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Incremental variance of the core self-evaluation construct compared to fluid intelligence and personality traits in aspects of decision-making

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ABSTRACT

This study investigated the role of fluid intelligence, personality traits and core self-evaluation in relation to aspects of decision-making (career decision-making difficulties, decisional styles, indecisiveness). The Advanced Progressive Matrices (APM), the Big Five Questionnaire (BFQ), the Core Self-Evaluation Scale (CSES), the Career Decision-making Difficulties Questionnaire (CDDQ), the Melbourne Decision Making Questionnaire (MDMQ), and the Indecisiveness Scale (IS) were administered to 143 Italian high school students. The study revealed that the core self-evaluation construct added a significant percentage of incremental variance compared to variances due to fluid intelligence and personality traits with respect to aspects of decision-making. The results highlight the role of the core self-evaluation construct and its relationship with aspects of decision-making thereby offering new research and intervention perspectives.

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1. Introduction

1.1. Decision-making and individual variables

Career decision-making is a complex process in which a number of variables play a role: individual variables (Nilsson et al., 2007); situational variables related in particular to decisional problems (Campbell & Cellini, 1981); and contextual variables such as employment opportunities, exposure to vocational options and information, economic resources, employment and educational discrimination (Constantine, Wallace, & Kindaichi, 2005). Analysis of the literature reveals a growing interest in the study of the individual variables related to decision-making processes as individual resources for coping with situational and contextual variables (Nilsson et al., 2007). The relevance of self-evaluation is configured in the study of individual variables in decisional processes (Watson, 2001) and specifically in decision-making processes in career decision-making (Savickas, 2005). This article will therefore focus on a promising area of research in respect of the core self-evaluation construct (Judge, Locke, & Durham, 1997), the positive self-concept, which has not been studied sufficiently empirically in relation to decision-making, in particular comparing it with traditional variables such as fluid intelligence and personality traits.

Early research on decision-making was dominated by normative models and probabilistic studies strongly influenced by economic theory (Luce & Raiffa, 1957) thus emphasizing the cognitive aspects of decision-making. In relation to the specific role of fluid intelligence in decision-making processes, a study by Rigas, Carling, and Brehmer (2002) revealed that greater fluid intelligence was linked to better performance in dynamic decision-making tasks regarding decisions made by individuals in real-time based on changes occurring in the environment.

Because various studies have shown that individuals do not always use rational procedures when making decisions, the attention has broadened to include other individual variables (Nilsson et al., 2007). Personality in decision-making is now a recognized factor (Tokar, Fischer, & Subich, 1998). Regarding specific relationships between career decision-making difficulties and personality traits, as defined according to the model by Gati, Krausz, and Osipow (1996), more emotionally stable individuals seem to perceive fewer decisional difficulties (Albion & Fogarty, 2002). Relationships have also emerged (Di Fabio & Palazzeschi, 2009) between career decision-making difficulties (Gati et al., 1996) and the Extraversion and Neuroticism dimensions. Even research on decisional styles emphasizes the influence of personality variables (Di Fabio & Busoni, 2006; Watson, 2001). Regarding the presence of links between decisional styles, as defined according to the model by Mann, Burnett, Radford, and Ford (1997), and personality traits, as conceptualized according to the Big Five Model, an analysis of the literature shows the following relationships: an inverse relationship between Avoidance and Extraversion (Di Fabio &

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Busoni, 2006); a positive relationship between Vigilance and Conscientiousness (Di Fabio & Busoni, 2006); a positive relationship between Procrastination and Neuroticism (Di Fabio & Busoni, 2006; Watson, 2001); an inverse relationship between Procrastination and Extraversion (Di Fabio & Busoni, 2006; Watson, 2001) and between Procrastination and Conscientiousness (Di Fabio & Busoni, 2006); a positive relationship between Hypervigilance and Neuroticism (Di Fabio & Busoni, 2006); and an inverse relationship between Hypervigilance and Extraversion (Di Fabio & Busoni, 2006). Indecisiveness is linked to higher levels of Neuroticism (Jackson, Furnham, & Lawty-Jones, 1999).

