

**MINISTRY OF NATIONAL EDUCATION  
BABEȘ-BOLYAI UNIVERSITY  
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**SOURCES OF CAREER INDECISION**

*Doctoral thesis summary*

Ph.D. coordinator:

**prof. univ. dr. ADRIAN OPRE**

Ph.D. student:

**ANDRA-MARIA PERȚE**

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**KEYWORDS:** *career indecision; career decision-making difficulties; career decision-making self-efficacy; endogenous and exogenous variables; training program*

## ***DOCTORAL THESIS SUMMARY***

Career decision is one of the most important decisions that a person has to make and many people encounter difficulties when confronted with this choice. The present thesis aimed to investigate the sources of career indecision for adolescents, the way these factors work together and to propose possible remedies by creating, implementing and evaluating an intervention program designed to reduce career indecision. In short, what happens, to whom it happens and, especially, what can we do about it are some of the questions that seek to be answered through this thesis.

I became interested in the subject of career indecision due to the frequent interactions with high-school graduates during the university admittance process that I have been attending for several years. Adolescents seemed to be experiencing many and different difficulties when having to decide about their academic future. Secondly, my assumptions about these difficulties were confirmed by some research that I have undertaken during my college years. Nonetheless, career indecision became more attractive as there aren't many studies in this direction or many scientifically validated interventions on career indecision in our country.

The thesis consists of seven chapters, where the first chapter represents the introduction in the matter of interest, telling the story of career indecision in the form of concepts' definitions, historical aspects and studies. Chapter two follows a short presentation of six theories concerning career decision, theories which formed, one way or another, the foundation of our researches and our intervention program. The next four chapters show the results of our own research: chapter three details the validation and adaptation studies for two of the best known instruments in the field; chapter four presents the studies interested in socio-demographic factors of career indecision; chapter five tests an explanatory model of career indecision, while chapter six describes the creation, implementation and evaluation of the I KNOW! I CAN! I CHOOSE! intervention program. Naturally, the last part of the thesis renders the conclusions and final discussions, the bibliographical list and the annexes.

**CHAPTER ONE** – Since I tried to conceive this whole endeavor the same way as a writer imagines a novel, the first chapter intends to rise the readers' interest (both profane or specialists) in the above mentioned matter. Therefore, I have analyzed and defined the following concepts: career, career decision, career indecision, career decision difficulties, self-efficacy in career decision and, at the same time, I have written significant paragraphs on endogenous and

exogenous factors of career indecision, detailing anxiety, self-esteem, irrational thinking since these will be our object of research in chapter four. The first chapter also describes some possible remedies for the problem of career indecision, united under the name of *Pharmakon* (Greek for “medicine”) and a short, but rather interesting, history of theoretical and anthropological approaches towards career decision.

**CHAPTER TWO** follows the descriptions of six theoretical models which stood as a starting point in my research, but also for creating the intervention program. These six models are:

1. The theory of personalities in work environment – *John Holland*
2. The theories of career development and career construction – *Donald Super and Marc Savickas*
3. The theory of circumscription, compromise and self-creation – *Linda Gottfredson*
4. The social cognitive career theory – *Robert W. Lent, Steven D. Brown & Gail Hackett*
5. The cognitive information processing approach to career problem solving and decision making – *Gary Peterson, James Sampson Jr., Janet Lenz & Robert Reardon*
6. The PIC (Prescreening, In-depth exploration and Choice) model for career decision-making – *Gati and Asher*

Several criteria were used for choosing these specific theories: chronologically, I tried to cover every decade of 20<sup>th</sup> century’s second half, when constant and steady paradigm changes took place; they are theoretical models which converge with a personal point of view constructed and established over time concerning career decision.

The above mentioned theoretical models represented significant starting points for this research, but have also been useful as didactic materials during some of the activities conducted within the intervention program (i.e. the content of some theories was presented to our subjects in order to make them more aware towards some aspects of career decision or, in other cases, they were asked to fit their own description in the framework of a certain theory).

**CHAPTER THREE** present the validation studies of two of the most important instruments in career psychology: *Career Decision-making Difficulties Questionnaire* – *Gati, Krausz & Osipow, (1996)* and *Career Decision-Making Self-Efficacy Scale* – *CDSME-SF* –

Taylor & Betz (1983). The adaptation and validation studies were conducted on 270 participants aged between 17 and 20. In order to reveal the factor structure of the instruments for our population we conducted exploratory and confirmatory factor analysis. The exploratory factor analysis for CDDQ revealed a three factor structure of the questionnaire and these factors explained 46% of the total item variance. Our first factor was called *career decision-making difficulties due to lack of information* ( $\alpha$  Cronbach = .937), our second factor was *career decision-making difficulties due to inconsistent information* ( $\alpha$  Cronbach = .794). The third factor highlighted *career decision-making difficulties due to dysfunctional thinking* but because of the lack of item internal consistency ( $\alpha$  Cronbach = .456) and because the scale contained only 3 items we decide to eliminate it from the scale's structure. Our findings were similar to other validation studies conducted onto other populations. Confirmatory factor analysis proved the goodness of fit of our two factor model (normalized chi-square = 2.069; GFI = .872; AGFI = .836; RMSEA = .063).

