

## Decisional procrastination correlates: personality traits, self-esteem or perception of cognitive failure?

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**Abstract** The aim of the present study is to examine a number of decisional procrastination correlates. A sample of 258 subjects attending secondary school were administered the Melbourne Decision Making Questionnaire, Cognitive Failures Questionnaire, Self-Esteem Scale, Big Five Questionnaire and Five Factors Adjective Short Test. The data were subjected to correlation and multiple regression. Decisional procrastination is best explained by the Cognitive Failures Questionnaire. The results enable a further analysis in the field of decisional procrastination.

**Résumé.** **Facteurs liées à la procrastination décisionnelle: traits de la personnalité, auto-estime ou perception d'échec cognitif?** L'objectif de la présente étude est de vérifier quelques corrélations de la procrastination décisionnelle. On a administré à un échantillon de 258 sujets fréquentant l'école supérieur: le Melbourne Decision Making Questionnaire, Cognitive Failures Questionnaire, Self-Esteem Scale, Big Five Questionnaire et Five Factors Adjective Short Test. Les données statistiques ont été soumises à la corrélation et à la régression multiple. La procrastination décisionnelle est mieux expliquée par le Cognitive Failures Questionnaire. Les résultats rendent possible une analyse plus poussée dans le domaine de la procrastination décisionnelle.

**Zusammenfassung.** **Entscheidungsaufschubkorrelationen: Persönlichkeitsmerkmale, Selbstachtung oder Wahrnehmung von Kognitivem Misserfolg?** Das Ziel der vorliegenden Untersuchung ist die Prüfung von Entscheidungsaufschubkorrelationen. Einer Gruppe von 258 Oberschülern, wurden folgende Fragebogen vorgelegt: Melbourne Decision Making Questionnaire, Cognitive Failures Questionnaire, Self-Esteem Scale, Big Five Questionnaire und Five Factors Adjective Short Test.

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Die Daten wurden durch Korrelation und multiple Regression verarbeitet. Der Entscheidungsaufschub wird am besten durch das CFQ erklärt. Die Resultate ermöglichen eine tiefere Analyse auf dem Gebiet des Entscheidungsaufschubs.

**Resumen. Correlaciones del aplazamiento decisional: rasgos de la personalidad, autoestima y percepción del fallo cognitivo?** El objetivo de este estudio es averiguar las implicaciones del aplazamiento decisional. Una muestra de 258 sujetos de escuela secundaria fueron sometidos a: Melbourne Decision Making Questionnaire, Cognitive Failures Questionnaire, Self-Esteem Scale, Big Five Questionnaire y Five Factors Adjective Short Test. Los datos fueron sometidos a la correlación y a la regresión múltiple. El aplazamiento decisional queda muy bien explicado por el Cognitive Failures Questionnaire. Los resultados permiten una más amplia reflexión en el campo del aplazamiento decisional.

**Keywords** Decisional procrastination · Decision-making processes · Personality traits · Self-esteem · Cognitive failure; Procrastination décisionnelle · Prise de decision · Traits de personnalité · Auto-estime · Échec cognitif; Entscheidungsaufschub · Entscheidungsprozessen · Persönlichkeitsmerkmale · Selbstachtung · Kognitiven Misserfolg; Aplazamiento decisional · Procesos de toma de decisiones · Rasgos de la personalidad · Autoestima · Fallo cognitivo

The study of vocational behaviour at various life stages of how an individual makes educational and career choices and adapts to an occupation, lies at the centre of vocational psychology (Savickas, 2001, 2004). The choice of a school or job deeply affects the life of an individual, since personal and social adaptation, mental health and personal well-being seem to depend on it; there are few other decisions that exert such a consistent influence on the life of a person as career choice (Hackett & Betz, 1995).