1.2. Core self-evaluation

As mentioned earlier, a promising area of research in relation to career decision-making is core self-evaluation (Judge et al., 1997). Judge, Erez, Bono, and Thoresen (2003) recently referred to this construct in terms of a fundamental self-evaluation on perceived value, effectiveness and individual skills. More specifically, the construct refers to a concept of a higher order defined by four more specific factors: self-esteem, self-efficacy, the tendency to have a negative cognitive/explanatory style and locus of control (Judge et al., 1997). An analysis of the literature shows that extensive psychological research has been conducted on the separate traits that have a bearing on core self-evaluation but that relatively little research has been done on these traits together as a distinct construct (Judge et al., 1997). Where they have been considered together, they are usually treated as separate variables without seeing them as constituting a possible common framework (Hornier, 1996). However, recent studies on self-esteem, self-efficacy, the tendency to have a negativistic cognitive/explanatory style and locus of control together (Judge et al., 1997, 2003) have found that these constructs constitute a single factor suggesting that they could be considered indicators of a latent construct of a higher order, namely the core self-evaluation construct. Research has recently begun on the possible role of the core self-evaluation construct in decision-making processes thus highlighting the relationship between this construct and decisional variables such as career decision-making difficulties, decisional styles and indecisiveness (Di Fabio & Busoni, 2010).

1.3. Aim and hypotheses

Against this background, the present study sought to examine the relationship of fluid intelligence, personality traits and the core self-evaluation construct with aspects of decision-making (career decision-making difficulties, decisional styles, indecisiveness) among students attending the last two years of high school. The aim was to determine whether the core self-evaluation construct is better able to explain the percentage of incremental variance compared to fluid intelligence and personality traits specifically in relation to decisions about one's future career path (career decision-making difficulties) and decisional processes in general (decisional styles and indecisiveness). The choice of school students was determined by the desire to study this theme in depth in a scholastic context, specifically in students facing a significant choice and transition at the end of high school. This choice was also consistent with Di Fabio and Busoni's (2010) previous study, which indicated that the core self-evaluation construct in this area did not appear to have been sufficiently investigated. The following hypotheses were accordingly made:

(H1) The core self-evaluation construct will add significant incremental variance beyond the variance accounted for by fluid intelligence and personality traits in relation to the CDDQ decision-making difficulties and will show an inverse relationship with

each of the three CDDQ dimensions (Lack of Readiness, Lack of Information, Inconsistent Information).

(H2) The core self-evaluation construct will add significant incremental variance beyond the variance accounted for by fluid intelligence and personality traits in relation to the MDMQ decisional styles and will show a positive relationship with the MDMQ Vigilance decisional style and an inverse relationship with each of the three maladaptive MDMQ decisional styles (Avoidance, Procrastination, Hypervigilance).

(H3) The core self-evaluation construct will add significant incremental variance beyond the variance accounted for by fluid intelligence and personality traits in relation to indecisiveness and will show an inverse relationship with indecisiveness.

2. Materials and methods

2.1. Participants

One hundred and forty-three students attending the last 2 years of high school in the Tuscan school system participated in the study. All the students enrolled in the last 2 years of high school in the school system were invited to participate. With regard to gender, 69 (48.25%) of the participants were boys and 74 (51.75%) were girls. With regard to the type of school attended, 63 (44.06%) of the students attended a technical school and 80 (55.94%) attended a college preparatory high school. The participants ranged in age from 16 to 19 years ($M = 17.51$, $SD = .64$).

2.2. Measures

2.2.1. Advanced Progressive Matrices (APM)

The Advanced Progressive Matrices (APM) test by Raven (1962) was used to evaluate fluid intelligence. The test is subdivided into two series of items consisting respectively of 12 (Series I) items and 36 (Series II) items from which the participants had to choose one response from among eight possible alternatives. The first series was used for practice purposes, and the second series was used as an efficiency test. With regard to the reliability of the Italian normative sample, the Cronbach's alpha was .91.

