	
14. Career self-doubt	.35*	.003	.01	.02	-.14**	-.30*	-.19*	-.24*	-.30*	-.17*	-.27*	-.32*	.32*	-

* Correlation is significant at p <0.01

** Correlation is significant at p<0.05

Analyzing the results from the table 4, the following aspects can be observed: Identity status *career commitment* correlates statistically significantly with personality traits - neuroticism ($r_{(298)}$= -.15), extraversion ($r_{(298)}$= .14), openness to experience ($r_{(298)}$= .17) and conscientiousness ($r_{(298)}$= .32), self-evaluation ($r_{(298)}$= .39), obtaining information about self and occupations ($r_{(298)}$= .35), goal setting ($r_{(298)}$= .39), career planning ($r_{(298)}$= .42) and problem solving ($r_{(298)}$= .17). Also, the identity status *identification with career commitment* correlates statistically significantly with personality traits - extraversion ($r_{(298)}$= .17), openness to experience ($r_{(298)}$= .27), conscientiousness ($r_{(298)}$= .46)-, self-evaluation ($r_{(298)}$=.58), obtaining information about self and about occupations ($r_{(298)}$= .54), setting goals ($r_{(298)}$= .51), career planning ($r_{(298)}$= .54) and problem solving ($r_{(298)}$= .36). Moreover, the identity status *career commitment flexibility* correlates statistically significantly with the following personality traits: neuroticism ($r_{(298)}$= .21) and conscientiousness ($r_{(298)}$= -.14), and related to career decision-making self-efficacy only with the problem solving subscale ($r_{(298)}$= .14). In addition to these aspects, the identity status *career self-doubt* correlates statistically significantly with the personality traits neuroticism ($r_{(298)}$= .35) and conscientiousness ($r_{(298)}$= -.14), and with the following career decision-making self-efficacy subscales: Self-evaluation ($r_{(298)}$= -.30), obtaining information about self and occupations ($r_{(298)}$= - 19), setting goals ($r_{(298)}$= -.24), career planning ($r_{(298)}$= -.30) and problem solving ($r_{(298)}$= -.17).

Regarding the career decision-making self-efficacy, it was found that the self-evaluation subscale correlates statistically significantly positively with the personality traits - extraversion ($r_{(298)}$= .28), openness to experience ($r_{(298)}$= .31), agreeableness ($r_{(298)}$= .24) and conscientiousness ($r_{(298)}$= .45). The *obtaining information* subscale (related to self and occupations) correlates statistically significantly positively with the personality traits - extraversion ($r_{(298)}$=.20), openness to experience ($r_{(298)}$= .27), agreeableness ($r_{(298)}$= .22), conscientiousness ($r_{(298)}$=.38) and the self-evaluation subscale ($r_{(298)}$= .63). The *goal setting* subscale correlates statistically significantly positively with the personality traits extraversion ($r_{(298)}$= .19), openness to experience ($r_{(298)}$= .27), agreeableness ($r_{(298)}$= .27), conscientiousness ($r_{(298)}$= .47), the self-evaluation subscale ($r_{(298)}$= .63) and the obtaining information subscale ($r_{(298)}$= .63). The *career planning* subscale correlates statistically significantly positively with the personality traits extraversion ($r_{(298)}$= .19), openness to experience ($r_{(298)}$= .26), agreeableness ($r_{(298)}$= .17), conscientiousness ($r_{(298)}$= .42), self-evaluation subscale ($r_{(298)}$= .68), obtaining information subscale ($r_{(298)}$= .64) and goal setting subscale ($r_{(298)}$= .68), but between career planning and neuroticism, the existence of a statistically significant negative correlation was demonstrated, obtaining a coefficient $r_{(298)}$= -.19. The *problem-solving* subscale correlates statistically significantly positively with the personality traits extraversion ($r_{(298)}$=.12), openness to experience ($r_{(298)}$= .24), agreeableness ($r_{(298)}$= .20), conscientiousness ($r_{(298)}$= .27), self-evaluation subscale ($r_{(298)}$= .59), occupational information subscale ($r_{(298)}$= .40), goal setting subscale ($r_{(298)}$= .51) and career planning subscale ($r_{(298)}$= .55).

To observe how much of the variability of vocational identity statuses can be caused or explained by the relationship with personality traits, respectively career decision-making self-efficacy, the coefficient of determination R2 was also calculated. Thus, following the calculation of the coefficient of determination, the following were noted:

- Identity status *career commitment* is determined by the conscientiousness personality trait, obtaining a medium effect ($R^2 = .11$) and regarding the other personality traits, a small effect was obtained and from the perspective of career decision-making self-efficacy is determined by self-evaluation ($R^2 = .15$) and career planning ($R^2 = .17$) still obtaining a medium effect.