The problems linked to career choice can be classified in five main typologies (Savickas, 2004): informational, decisional, relational, motivational and environmental. Within this taxonomy, decisional problems, such as deficits in the ability of decision-making, which include and activate the principles of decision-making, rank second in the classification. Even when an adequate quantity of information is available, deficits in decisional competence may hinder the ability to process this information and take a decision that leads to a suitable occupational choice.

In the dynamic model of career choice development (Van Esbroeck, Tibos, & Zaman, 2005), the profile of the individual is the result of the constant confrontation of the individual with decision-making situations, past experiences and psychosocial maturity. In this model, in the exploratory phase, activities concerning both self-exploration and the exploration of the environment are important. The focus on decisional styles, i.e., the modalities and tendencies with which people make decisions (Nota, Mann, & Soresi, 2003), should be seen in the context of self-exploration; it makes it possible to distinguish those individuals who may benefit from personal, tailored guidance sessions to make choices that are more congenial and efficacious (Germeijs & De Boeck, 2003; Nota & Soresi, 2004). Firstly, it is important to

distinguish undecided subjects from indecisive ones (Savickas, 2004). The former are generally considered persons who experience varying patterns of career development; their inability to make decisions may therefore simply be considered appropriate given their developmental stage, processing of data, decisional training and social support. The second category are usually people who show a deviant decisional pattern in vocational development, where chronic anxiety and the lack of problem-solving abilities characterise their social interactions, and not just those dealing with the work role (Savickas, 2004).

High levels of indecision can thus be considered useful indicators to distinguish individuals who need special attention during guidance sessions (Osipow, 1999). While it is true that early studies on decision-making focused on the level at which people followed normative theories and probabilistic models in order to make optimal decisions, subsequent research has mostly concentrated on how the decisional problem and situation affect the decisional process (Payne, Bettman, & Johnson, 1993). The differences between the decision-makers still seem to constitute a grey area in this field. Studies on decisional styles have, nonetheless, demonstrated the influence of individual characteristics, for example, that of cognitive style on the choice of a specific decisional strategy (Andersen, 2000; Hunt, Krzystofiak, Meindl, & Yousry, 1989), even if the definition of decisional style requires an awareness of the historical evolution and progressive complexity of the construct. Thunholm (2004) came up with an integrated definition according to which decisional style is “a pattern of response given by an individual in a decisional situation. This pattern of response is determined by the decisional situation, by the decisional task and by the same decider” (p. 941). The deciders present individual differences, in habits but also in basic cognitive abilities: information processing, self-evaluation and self-control, which have a consistent impact on the pattern of response to different tasks and situations. As Guichard and Huteau (2001) noted, decisional styles are a function of the context, but also correspond to personal tendencies (Dosnon, 1996). Among the various decisional styles, decisional procrastination plays an important role, leading some individuals to ignore problems and postpone choices for as long as possible. This is a non-adaptive modality that is likely to engender lack of success or instability: individuals generally experience unstable and disjointed work (Savickas, 2003). An analysis of the construct of decisional procrastination will consequently involve complex aspects.

Decisional procrastination in Janis and Mann (1977) is a strong predisposition not to be able to take decisions on time. Effert and Ferrari (1989) do not believe that there is only one single type of procrastination, they rather think there are various forms of the phenomenon: in particular, they indicate two behavioural typologies (academic procrastination and global procrastination, relative to everyday life). From their point of view, decisional procrastination is the deliberate avoidance decision of taking in a given lapse of time, while chronic behavioural procrastination is a form of task delaying in order to protect vulnerable self-esteem (Burka & Yuen, 1983).