2.2.2. Big Five Questionnaire (BFQ)

The Big Five Questionnaire (BFQ, Caprara, Barbaranelli, & Borgogni, 1993) was used to evaluate personality traits. The questionnaire had 132 items consisting of response options in a 5-point Likert scale format ranging from 1 = *Absolutely false* to 5 = *Absolutely true*. The questionnaire distinguished five fundamental personality dimensions and ten sub dimensions (two for each scale). In the Italian normative sample, the Cronbach's alpha coefficient was .81 for Extraversion, .73 for Agreeableness, .81 for Conscientiousness, .90 for Emotional Stability and .75 for Openness.

2.2.3. Core Self-Evaluation Scale (CSES)

The Core Self-Evaluation Scale (CSES, Judge et al., 2003) in the Italian version by Di Fabio and Busoni (2009) was used to evaluate the core self-evaluation construct. The Italian version of the scale was obtained through back-translation of the original version of the CSES by Judge et al. (2003).

The questionnaire had 12 items consisting of response options in a 5-point Likert scale format ranging from 1 = *Strongly disagree* to 5 = *Strongly agree*. The reliability coefficient of the Italian version of the scale was good: $\alpha = .84$ (Di Fabio & Busoni, 2009).

2.2.4. Career Decision-making Difficulties Questionnaire

The Career Decision-making Difficulties Questionnaire (CDDQ, Gati et al., 1996), short version (34 items), in the Italian version

by Di Fabio and Palazzeschi (2010) was used to evaluate decision-making difficulties. This tool has response options in a 9-point Likert scale format ranging from 1 = *Does not describe me* to 9 = *Describes me well*. The questionnaire distinguished three scales and ten subscales: Lack of Readiness (Lack of Motivation; Indecisiveness; Dysfunctional Beliefs), Lack of Information (about the decision-making process; about the Self; about occupations; about ways of obtaining information) and Inconsistent Information (Unreliable Information; Internal Conflicts; External Conflicts). The Cronbach's α values of the Italian version of the CDDQ (Di Fabio & Palazzeschi, 2010) showed a good internal consistency: .86 for the Lack of Readiness dimension, .90 for the Lack of Information dimension and .92 for the Inconsistent Information dimension.

2.2.5. Melbourne Decision Making Questionnaire (MDMQ)

The Italian version adapted by Nota and Soresi (2000) from the Melbourne Decision Making Questionnaire (MDMQ, Mann et al., 1997) was used to evaluate decisional styles. The questionnaire consisted of 22 statements, and the participants were asked to indicate the extent to which each statement corresponded with their situation based on a 3-point Likert scale (1 = *Not true*, 2 = *Sometimes true*, 3 = *True*). The MDMQ assesses four decisional styles: Avoidance (F1), Vigilance (F2), Procrastination (F3) and Hypervigilance (F4). The Italian-adapted version yielded the following reliability coefficients: $\alpha = .78$ for Avoidance, $\alpha = .68$ for Vigilance, $\alpha = .65$ for Procrastination and $\alpha = .60$ for Hypervigilance (Nota & Soresi, 2000).

2.2.6. Indecisiveness Scale (IS)

The Indecisiveness Scale (IS, Frost & Shows, 1993) in the Italian version by Di Fabio, Busoni, and Palazzeschi (2011) was used to evaluate indecisiveness. The scale (15 items) measures indecisiveness using a 5-point Likert scale that ranges from 1 = *Strongly disagree* to 5 = *Strongly agree*. The Italian version of the scale possesses good internal coherence ($\alpha = .85$).

2.3. Procedure and data analysis

The instruments were administered collectively in the classroom by specialized staff at a time agreed upon with the school and with due adherence to the requirements of privacy and informed consent. The administration order was counterbalanced to control the effects of presentation order. A time-off period of 10 min was given after the APM and after the BFQ to counteract fatigue.