We tested the correlation between the CDDQ and CDMSES-SF in order to prove the concurrent validity of the instrument. All the correlations were statistically significant at a  $p > .05$ . In order to prove the construct validity we compared the decided participants with the undecided ones and we concluded that the questionnaire discriminates exceptionally between these two categories ( $t = -22,433$ ,  $p = .000$ ,  $d$  Cohen = 2,66). The CDDQ is proved to be reliable, the test-retest reliability coefficients being higher than .90 (for an 8 weeks interval between the two testing moments).

In the second part of chapter two we presented the adaptation and validity studies for CDMSES-SF. As the exploratory and confirmatory analysis were conducted and published by university lecturer Delia Bîrle, we took the factor structure from that research with the author's permission, but the validity and reliability studies were conducted separately within this research. Thus, the exploratory factor analysis revealed a two factor structure, these explaining 32% of the total item variance. The first factor was called *career decision-making process self-efficacy* ( $\alpha$  Cronbach = .795); the second factor was called *occupation information gathering self-efficacy* ( $\alpha$  Cronbach = .729). Confirmatory factor analysis proved the goodness of fit of this model [ $\chi^2(222)=823,308$ ,  $p < .001$ ; RMR = .056; RMSEA = .055; GFI=.924; AGFI=.905; NFI = .851]. The construct validity was proved through the comparison of women who choose feminine professions with women who choose masculine professions, the latter being more confident in

their ability to choose an occupation ( $t = 4,634$ ,  $p = .000$ ,  $dCohen = .95$ ). The predictive validity was proved through the correlations between the CDMSES-SF and school grades ( $r=.415$ ;  $p=.000$ ;  $r^2=.17$ ). The scale has proved to be reliable, the test-retest reliability coefficients being higher than .90.

In **CHAPTER FOUR** we intended to sketch the undecided adolescent's portrait. *Who is he or she? Where is he/she coming from? What does he/she study in school? Which are the factors that influence his/hers career decision?* These are some of the important questions that this study attempts to find the answer to. The socio-demographic variables taken into consideration were: gender; origins (rural vs. urban); ethnicity; level of education; school specialization; presence/absence of elder siblings; parents' educational level. 554 8<sup>th</sup> graders, 12<sup>th</sup> graders and 3<sup>rd</sup> year students were included in this study, aged between 13 and 25. The measurements were CDDQ and CDMSES-SF.

The results showed no significant differences among males and females for career decision-making difficulties overall, but a tendency was highlighted for career decision-making difficulties due to inconsistent information for males ( $U = 28397$ ;  $p <.05$ ,  $d Cohen = .15$ ). Apparently, males seem experience more difficulties in handling internal or external conflicts or to manage with contradictory information. No significant differences were found for the CDMSES-SF.

The undecided adolescent lives in rural areas. We found strongly significant differences in CDDQ when comparing urban with rural adolescents ( $U=14908, 5$ ;  $p=.000$ ;  $d Cohen = 1.05$ ), the later scoring higher on the career decision-making difficulties scale (the higher the scores are, the bigger the decision-making problems are). The difference can be explained through the socio-economic problems inherent to rural environment. The decision-making process is a complex and multifaceted process in which access to information is essential, as well as the access to counseling and career guidance services. None of these can be easily found in rural environments.

There were no ethnical difference for the CDDQ or CDMSES-SF when comparing Romanian with Hungarian participants ( $t= -.660$ ;  $p=.550$ ), these two ethic groups are experiencing the same kind of career decision-making difficulties are having similar levels of career decision-making self-efficacy.



When comparing 8<sup>th</sup> graders with 12<sup>th</sup> graders and 3<sup>rd</sup> year students, we found that the 12<sup>th</sup> graders experience more career decision-making difficulties [ $\chi^2(2, N = 554) = 35,259$ ;  $p < .001$ ;  $\eta^2 = .06$ ]. There were no significant differences for the CDMSES-SF. As concerning the school specializations, a tendency for higher career decision-making difficulties was noted for those students which attend to less attractive school specializations, like *nature sciences* or *librarian*.