- Identity status *identification with career commitment* is determined by the conscientiousness personality trait obtaining a large effect ($R^2 = .21$), and regarding the other personality traits a small effect was obtained and from the perspective of career decision-making self-efficacy is determined by self-evaluation ($R^2 = .33$), obtaining information about oneself and professions ($R^2 = .29$), setting goals ($R^2 = .26$) and career planning ($R^2 = .29$) all obtaining a large effect.

- The identity status *career commitment flexibility* is determined by the neuroticism personality trait, obtaining a small effect ($R^2 = .04$), and from the perspective of career decision-making self-efficacy, it is determined by the problem-solving process ($R^2 = .02$) still obtaining a small effect.

- Identity status *career self-doubt* is determined by the neuroticism personality trait obtaining a medium effect ($R^2 = .12$), and from the perspective of career decision-making self-efficacy, it is determined by self-evaluation ($R^2=.10$) and career planning ($R^2=.10$) still obtaining a small effect. Consequently, the hypothesis of this study is confirmed.

Table 5: Summary of the Results of Testing the Path Model for the Identity Status Career Commitment

			Estimate	S.E.	C.R.	p	Estimate std.
Career commitment	◄- - - -	Neuroticism	-.06	.03	-2.11	.03	-.11
Career commitment	◄- - - -	Conscientiousness	.11	.04	2.75	.006	.14
Career commitment	◄- - - -	Extraversion	.01	.04	.29	.76	.01
Career commitment	◄- - - -	Openness to experience	.06	.04	1.30	.19	.06
Career commitment	◄- - - -	Agreeableness	-.07	.04	-1.79	.07	-.09
Career commitment	◄- - - -	Self-Appraisal	.19	.06	3.14	.002	.16

Career commitment	◄- - - -	Occupational information	.05	.06	.79	.42	.04
Career commitment	◄- - - -	Goal selection	.20	.06	3.11	.002	.16
Career commitment	◄- - - -	Planning	.26	.06	4.11	***	.21
Career commitment	◄- - - -	Problem solving	-.20	.05	-3.45	***	-.18

*** p<.001;

Note. Predictive pathways that reached thresholds of statistical significance have been shaded

Analyzing the results from table 5 highlights the fact that, at the level of personality traits, conscientiousness is a positive predictor in the development of identity status career commitment, while neuroticism is a negative predictor, but at the level of career decision-making self-efficacy, the predictors self-evaluation, goal setting, career planning and problem solving are significant.

Table 6: Summary of the Results of Testing the Path Model for the Identity Status Identification With Career Commitment

			Estimate	S.E.	C.R.	p	Estimate std.
Identification with career commitment	◄- - - -	Neuroticism	-.03	.02	-1.41	.15	-.07
Identification with career commitment	◄- - - -	Conscientiousness	.16	.03	5.37	***	.26
Identification with career commitment	◄- - - -	Extraversion	-.02	.03	-.71	.47	-.03
Identification with career commitment	◄- - - -	Openness to experience	.04	.03	1.26	.20	.06
Identification with career commitment	◄- - - -	Agreeableness	-.07	.02	-2.77	.005	-.13
Identification with career commitment	◄- - - -	Self-Appraisal	.27	.04	6.26	***	.31
Identification with career commitment	◄- - - -	Occupational information	.19	.04	4.42	***	.22
Identification with career commitment	◄- - - -	Goal selection	.09	.04	2.02	.04	.10
Identification with career commitment	◄- - - -	Planning	.11	.04	2.43	.01	.12
Identification with career commitment	◄- - - -	Problem solving	-.03	.04	-.70	.48	-.03

*** p<.001

Note. Predictive pathways that reached thresholds of statistical significance have been shaded

Regarding identity status identification with career commitment, the statistically significant positive predictors at the level of personality traits are conscientiousness and agreeableness, and at the level of career decision-making self-efficacy are self-evaluation, obtaining information related to self and occupations, setting goals and career planning.