Milgram and Tenne (2000) underlined the fact that many studies concentrated on behavioural procrastination (academic and everyday) identifying their antecedents and consequences, but that few studies focused on decisional procrastination and its correlates. The same authors noted that decisional procrastination can be considered both as a general disposition relative to different fields of behaviour and as a series of specific behavioural dispositions. To explain the relations between these two manifestations of procrastination, the triple approach of Lazarus and Folkmann

(1984) has been used: when faced with the need to carry out a task or take a decision, people assess whether they possess the resources to handle the situation or not and, if they perceive their resources as inadequate, they cope with the perceived anxiety that ensues, and avoid the situation by postponing the task or decision-making. Another interpretation has, however, been given by Kuhl's Action Control Theory (1984). On the basis of Kuhl's theory, decisional and behavioural procrastination call distinct higher meta-control processes into play: decisional procrastination appears to reduce self-adjustment, behavioural procrastination, self-control.

Mann's contribution (2000) opens up further possibilities of classification. In this scheme, decisional procrastination is divided into two principal categories: decisional procrastination is seen as a response to a particular problem while habitual decisional procrastination occurs in decision making situations in general.

In the first case, the main determining factor of decisional procrastination seems to be the social context in which the decision is to be taken. The second—habitual decisional procrastination—calls individual correlates into play instead that are not necessarily linked to the typology or importance of the decisional problem itself. In this second case, individual differences in cognitive styles, personality traits and motivation come to the fore.

The analysis of the implicit cognitive processes is a subject area that offers interesting viewpoints (Effert & Ferrari, 1989; Ferrari, 2000; Mann, 2000), although in the literature it is only possible to trace pioneering studies that have indicated research guidelines, which that have not always been effectively followed up.

A particularly interesting interpretation considers decisional procrastination as an expression of cognitive failure and, thus, as a delay in processing and assessing information about alternative choices as a consequence of fragility, non acquisition or memory deficit of complex information (Effert & Ferrari, 1989; Ferrari, 2000). One basic motive of decisional procrastination could be low self-esteem since, as in other types of procrastination (Burka & Yuen, 1983), undecided individuals tend to create situations which ensure that they never test their abilities. Several authors have found empirical evidence of links between decisional procrastination and self-esteem (Beswick & Mann, 1994; Effert & Ferrari, 1989; Ferrari, 2000).

Decisional procrastination has also been related to personality correlates. As Milgram and Tenne (2000) note, Holland and Holland (1977) first underlined in the field of vocational counselling the existence of a correlation between indecisiveness, high anxiety, difficulty in establishing interpersonal relationships and fear of risk. Subsequent studies have further analysed this area and signalled the correlation between decisional procrastination and personality traits, in particular neuroticism (Beswick & Mann, 1994; Milgram & Tenne, 2000; Watson, 2001), low extroversion (Beswick & Mann, 1994; Milgram & Palti, 1993; Milgram & Tenne, 2000) and low conscientiousness (Milgram & Tenne, 2000).

Recent studies have taken a more in-depth look at the role and importance of secondary personality traits compared to the principal dimensions, in various contexts (Paunonen & Nicol, 2001), particularly underlining the value of the subscales of conscientiousness (Paunonen & Ashton, 2001) and extraversion (Di Fabio & Busoni, in press).

The purpose of this work is to further understand a cognitive form of procrastination—decisional procrastination—which has a distinct typology in comparison to the behavioural forms, such as the more commonly studied everyday procrastination (Lay, 1986) and academic procrastination (Watson, 2001). The study seeks to

achieve a greater understanding of which of the individual's characteristics are involved, and design specific projects of analysis and intervention in an area which has not yet been adequately explored in the field of vocational psychology. The decision to examine these aspects more closely in a sample of students attending the last two years of an Italian secondary school was determined by this critical stage in the life of the subjects examined, since they had to cope with important choices regarding their development and career. Because the subjects were under decisional pressure, differences were evinced with greater clarity. Indeed, indecision is often stronger in periods when the social system forces the individual to make a choice; in other words, in a phase of advanced vocational development (Guichard & Huteau, 2001). This study seeks to analyse whether self-report measures, relative to decisional procrastination (Effert & Ferrari, 1989), correlate with: (a) self-report measurements linked to the phenomena of low attention, loss of information in memory, distraction and lack of ideas, all generally labelled in terms of cognitive failure (Broadbent, Cooper, Fitzgerald, & Parkes, 1982); (b) self-esteem measures (Beswick & Mann, 1994; Burka & Yuen, 1983); (c) personality traits according to the Big Five Model. Furthermore, the study aims to analyse the role of these variables in terms of predictors of decisional procrastination. The hypothesis in this study are:

- (1) the perception of the phenomenon of cognitive failures correlates positively with the phenomenon of decisional procrastination.
- (2) decisional procrastination is inversely correlated to self-esteem measures.
- (3) decisional procrastination correlates positively with neuroticism.
- (4) decisional procrastination correlates negatively to conscientiousness.
- (5) there is a slight inverse correlation between decisional procrastination and extroversion.
- (6) some subscales on the dimensions of personality, compared to the principal dimensions, are more strongly correlated with decisional procrastination: particularly, the Perseverance subscale of Conscientiousness and the Dynamism subscale of Extraversion.
- (7) the sphere of cognitive failures is a stronger predictor of decisional procrastination in comparison to other variables included in the study, i.e., personality traits and self-esteem.

## Method

### Participants

The total sample consisted of 302 subjects in the final two years of different types of secondary schools in and around the area of Florence. 258 subjects participated in the study; of these, 111 were males and 147 females. More specifically, the sample was composed as follows: 37.2% ( $N = 96$ ) Scientific Lyceum (Liceo Scientifico), 19% ( $N = 49$ ) Foreign Language Lyceum (Liceo Linguistico) 18.6% ( $N = 48$ ) Technical Commercial Institute (Istituto Tecnico Commerciale), 11.6% ( $N = 30$ ) Institute for Agriculture (Istituto Agricolo-forestale), 13.6% ( $N = 35$ ) Institute for Construction (Istituto Edile). The age of the subjects ranged from 17 to 19, with a mean age of 17.81 ( $SD = 0.73$ ).

## Instruments

To assess decisional procrastination, the F3 subscale in the Italian adaptation by Nota et al. (2003) of the *Melbourne Decision Making Questionnaire* (MQDM) on decisional styles by Mann, Burnett, Radford and Ford (1997) was used. This decisional procrastination subscale, included in a questionnaire with 22 items, is constituted by 5 items with a modality of reply on a 3-point Likert scale from 1 (*not true*) to 3 (*true*). The items include affirmations such as “I postpone taking decisions to the point that in the end it is too late to choose” and “I avoid taking decisions”. The score is from 5 to 15 and indicates the tendency of subjects to postpone the moment when they need to face the decisional problem, with the associated risk of having to decide superficially and in a hurry. The reliability of the scale in the original version is .81. In the Italian adaptation Cronbach’s alpha is .65. In the study sample the alpha is .71.

To evaluate the perception of cognitive failure, the *Cognitive Failures Questionnaire* (CFQ) by Broadbent et al. (1982) was used in the Di Fabio’s Italian version (2003, Unpublished manuscript). This instrument is a self-evaluation test relative to cognitive failures based on 25 items that refer to one of the three categories identified by Broadbent et al. (1982): area of perception, area of memory and area of motory control. The subjects were asked to indicate how often, during the previous 6 months, they had committed minor “errors” in their everyday lives because of low attention, loss of information in memory, distraction and lack of ideas. Examples of the items are: “Were you reading something when you realised that you were not thinking about what you read and had to start anew?” and “Do you forget appointments?”. The modality of response to these items was based on a 5-point Likert scale from 4 (*very often*) to 0 (*never*). The total score of the CFQ ranges from 0 to 100: the higher the score, the greater the frequency of self-reported cognitive errors. The questionnaire has a Cronbach alpha of .81 (Di Fabio, Giannini, & Martelli, 2004).