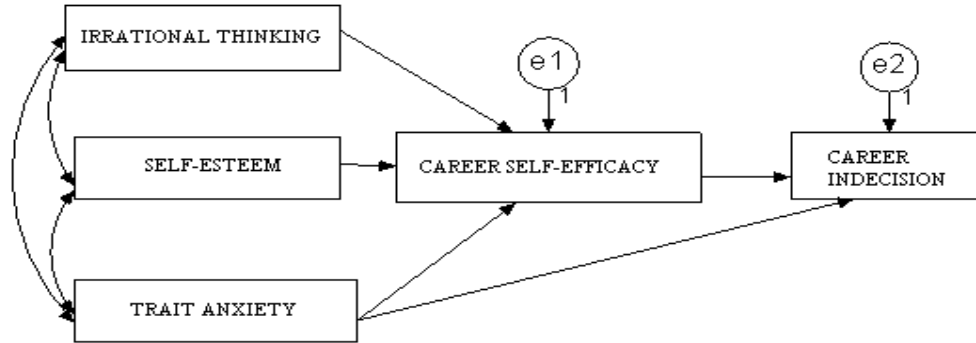
The undecided adolescent has no elder siblings, the participants that benefit from sibling presence have less problems with career decision-making ( $U=270923$ ;  $p=.000$ ;  $d$  Cohen = .48). It seems that adolescents who have older brothers or sisters turn to them in obtaining information about occupations, about the characteristics and lifestyle offered by different occupational alternatives. Elder siblings might be important evaluators of abilities, interests and values for the teenagers who are on the verge of making one of the most important decisions of their existence.

Finally, no differences were encountered when comparing the scores on the CDDQ and CDMSES-SF respective to parents' educational levels. It is obvious that parents represent a major influence on adolescents' career decision, but their level of education is not the mechanism behind this influence.

Entering a less discovered area of research in our country, in **CHAPTER FIVE** we studied the relationship between career indecision and four of its correlates: irrational thinking, self-esteem, trait anxiety and career decision-making self-efficacy. We developed and tested through path analysis a model that has proven to fit the data. In this study, 410 adolescents were included (270 high-school students – 12th grade and 140 secondary school students – 8<sup>th</sup> grade), with the age ranging from 13 to 19 years (age mean = 16.74). For measurement we used the CDDQ (for measuring career indecision), the CDMSES-SF (measuring career decision-making self-efficacy), the *Child and Adolescent Scale of Irrationality* (Bernard & Laws, 1988 in Trip, 2007) – measuring irrational thinking; the *Hare Self-Esteem Scale* (Hare, 1985 in Corcoran & Fisher, 2000) – measuring self-esteem; and in order to assess trait anxiety we used the *trait anxiety scale* of the *State-Trait Anxiety Inventory – STAI-X2* – (Spielberger, Gorsuch și Lushene, 1970).

As we did not embark on this journey with a specific theoretical model in mind, we experimented with the data and we discovered the following model (fig. 1) concerning the

relationship between the exogenous and the endogenous variables presented so far. The statistical analysis was performed in Amos 7.0.



**Fig. 1** *The explanatory model of the relationship between irrational thinking, self-esteem, trait anxiety, career decision-making self-efficacy and career decision-making difficulties*

According to our model, irrational thinking, self-esteem, trait anxiety determine low levels of career decision-making self-efficacy which leads to career indecision. Moreover, career decision-making self-efficacy mediates the relation between trait anxiety and career indecision.

Path analysis indicated that the fit of this model was good,  $\chi^2 = 1,992$ , a value considered to be optimal in order to decide whether the model is fit for the data, according to Ulman (2001, in Garson, 2011). GFI and AGFI also proved the goodness of fit of our model when scoring over .90 (Sava, 2004). The *Bentler-Bonett normed fit index*, also known as NFI is an alternative to the CFI index, which needs to be higher than .95; our data met this criterion, as well. RMSEA = .05 or less indicates a good fit and ours was .047, yet again another proof of the goodness of fit of the model. We tested several models, but this one recorded the best indexes.

In order to test the mediation effect of career decision-making self-efficacy between trait anxiety and career indecision we used the Sobel test and its value was  $z = 2,569$ , significant at  $p = 0,005$ . Thus, the mediation effect was proved. Using the *bootstrapping* procedure, we calculated the indirect effect of the trait anxiety on career decision-making difficulties and we obtained a value of .192 for the indirect effect that was significant at  $p = .001$ . Consequently, we can state that career decision-making self-efficacy mediates the relationship among trait anxiety and career indecision. In other words, trait anxiety causes low levels of self-efficacy in career decision that will lead to higher levels of career indecision. On a practical level, developing and

implementing activities which aim to increase career decision-making self-efficacy will reduce the bond between anxiety and career indecision.