Descriptive statistics, Pearson's r correlation and hierarchical regressions were applied to the data collected in the study.

3. Results

Means, standard deviations, skewness, kurtosis, and the item range of possible responses regarding APM, BFQ, CSES, CDDQ, MDMQ, IS are reported in Table 1.

The skewness and kurtosis indices indicated that all the variables considered in the present study had a normal distribution.

The results of the correlations between the studied variables are reported in Table 2.

Table 3 shows the results of the hierarchical regression with the Lack of Readiness dimension of the CDDQ as the criterion measure and with fluid intelligence at the first step, personality traits at the second step, and the core self-evaluation construct at the third step. Fluid intelligence accounted for the 4% variance of the Lack of Readiness dimension; when personality traits were added at the second step, the model was significant ($F = 3.71$, $p < .01$) and accounted for the 12% greater variance; when the core self-evaluation was added

at the third step, the model was significant ($F = 16.21$, $p < .001$) and accounted for the 9% greater variance. In this model, core self-evaluation was inversely related to the Lack of Readiness dimension ($\beta = -.36$, $p < .001$).

For the analysis explaining the Lack of Information dimension (Table 3), fluid intelligence at Step 1 accounted for 3% of the variance. At Step 2, personality traits accounted for an additional 11% of the variance ($F = 3.50$, $p < .01$) beyond the effects of fluid intelligence; at Step 3, core self-evaluation accounted for an additional 13% of the variance ($F = 29.06$, $p < .001$) and was inversely linked to the Lack of Information dimension ($\beta = -.47$, $p < .001$).

For the analyses with the Inconsistent Information dimension as the criterion measure (Table 3), fluid intelligence at Step 1 accounted for 5% of the variance. At Step 2, beyond fluid intelligence, personality traits accounted for an additional 11% of the variance ($F = 3.51$, $p < .01$), and core self-evaluation accounted for an additional 8% of the variance ($F = 14.30$, $p < .001$) with $\beta = -.34$ ($p < .001$).

The regression analysis with Avoidance as the criterion measure (Table 4) revealed that fluid intelligence accounted for 4% of the variance. At Step 2, beyond fluid intelligence, personality traits accounted for an additional 9% of the variance ($F = 2.84$, $p < .05$), and core self-evaluation accounted for an additional 12% of the variance ($F = 21.37$, $p < .001$) and was inversely related to Avoidance ($\beta = -.42$, $p < .001$).

For the analysis explaining Vigilance (Table 4), fluid intelligence at Step 1 accounted for 5% of the variance. At Step 2, beyond the effects of fluid intelligence, personality traits accounted for an additional 13% of the variance ($F = 4.41$, $p < .01$), and core self-evaluation accounted for an additional 8% of the variance ($F = 14.24$, $p < .01$). Core self-evaluation was positively related to Vigilance ($\beta = .34$, $p < .001$).

With Procrastination as the criterion measure (Table 4), fluid intelligence accounted for 5% of the variance; when personality traits were added at Step 2, the model was significant ($F = 5.21$, $p < .001$) and accounted for an additional 15% of the variance; at Step 3, core self-evaluation accounted for an additional 7% of the variance ($F = 13.30$, $p < .001$) and was inversely related to Procrastination ($\beta = -.32$, $p < .001$).

For the analysis explaining Hypervigilance (Table 4), fluid intelligence at Step 1 accounted for 34% of the variance. At Step 2, beyond fluid intelligence, personality traits accounted for an additional 11% of the variance ($F = 3.54$, $p < .01$), and core self-evaluation accounted for an additional 20% of the variance ($F = 40.41$, $p < .001$) with $\beta = -.53$ ($p < .001$).

Finally, the regressions with Indecisiveness as the criterion measure (Table 4) revealed that fluid intelligence accounted for 5% of the variance. At Step 2, personality traits accounted for an additional 16% of the variance ($F = 5.41$, $p < .001$) beyond the effects of fluid intelligence. At Step 3, core self-evaluation accounted for an additional 24% of the variance ($F = 58.49$, $p < .001$) and was inversely related to Indecisiveness ($\beta = -.59$, $p < .001$).