To assess self-esteem, the Italian version by Prezza, Trombaccia and Armento (1997) of Rosenberg’s *Self-Esteem Scale* (RSES) (1965) was used. This Self-Esteem scale consists of 10 items. The subjects were asked to express to what extent they agreed with each item on a 4-point Likert scale from 4 (*strongly agree*) to 1 (*strongly disagree*). The replies given were summed and high scores were an indicator of high self-esteem (score range from 10 to 40). The items were of the type: “I have a positive attitude towards myself” and “I tend to believe that I am a complete failure”. The internal consistency of the scale corresponds to Cronbach’s alpha .84.

To evaluate personality traits, the Big Five Questionnaire (BFQ) by Caprara, Barbaranelli and Borgogni (1993) was used. The questionnaire, consisting in 132 items, selects five fundamental dimensions for the description and evaluation of personality, indicated as extraversion (E), agreeableness (A), conscientiousness (C), emotional stability (S) and openness (M). Each of these consisted of 24 items. In addition, a sixth scale—L (Lie)—was present, with 12 items that measured the tendency of the subject to give a false profile of him/herself. The five principal scales implied two subscales: scale E is defined by the two subscales of dynamism (Di) and dominance (Do); scale A by co-operation/empathy (Cp) and cordiality/friendly behaviour (Co); scale C by scrupulousness (Sc) and perseverance (Pe); scale S by emotional control (Ce) and impulse control (Ci); finally, scale M by cultural open-

ness (Ac) and openness to experience (Ae). Examples of items are: “I think I am an active and vigorous person” (subscale Di) and “Usually, I do not lose my temper” (subscale Ci). The response to each item was reported on a 5-point Likert scale from 1 (*absolutely false for me*) to 5 (*absolutely true for me*). The score foresees an initial rough count for each principal dimension and relative subdimensions. Subsequently, the points were converted into standard T-scores. Reliability of the questionnaire scales was examined by using Cronbach’s alpha co-efficient that ranged from a value of .73 for scale A to .90 for scale S.

Moreover, to assess personality, the *Five Factors Adjective Short Test* (5-FasT) by Giannini and Lauro Grotto (2004) was used. This instrument is made up of a list of 100 dichotomous adjectives that are easy and fast personality descriptors. To construct this test the authors referred to the five personality factors contained in 16-PF-5 by Cattell: extroversion (EX), anxiety (AX), resilience (TM), independence (IN) and self-control (SC). Twenty-six of the 100 adjectives were used to indicate five factors called: neuroticism, emotional stability, constraint, self-reliancy and surgency. Examples of these adjectives are: “anxious” and “confused” for neuroticism, “calm” and “reasonable” for emotional stability and “methodical” and “precise” for constraint. The subjects were invited to indicate as “True” the adjectives that described their own personality, and as “False” those which did not describe it. One point was given for each “True” response and no point for “False”. The scores went from 0 to 5 for emotional stability, constraint, self-reliancy and surgency, and from 0 to 6 for neuroticism. The reliability of the instrument demonstrated a Cronbach alpha of .75 for neuroticism, .70 for emotional stability, .69 for constraint, .59 for self-reliancy and .62 for surgency.

### Procedure and data analysis

The tests were administered collectively in the classroom by specialised staff, at a time agreed upon with the school and in accordance with the law on privacy. The students knew that they would receive individual feedback and would be able to benefit from a subsequent guidance session.

The modalities of data elaboration used in this study were descriptive statistics, correlations and the multiple regressions enter method.

### Results

Means, standard deviations and correlations are reported in Table 1. Decisional procrastination has a higher correlation with cognitive failure, while the correlation is inferior and negative with self-esteem. On personality traits, procrastination is inversely correlated with Scale E (extroversion) of the Big Five, but even more so with its subscale Di (dynamism). In addition, it correlates inversely with Scale C (conscientiousness) of the Big Five, but more so with its subscale Pe (perseverance). Values of positive correlation were found with the scale NE (neuroticism) and with the scale CH (self-reliancy) of the 5-FasT.