Table 7: Summary of the Results of Testing the Path Model for the Identity Status Career Commitment Flexibility

			Estimate	S.E.	C.R.	p	Estimate std.
Career commitment flexibility	◄- - - -	Neuroticism	.11	.03	3.86	***	.20
Career commitment flexibility	◄- - - -	Conscientiousness	-.16	.04	-4.13	***	-.21
Career commitment flexibility	◄- - - -	Extraversion	.04	.04	1.02	.30	.05
Career commitment flexibility	◄- - - -	Openness to experience	.06	.04	1.42	.15	.07
Career commitment flexibility	◄- - - -	Agreeableness	-.02	.03	-.62	.53	-.03
Career commitment flexibility	◄- - - -	Self-Appraisal	-.07	.05	-1.24	.21	-.06
Career commitment flexibility	◄- - - -	Occupational information	-.01	.05	-.19	.84	-.01
Career commitment flexibility	◄- - - -	Goal selection	.06	.06	1.13	.25	.06
Career commitment flexibility	◄- - - -	Planning	-.13	.06	-2.30	.02	-.12
Career commitment flexibility	◄- - - -	Problem solving	.28	.05	5.26	***	.27

*** p<.001

Note. Predictive pathways that reached thresholds of statistical significance have been shaded

The statistically significant predictors for the identity status career commitment flexibility are neuroticism and conscientiousness (at the level of personality traits) and career planning, respectively problem solving (at the level of career decision-making self-efficacy).

Table 8: Summary of the Results of Testing the Path Model for the Identity Status Career Self-Doubt

			Estimate	S.E.	C.R.	p	Estimate std.
Career self-doubt	◄- - - -	Neuroticism	.19	.04	4.27	***	.28
Career self-doubt	◄- - - -	Conscientiousness	-.05	.07	-.77	.43	-.05
Career self-doubt	◄- - - -	Extraversion	.03	.07	.50	.61	.03
Career self-doubt	◄- - - -	Openness to experience	.02	.07	.25	.80	.018
Career self-doubt	◄- - - -	Agreeableness	-.003	.06	-.05	.95	-.004
Career self-doubt	◄- - - -	Self-Appraisal	-.26	.20	-1.29	.19	-.13
Career self-doubt	◄- - - -	Occupational information	.03	.16	.20	.84	.01
Career self-doubt	◄- - - -	Goal selection	-.04	.18	-.26	.79	-.02
Career self-doubt	◄- - - -	Planning	-.10	.22	-.48	.62	-.05
Career self-doubt	◄- - - -	Problem solving	.05	.11	.42	.67	.03

*** p<.001

Note. Predictive pathways that reached thresholds of statistical significance have been shaded

Observing the results in table 8, the most statistically significant predictor for the acquisition of identity status career self-doubt is the personality trait - neuroticism.

4 Discussion

This study aimed to investigate the relationship between professional identity, personality factors and self-efficacy in career decision-making among 11th and 12th grade teenagers.

According to the specialized literature, there are various studies that investigate different aspects of career decision-making self-efficacy. For example, Taylor and Pompa (1990) focused on investigating the relationship between career decision-making self-efficacy, career salience, locus of control and vocational indecision. Instead, Chung (2002) focused on investigating the relationship between career decision making self-efficacy and career commitment among college students. Furthermore, Gushue et al. (2006) have explored the relationship between career decision-making self-efficacy, vocational identity and career exploration behavior in African-American high school students. Besides these aspects, studies to jointly investigate personality traits, vocational identity and career decision-making self-efficacy are quite limited.

The results of the current study showed that certain subscales of career decision-making self-efficacy, respectively certain personality traits are significant predictor variables regarding the formation of vocational identity. Therefore, the statistically significant positive predictors for the acquisition of identity status *career commitment* are the conscientiousness personality trait, the self-evaluation process, goal setting, and career planning, and the statistically significant negative predictors are the neuroticism personality trait and the problem-solving process, while the predictors statistically significant positive factors for acquiring the identity status *identification with career commitment* are the conscientiousness personality trait, the self-evaluation process, obtaining information about self and professions, setting goals and career planning and the statistically significant negative predictor is the agreeableness personality trait. Regarding identity status career commitment flexibility, the statistically significant positive predictors are the neuroticism personality trait and problem solving, and the statistically significant negative predictors are the conscientiousness personality trait and career planning, while the only statistically significant positive predictor influencing the acquisition of identity status *career self-doubt* is the neuroticism personality trait. At the level of personality traits, similar results were discovered by certain researchers. For example, Hartman and Betz (2007), Ojeda et al. (2012) and Wang et al. (2006) found positive relationships of both extraversion and conscientiousness with career decision-making self-efficacy and negative correlations between neuroticism and career decision-making self-efficacy (Hartman & Betz, 2007; Page et al., 2008; Wang et al., 2006).