4. Discussion and conclusions

The aim of the present study was to determine whether core self-evaluation would demonstrate incremental validity in predicting career decision-making difficulties and decision-making processes in general (decisional styles and indecisiveness), compared to fluid intelligence and personality traits, among Italian high school students.

The results of the study confirmed the first hypothesis as the core self-evaluation construct accounted for a greater percentage of incremental variance compared to fluid intelligence and personality traits in each of the three CDDQ dimensions thus indicating the relevance of self-evaluation in the career decision-making

Table 1
Means, Standard deviations, skewness, kurtosis, item range of possible responses regarding APM, BFQ, CSES, CDDQ, MDMQ, IS (N = 143).

	M	DS	Observed minimum	Observed maximum	Skewness	Kurtosis	Number of items per scale	Item range of possible responses
1. APM	20.58	7.02	9.00	36.00	.34	-.59	36	Only one exact response from among 8 possible alternatives
2. Extraversion	67.20	17.58	26.00	108.00	-.03	.04	24	1–5
3. Agreeableness	76.90	10.64	51.00	107.00	-.21	.43	24	1–5
4. Conscientiousness	73.97	15.66	36.00	113.00	-.07	-.16	24	1–5
5. Emotional Stability	72.09	15.07	38.00	120.00	.12	.54	24	1–5
6. Openness	72.16	17.86	27.00	110.00	-.38	-.21	24	1–5
7. CSES	40.14	7.02	19.00	59.00	-.22	.17	12	1–5
8. CDDQ Lack of Readiness	6.01	.78	4.20	8.80	.39	.50	10	1–9
9. CDDQ Lack of Information	7.70	1.12	4.83	9.00	-.49	-.73	12	1–9
10. CDDQ Inconsistent Information	4.73	.89	2.60	8.90	.99	.98	10	1–9
11. MDMQ Avoidance	10.36	3.32	6.00	18.00	.60	-.55	6	1–3
12. MDMQ Vigilance	13.75	3.22	6.00	18.00	-.55	-.58	6	1–3
13. MDMQ Procrastination	7.90	2.41	5.00	14.00	.84	-.13	5	1–3
14. MDMQ Hypervigilance	9.55	2.34	5.00	15.00	.25	-.50	5	1–3
15. IS -Indecisiveness	41.08	8.59	21.00	62.00	.08	-.39	15	1–5

Table 2
Correlations relative to APM, BFQ, CSES, CDDQ, MDMQ, IS.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. APM	–														
2. Extraversion	-.04	–													
3. Agreeableness	-.05	.10	–												
4. Conscientiousness	-.06	.12	.19*	–											
5. Emotional Stability	-.05	.43**	.12	.08	–										
6. Openness	-.10*	.11	.26**	.35**	.11	–									
7. CSES	.18*	.36**	.05	.13	.37**	.15	–								
8. CDDQ Lack of Readiness	-.21**	-.18*	-.01	-.03	-.33**	-.10	-.47**	–							
9. CDDQ Lack of Information	-.18*	-.22**	-.07	-.07	-.31**	-.04	-.51**	.32**	–						
10. CDDQ Inconsistent Information	-.23**	-.22**	-.05	-.02	-.25**	-.17*	-.39**	.42**	.34**	–					
11. MDMQ Avoidance	-.20*	-.24**	-.06	-.04	-.25**	-.07	-.48**	.35**	.17*	.11	–				
12. MDMQ Vigilance	.21**	.29**	.06	.14	.27**	.11	.46	-.26**	-.37**	-.23**	-.46**	–			
13. MDMQ Procrastination	-.22**	-.22**	-.05	-.18*	-.34**	-.02	-.45**	.40**	.27**	.26**	.44**	-.44**	–		
14. MDMQ Hypervigilance	-.20*	-.21*	-.07	-.07	-.27**	-.10	-.58**	.43**	.34**	.21**	.47**	-.49**	.46**	–	
15. IS - Indecisiveness	-.23**	-.26**	.01	-.11	-.30**	-.18*	-.66**	.48**	.53**	.22**	.53**	-.53**	.47**	.54**	–

Note. N = 143.