Means, standard deviations and correlations relative to variables used in analysing regression are recapitulated in Table 2. The analysis of regressions based on the scores from the study sample ( $n = 258$ ) are reported in Table 3.

**Table 1** Means, standard deviations and correlations relative to decisional procrastination, cognitive failure, self-esteem and personality traits

Var	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1MDMQF3	8.64	2.27	-																						
2 CFO	46.93	13.33	.45**	-																					
3 RSES	30.03	5.09	-.29**	-.26**	-																				
4 BFO E	74.99	9.84	-.33**	-.15*	.38**	-																			
5 BFO A	76.16	9.73	-.08	.02	-.05	.03	-																		
6 BFO C	78.18	10.99	-.21**	-.25**	.20**	.32**	-.01	-																	
7 BFO S	63.68	12.87	-.05	-.22**	.30**	.15*	.04	.05	-																
8 BFQM	77.97	9.96	-.21**	-.10	.05	.24**	.23**	.21**	-.04	-															
9 BFO Di	39.01	5.67	-.36**	-.12	.25**	.79**	.29**	.19**	.13*	.28**	-														
10 BFO Do	35.96	6.37	-.19**	-.13*	.37**	.84**	-.20**	.32**	.11	.11	.32**	-													
11 BFO Cp	39.43	5.03	-.08	.00	-.07	.00	.81**	-.00	.03	.26**	.19**	-.17**	-												
12 BFO Co	36.87	6.17	-.10	.00	-.01	.06	.88**	-.03	.08	.13*	.29**	-.16**	.48**	-											
13 BFO Sc	36.16	7.30	.04	-.13*	.03	.10	-.11	.80**	-.02	-.02	-.09	.09	-.12	-.09	-										
14 BFO Pe	42.07	6.63	-.38**	-.26**	.29**	.51**	.09	.77**	.09	.38**	.41**	.12*	.05	.24**	-.03	-									
15 BFO Ce	32.66	7.66	-.13*	-.23**	.45**	.28**	-.04	.04	.87**	.02	.23**	.24**	-.06	-.03	-.10	.17**	-.02	.50**	-						
16 BFO Ci	31.07	7.14	-.05	-.15*	.07	-.05	.11	.04	.85**	-.08	-.01	-.07	.01	.17**	.07	-.02	.50**	-							
17 BFO Ac	37.91	6.13	-.18**	-.18**	.06	.15*	.12*	.21**	.01	.82**	.16*	.09	.15*	.04	.04	.31**	.09	-.07	-						
18 BFO Ae	40.35	5.82	-.18**	-.01	.02	.27**	.28**	.12	-.07	.75**	.32**	.12	.26**	.22**	-.10	.31**	-.06	-.06	.33**	-					
19 5Fast Ne	3.16	1.90	.36**	.26**	-.57**	-.38**	.02	-.10	-.44**	-.06	-.33**	-.30**	.04	-.02	.11	-.28**	-.58**	-.18**	-.05	-.07	-				
20 5Fast St	3.71	1.35	.02	-.12*	.04	-.10	.14*	.17**	.28**	-.08	-.07	-.10	.09	.15*	.20**	.04	.15*	.34**	-.04	-.05	-.09	-			
21 5Fast Ri	2.40	1.53	-.08	-.15*	.16*	.10	-.06	.50**	.10	-.04	.02	.13*	-.06	-.03	.53**	.24**	.07	.09	-.01	-.08	-.14*	.23**	-		
22 5Fast Ch	1.61	1.41	.28**	.06	-.18**	-.21**	-.27	.09	-.03	-.09	-.31**	-.05	-.27**	-.25**	.22**	-.09	-.06	.01	-.01	-.12	.27**	.03	.07	-	
23 5Fast En	3.22	1.49	-.15*	-.06	.38**	.40**	.03	.02	.24*	.06	.37**	.30**	-.01	.06	-.14*	.19**	.34**	.05	.00	.13*	-.40*	-.03	.10	-.17**	