Also, Di Fabio and Saklofske (2014) pointed out that personality traits such as extroversion, openness to experience, agreeableness, and neuroticism were essential in predicting career decision-making difficulties. Different studies have shown that extraverted, responsible, open to experience and balanced people experienced less difficulties in career-decision making (Duru et al., 2021; Kırdök & Korkmaz, 2018; Pečjak & Košir, 2007). In addition to these aspects, in a recent study conducted by Zulkifli et al. (2021), the results demonstrated the existence of a significant positive relationship between extraversion, conscientiousness, openness, neuroticism and career decision-making self-efficacy. While, between neuroticism and career decision-making self-efficacy was a significant negative correlation; the same correlation also found by Wu et al. (2020) in their study.

5 Conclusion

Self-efficacy represents individuals' beliefs about their own abilities needed to achieve goals and perform proposed tasks. The adolescent's entry into professional life, which is equivalent to the transition from adolescence to adulthood, entails a series of changes. One of the most important changes consists in changing the adult role in the system of social relations. If in adolescence social life with all its problems was built through parents and teachers, once the transition to adulthood, the adolescent becomes a component and active element of it.

> *The teenager is responsible not only for his own deeds, but also for those of the person next to him (be it a child, wife, colleague or workmate). Therefore, "from an "investigator" of social life, as manifested in adolescence, the young man becomes a direct participant in it. (Davidescu, 2019, p. 140)*

The present research aimed to investigate some associations between personality traits, vocational identity and career decision-making self-efficacy. The results highlighted the existence of some correlations between the measured variables. Thus, the identity status *career commitment* correlates with the personality traits - neuroticism, extraversion, openness to experience and conscientiousness, and regarding the career decision-making self-efficacy it correlates with the self-evaluation process, obtaining information about self and professions, setting goals , career planning and the problem-solving process. Identity status *identification with career commitment* correlates with personality traits - extraversion, openness to experience and conscientiousness, and from the perspective of the career decision-making self-efficacy, it correlates with the process of self-evaluation, obtaining information about self and professions, setting goals, solving problems and career planning. The identity status *career commitment flexibility* correlates with the personality traits neuroticism and conscientiousness, and from the perspective of the career decision-making self-efficacy it correlates with the problem-solving process. Identity status *career self-doubt* correlates positively with the personality

trait neuroticism and negatively with conscientiousness, the process of self-evaluation, obtaining information about self and professions, setting goals, career planning and problem solving.

Besides these aspects, the results obtained in the current study have valuable implications for career counseling. First of all, it offers guidance for career counselors on how to help teenagers who are having trouble making a rational choice about their occupational path. Secondly, the results obtained corroborated with the results of other studies in the specialized literature may suggest that career indecision among teenagers can be reduced by forming the identity status *career commitment*, respectively the increase of career decision-making self-efficacy. Finally, the career counsellors that focuses on the formation of identity status *career commitment* and increasing the level of career decision-making self-efficacy will help to increase the ability of adolescents to identify and overcome barriers/conflicts that may arise in the career choice process.

A limitation of this research would be the lack of investigation of endogenous variables such as external or internal conflicts faced by adolescents in the career decision-making process.

A future direction of research would be to investigate a mediation analysis between vocational identity, emotional intelligence and career decision-making self-efficacy. Emotions influence the career decision-making process of individuals (Di Fabio et al., 2012). For example, emotions can affect the way adolescents plan their career or the process of choosing a profession (Brown et al., 2003). The literature (Petrides, Pita & Kokkinaki, 2007) has divided emotional intelligence into two categories: 1) Emotional intelligence as a trait targeting self-perceptions and affective moods assessed through self-reports (Bar-On, 1997; Petrides & Furnham, 2001) and 2) emotional intelligence as a skill that refers to the ability to perceive, assimilate emotion into cognition, and reason with emotion as assessed by objective performance tests (Mayer & Salovey, 1997). Certain studies (Brown et al., 2003; Di Fabio & Sakloflsk, 2014; Jiang, 2016) have shown that emotional intelligence is a strong predictor of career decision-making self-efficacy and career choice difficulties (Di Fabio et al., 2013; Puffer, 2011).

The current study is part of my doctoral thesis entitled "Adolescents Vocational Identity Formation".

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Ethics Statement

This paper did not require approval by an ethics committee. The participants involved in this research signed an informed consent regarding the ensuring the confidentiality of data both during the entire course of the research and after its completion.

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