Needless to say, career decision is one of the most important decisions that a person has to make in his entire existence. Many researches have shown that in adolescence we encounter more career decision difficulties than in any other developmental stages. Furthermore, teaching adolescents how to make good career decisions is one of the main goals of career counseling and guidance. Thus, in CHAPTER SIX we developed and implemented a training program called I KNOW! I CAN! I CHOOSE! a program that attempts to reduce a large area of career decision difficulties. We tested the program on 211 participants, divided into experimental, control and placebo groups. We used the CDDQ and CDMSES-SF as measurements.

The first step in testing the efficiency of our intervention was pre-testing our participants from each group: experimental, control and placebo. Pretesting took place from November to December of each year, by applying the two questionnaires mentioned above. The intervention extended over six weeks, for both the experimental and the placebo groups. All the activities lasted about 50 minutes, two activities per week.

In constructing our program, we took into consideration the major factors of career decision: accurate self-appraisal, gathering occupational information, career decision making self-efficacy (which, according to Taylor and Betz encompasses self-appraisal, goal setting, career planning, occupational information and problem solving skills), rational thinking, motivation and occupational problem solving skills. The title of the intervention was inspired by the major themes of the activities. I KNOW! I CAN! I CHOOSE! comprises of 12 activities, each of them aiming to eliminate a different source of career indecision, and thus, the development of career decision making skills. Finally, we took into account information provided by the meta-analysis conducted by Brown and Krane (2003), which reports some elements of success for any intervention program. Analyzing 62 intervention programs presented in different research papers, 18 components were identified, or 18 "ingredients" of success. Comparing the effectiveness of the analyzed programs, the authors concluded that there are five essential elements for every effective career intervention: 1. written exercises or worksheets; 2. individual interpretation and feedback; 3. labor market information and information about occupations; 4. modeling; 5. attention to creating a support network.

The placebo groups were subjected to a personal development program (though they were told that they are participating at a career decision development program) that also comprised 12 meetings. Post-testing took place the following week after the completion of the intervention, when we tested all the participants with the same measurement tools. Follow-up studies were conducted three months after the intervention ended.

Our results showed that the *I KNOW! I CAN! I CHOOSE!* program reduces career decision making difficulties, the comparison between the experimental, control and placebo groups in posttest moment were statistically significant [ $F_{(2,210)} = 16,591$ ;  $p=.000$ ;  $r^2 = .138$ ]. Likewise, the same program enhances career decision-making self-efficacy [ $F_{(2,210)} = 56,288$  ;  $p=.000$ ;  $r^2 = .351$ ]. These statistically significant differences were found only between the experimental and control groups and between the experimental and placebo groups. Subsequently, the program's effect on reducing decision-making difficulties lasts over time, a fact demonstrated by the differences between pretest and follow-up moments for the experimental group [ $F_{(1,74)} = 100,871$ ,  $p<.001$ ,  $\eta^2_{\text{partial}}=.577$ ]. As expected, the program's effect on enhancing career decision-making self-efficacy lasts over time, as well [ $F_{(1,74)}= 205,176$ ,  $p<.001$ ,  $\eta^2_{\text{partial}}=.735$ ].

## CONCLUSIONS

What are some of the merits of this thesis? First of all, we have two valuable assessment tools with excellent psychometric properties that can be used both in research and as well in counseling practice. CDDQ and CDMSES-SF can be used for initial screening of clients, diagnosis of client's career decision-making difficulties or career decision-making self-efficacy, for needs assessment and for evaluating interventions. Of course, we did not presume to have validated these instrument on Romanian populations because our sample was way to small (270 participants), but for the purpose of our entire endeavor we conducted an optimal validation process. Secondly, now we know where to look for difficulties in career decision-making, and thus, where to intervene. The undecided adolescent is more frequently found in rural areas, could be either male or female with unspecified ethnicity. Our adolescent is a 12<sup>th</sup> grade high-school student and has no elder siblings. Further researches should analyze deeper all the variables presented here. Third, we proposed an explanatory model for career indecision, where irrational thinking, low self-esteem and trait anxiety explain career decision-making difficulties though career decision-making self-efficacy. Further research should retest this model on another sample as we did not star from a recognized theoretical model. And finally, the thesis present the

creation, implementation and evaluation of a training program that reduces career decision-making difficulties for adolescents and increases career decision-making self-efficacy, a program that was proved to be effective and that lasts over time. Thus, in a short amount of time (12 weeks) a lot can be accomplished concerning career indecision and a lot of stress can be avoided.

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