Note: (N = 258); \* p < .05, \*\* p < .01, MDMQF3 = Melbueme Decision Making Questionnaire (Procrastination); CFO = Cognitive Failure Questionnaire; RSES = Rosenberg Self-Esteem Scale; BFO E = Big Five Questionnaire (Extraversion Scale); BFO A = Big Five Questionnaire (Agreeableness Scale); BFO C = Big Five Questionnaire (Conscientiousness Scale); BFO S = Big Five Questionnaire (Emotional Stability Scale); BFO M = Big Five Questionnaire (Openness Scale); BFO Di = Big Five Questionnaire (Dominance Subscale); BFO Do = Big Five Questionnaire (Dynamism Subscale); BFO Co = Big Five Questionnaire (Cordiality Subscale); BFO Sc = Big Five Questionnaire (Scrupulousness Subscale); BFO Cp = Big Five Questionnaire (Cooperation Subscale); BFO Ce = Big Five Questionnaire (Emotional Control Subscale); BFO Ci = Big Five Questionnaire (Impulse Control Subscale); BFO Pe = Big Five Questionnaire (Perseverance Subscale); BFO Ce = Big Five Questionnaire (Openness to Experience Subscale); 5Fast Ne = Five Factors Adjective Short Test (Neuroticism); 5Fast St = Five Factors Adjective Short Test (Emotional Stability); 5Fast Ri = Five Factors Adjective Short Test (Constraint); 5Fast Ch = Five Factors Adjective Short Test (Self-Reliance); 5Fast En = Five Factors Adjective Short Test (Sturgency)



**Table 2** Means, standard deviations and correlations relative to decisional procrastination, perception of cognitive failure, self-esteem, dynamism, perseverance, emotional control, openness, neuroticism and self-reliancy in the total sample ( $N = 258$ )

Variable	M	SD	1	2	3	4	5	6	7	8	9
MDMQ F3	8.64	2.27	–								
CFQ	46.03	13.33	.45**	–							
RSES	30.03	5.09	-.29**	-.26**	–						
BFQ Di	39.01	5.67	-.36**	-.12	.25**	–					
BFQ Pe	42.07	6.63	-.38**	-.26**	.29**	.41**	–				
BFQ Ce	32.66	7.66	-.13*	-.23**	.45**	.23**	.17**	–			
BFQ M	77.97	9.96	-.21**	-.10	.05	.28**	.38**	.02	–		
5-Fast Ne	3.16	1.9	.36**	.26**	-.57**	-.33**	-.28**	-.58**	-.06	–	
5-Fast Ch	1.61	1.41	.28**	.06	-.18**	-.31**	-.09	-.06	-.09	.27**	–

Note: \* $p < .05$  \*\* $p < .01$ ; MDMQ F3 = Melbourne Decision Making Questionnaire (Procrastination); CFQ = Cognitive Failures Questionnaire; RSES = Rosenberg Self-Esteem Scale; BFQ Di = Big Five Questionnaire (Dynamism Subscale); BFQ M = Big Five Questionnaire (Openness Scale); BFQ Pe = Big Five Questionnaire (Perseverance Subscale; BFQ Ce = Big Five Questionnaire (Emotional Control Subscale); 5Fast Ne = Five Factors Adjective Short Test (Neuroticism); 5Fast Ch = Five Factors Adjective Short (Self-reliancy)

**Table 3** Multiple regression: values of predictability of perception of cognitive failure, self-esteem, dynamism, perseverance, emotional control, openness, neuroticism and self-reliancy with respect to decisional procrastination in the total sample ( $N = 258$ )

Variable	B	SEB	$\beta$	$p$
CFQ	.06	.01	.35	.001
RSES	-.02	.03	-.04	.527
BFQ Di	-.06	.02	-.16	.007
BFQ Pe	-.05	.02	-.15	.016
BFQ Ce	.04	.02	.15	.017
BFQ M	-.01	.01	-.05	.355
5-Fast Ne	.25	.09	.21	.004
5-Fast Ch	.21	.09	.13	.015