* p < .05.

** p < .01.

Table 3
Hierarchical regression. The contributions of fluid intelligence, personality traits, and core self-evaluation to career decision-making difficulties (N = 143).

	β		
	Lack of readiness	Lack of information	Inconsistent Information
<i>Step 1</i>			
APM	-.21*	-.17*	-.23**
<i>Step 2</i>			
Extraversion	-.07	-.11	-.16
Agreeableness	-.01	-.05	-.07
Conscientiousness	-.05	-.04	-.06
Emotional Stability	-.29**	-.26**	-.19**
Openness	-.09	-.03	-.17*
<i>Step 3</i>			
CSES	-.36***	-.47***	-.34***
R ² step 1	.04*	.03*	.05**
ΔR^2 step 2	.12**	.11**	.11**
ΔR^2 step 3	.09***	.13**	.08**
R ² total	.25***	.27***	.24***

* p < .05.

** p < .01.

*** p < .001.

Table 4Hierarchical regression. The contributions of fluid intelligence, personality traits and core self-evaluation to decisional styles and indecisiveness ($N = 143$).

	β				
	Avoidance	Vigilance	Procrastination	Hypervigilance	Indecisiveness
<i>Step 1</i>					
APM	-.20*	.21*	-.22*	-.19*	-.23**
<i>Step 2</i>					
Extraversion	-.16	.21*	-.09	-.12	-.15
Agreeableness	-.02	.01	-.09	-.13	-.09
Conscientiousness	.01	.09	-.19*	-.03	-.04
Emotional Stability	-.17*	.17*	-.28**	-.20**	-.22*
Openness	-.09	.09	-.01	-.15	-.21*
<i>Step 3</i>					
CSES	-.42***	.34***	-.32***	-.53***	-.59***
R^2 step 1	.04*	.05*	.05*	.04*	.05**
ΔR^2 step 2	.09*	.13**	.15***	.11**	.16***
ΔR^2 step 3	.12***	.08**	.07**	.20***	.24***
R^2 total	.25***	.26***	.27***	.35***	.45***

* $p < .05$.** $p < .01$.*** $p < .001$.

processes (Savickas, 2005). By analyzing each of the three CDDQ dimensions (Gati et al., 1996), we can see that the role of the core self-evaluation construct is especially evident regarding the Lack of Information dimension showing how a negative self-evaluation could lead to a perception of greater career decision-making difficulties related to a lack of information about the Self and about occupations and on how to obtain such information. This indicates, conversely, how a positive self-evaluation could facilitate obtaining and using the information needed for the development of one's own career path. The role of the core self-evaluation construct in relation to the Lack of Readiness dimension on the CDDQ (Gati et al., 1996) also emerged, indicating how self-evaluation could also be linked to decision-making difficulties that could be encountered before the decision-making process commences. A negative self-concept could hinder individuals from embarking on the process of career decision-making. Finally, in the study, the core self-evaluation construct seemed to play a role in the Inconsistent Information dimension on the CDDQ (Gati et al., 1996) underlining how a negative self-evaluation could be linked to the perception of unreliable information and internal and external conflicts in relation to significant others.

The results of the study also confirmed the second hypothesis as the core self-evaluation construct explained a greater percentage of incremental variance compared to fluid intelligence and personality traits in relation to each of the four MDMQ decisional styles thus further emphasizing the importance of self-evaluation in decision-making processes (Watson, 2001). More specifically, it could be shown how self-evaluation can play a role in decisional styles—both adaptive (Vigilance) and maladaptive (Avoidance, Procrastination, Hypervigilance)—on the MDMQ (Mann et al., 1997) thus underlining how a positive self-evaluation can promote a careful and rational decisional style, and a negative self-evaluation an inadequate decisional style. The core self-evaluation construct, in particular, plays a role in the use of a hypervigilant decisional style characterized by a frenetic mode of decisional conflict resolution that often leads a person to choose impulsively.

Finally, the results of the study also confirmed the third hypothesis as the core self-evaluation construct explained a greater percentage of incremental variance compared to fluid intelligence and personality traits in relation to indecisiveness thus underlining the role of self-evaluation in chronic indecisiveness as well, such as the inability to make decisions in different contexts and situations (Frost & Shows, 1993). It is important to mention that, in the present study, the core self-evaluation construct had a greater impact on

indecisiveness than the other decisional variables analyzed thus demonstrating how chronic indecisiveness may be linked to a negative self-concept in terms of self-esteem, self-efficacy, cognitive/explanatory style, ability to control events—characteristics that, as underlined by Judge et al. (1997), are included in the core self-evaluation construct. Indecisiveness, considered a chronic characteristic manifesting itself in an individual's difficulty to make decisions in any context of his or her life (Frost & Shows, 1993; Osipow, 1999), seems to be, among the various decision-making aspects examined in the present study, the one most closely linked to core self-evaluation traits.

The study thus shows how decisions are related not only to the cognitive aspects of fluid intelligence and personality traits but also to other individual variables (Germeijs & De Boeck, 2003) involving self-evaluation thus further emphasizing the role played by the core self-evaluation construct (Di Fabio & Busoni, 2010).

A limitation is the impossibility of generalizing the results, which were obtained in a specific sample of Italian students. In future research, samples should be used that are more widely representative of the Italian situation, and the results in other international contexts should be studied and compared. The study highlighted the relationship between fluid intelligence, personality traits, core self-evaluation and aspects of decision-making. However, additional research is needed to further verify this relationship through confirmatory analysis.

The results of the study call for further investigation into the relationship between the core self-evaluation construct and aspects of decision-making, delineating new areas for future research and intervention. It would be particularly interesting to replicate the study on different samples (e.g. university students, interns, adults faced with transition in their lives). The study results also point to the importance of interventions for enhancing core self-evaluation (as a primary prevention intervention), screening interventions for early specific training on core self-evaluation (as a secondary prevention intervention) and, finally, intervention in crisis situations involving core self-evaluation (as a tertiary prevention intervention). The need to devise appropriate and differentiated interventions to strengthen the core self-evaluation construct is therefore crucial; on the one hand, specific training should be provided to promote the empowerment process, to create greater awareness and to enhance personal strengths; and, on the other hand, counseling and career counseling interventions should take place regarding the different decision-making problems linked to the core self-evaluation construct.

References

- Albion, M. J., & Fogarty, G. J. (2002). Factors influencing career Decision Making in adolescents and adults. *Journal of Career Assessment, 10*, 91–126.
- Campbell, R. E., & Cellini, J. V. (1981). A diagnostic taxonomy of adult career problems. *Journal of Vocational Behavior, 19*, 175–190.
- Caprara, G. V., Barbaranelli, C., & Borgogni, L. (1993). *BFQ: Big Five Questionnaire* (2nd ed.). Firenze: Giunti O.S. Organizzazioni Speciali.
- Constantine, M. G., Wallace, B. C., & Kindaichi, M. M. (2005). Examining contextual factors in the career decision status of African American adolescents. *Journal of Career Assessment, 13*, 307–319.
- Di Fabio, A., & Busoni, L. (2006). Covariation des styles décisionnels: Perception d'échec cognitif, estime de soi ou traits de personnalité? *L'Orientation Scolaire et Professionnelle, 35*, 363–385.
- Di Fabio, A., & Busoni, L. (2009). Proprietà psicometriche della versione italiana della Core Self-Evaluation Scale (CSES) con studenti di scuola secondaria [Psychometric properties of the Italian version of the Core Self-Evaluation Scale (CSES) with high school students]. *Counseling Giornale Italiano di Ricerca e Applicazioni, 2*, 73–83.
- Di Fabio, A., & Busoni, L. (2010). Core Self Evaluation e aspetti decisionali [Core self-evaluation traits and decisional aspects]. *Counseling Giornale Italiano di Ricerca e Applicazioni, 3*, 185–194.
- Di Fabio, A., Busoni, L., & Palazzeschi, L. (2011). Indecisiveness Scale: Proprietà psicometriche della versione italiana [Indecisiveness Scale: Psychometric properties of the Italian version]. *Counseling Giornale Italiano di Ricerca e Applicazioni, 4*, 13–24.
- Di Fabio, A., & Palazzeschi, L. (2009). Emotional intelligence, personality traits and career decision difficulties. *International Journal for Educational and Vocational Guidance, 9*, 135–146.
- Di Fabio, A., & Palazzeschi, L. (2010). Career Decision-Making Difficulties Questionnaire: Proprietà psicometriche nel contesto italiano [Career Decision-Making Difficulties Questionnaire: Psychometric properties in the Italian context]. *Counseling Giornale Italiano di Ricerca e Applicazioni, 3*, 351–364.
- Frost, R. O., & Shows, D. L. (1993). The nature and measurement of compulsive indecisiveness. *Behavior Research Therapy, 31*, 683–692.
- Gati, I., Krausz, M., & Osipow, S. H. (1996). A taxonomy of difficulties in career Decision Making. *Journal of Counseling Psychology, 43*, 510–526.
- Germeijs, V., & De Boeck, P. (2003). Career indecision: Three factors from decision theory. *Journal of Vocational Behavior, 62*, 11–25.
- Horner, K. L. (1996). Locus of control, Neuroticism, and stressors: Combined influences on reported physical illness. *Personality and Individual Differences, 21*, 195–204.
- Jackson, C. J., Furnham, A., & Lawty-Jones, M. (1999). Relationship between indecisiveness and neuroticism: The moderating effect of a tough-minded culture. *Personality and Individual Differences, 27*, 789–800.
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The Core Self-Evaluation Scale: Development of a measure. *Personnel Psychology, 56*, 303–331.
- Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19*, 151–188.
- Luce, R. D., & Raiffa, H. (1957). *Games and decisions*. New York: Wiley.
- Mann, L., Burnett, P., Radford, M., & Ford, S. (1997). The Melbourne Decision Making Inventory: An instrument for measuring patterns for coping with decisional conflict. *Journal of Behavioral Decision Making, 10*, 1–19.
- Nilsson, J. E., Flores, L. Y., Berkel, L. V., Schale, C. L., Linnemeyer, R. M., & Summer, I. (2007). International career articles: A content analysis of four journals across 34 years. *Journal of Vocational Behavior, 70*, 602–613.
- Nota, L., & Soresi, S. (2000). Adattamento italiano del Melbourne Decision Making Questionnaire di Leon Mann [Italian adaptation of the Melbourne Decision Making Questionnaire by Leon Mann]. *Giornale Italiano di Psicologia dell'Orientamento, 1*, 38–52.
- Osipow, S. H. (1999). Assessing career indecision. *Journal of Vocational Behavior, 55*, 147–154.
- Raven, J. C. (1962). *Advanced progressive matrices*. Firenze: Organizzazioni Speciali.
- Rigas, G., Carling, E., & Brehmer, B. (2002). Reliability and validity of performance measures in microworlds. *Intelligence, 30*, 463–480.
- Savickas, M. L. (2005). The theory and practice of career construction. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research work* (pp. 42–70). Hoboken, NJ: John Wiley & Sons.
- Tokar, D., Fischer, A., & Subich, L. M. (1998). Personality and vocational behavior: A selective review of the literature, 1993–1997. *Journal of Vocational Behavior, 53*, 147–179.
- Watson, D. C. (2001). Procrastination and the five-factor model: A facet level analysis. *Personality and Individual Differences, 30*, 149–158.