Note:  $R^2 = .38$ ,  $p < .001$ ; CFQ = Cognitive Failures Questionnaire, RSES = Rosenberg Self-Esteem Scale, BFQ Di = Big Five Questionnaire (Dynamism Subscale), BFQ Pe = Big Five Questionnaire (Perseverance Subscale), BFQ Ce = Big Five Questionnaire (Emotional Control Subscale), BFQ M = Big Five Questionnaire (Openness Scale), 5Fast Ne = Five Factors Adjective Short Test (Neuroticism), 5Fast Ch = Five Factor Adjective Short Test (Self-Reliancy)

The model of regression shows that decisional procrastination is best explained by the variable CFQ with a co-efficient of regression equal to  $\beta = .35$ . Similarly, the neuroticism factor of 5-FasT explains decisional procrastination with a coefficient of regression equal to  $\beta = .21$ . The results demonstrate that the impact of the subscale dynamism ( $\beta = -.16$ ), of the subscale perseverance ( $\beta = -.15$ ), of the subscale emotional control ( $\beta = .15$ ) of the BFQ and of the factor self-reliancy ( $\beta = .13$ ) of the 5-FasT on decisional procrastination was even more modest. All the coefficients were statistically significant (see Table 3), whereas the variable self-esteem (RSES) and the variable openness (BFQ M) had coefficients that were not statistically significant (see Table 3).

## Discussion

The present work seeks to analyse a cognitive form of procrastination, decisional procrastination, as distinct from the more commonly studied behavioural forms of everyday procrastination and academic procrastination, with the aim of better understanding the involved variables of the individual so as to devise appropriate plans of intervention.

The specific object of the study was to investigate the area of decisional procrastination in a sample of students in the final two years of Italian secondary education, where they were under pressure to make choices and take decisions regarding their future in the academic and career field. By using self-report questionnaires, the study aimed at broadening the understanding of the phenomenon of decisional procrastination and its correlates in terms of cognitive failures, self-esteem and personality traits, according to the Big Five model.

The first hypothesis, which postulated a positive correlation between decisional procrastination and the perception of the phenomenon of cognitive failures, largely confirmed expectations. This result was consistent with Effert and Ferrari's research (1989), and showed the relationship between decisional procrastination and cognitive failures.

The second hypothesis of inverse correlation between decisional procrastination and the individual's self-esteem was also confirmed. In common with other types of procrastination, the decisional procrastinators in the sample in question manifested vulnerable self-esteem. Procrastinators can avoid failure caused by lack of skill and thus avoid damage to an already low self-esteem, as suggested by Beswick and Mann (1994), Burka and Yuen (1983), Effert and Ferrari (1989).

The third hypothesis, suggesting that decisional procrastination correlated positively with neuroticism, was confirmed. This outcome was consistent with previous studies (Milgram & Tenne, 2000; Watson, 2001) and supported the hypothesis that self-regulating processes are important in order to avoid procrastination in decision-making (Kuhl, 1984).

The fourth hypothesis correlating decisional procrastination with conscientiousness was also confirmed. It was found that decisional procrastination correlated negatively with conscientiousness, but this relation appeared weaker in comparison to the positive link with neuroticism. This significant result, consistent with Kuhl's findings (1984), seems to indicate that in decisional procrastination, the process of self-control is less compromised and there is a greater involvement of the self-regulating process. The former, i.e., the process of self-control, is part of the sphere of conscientiousness and calls into play, among other aspects, self-discipline and commitment to duty; it is more involved in task avoidance procrastination. The latter, i.e., the self-regulating process, connected to neuroticism, is commonly involved in decisional procrastination, since an adaptive predisposition without accentuating anxiety, depression and other behaviours usually ascribed to neuroticism is necessary in order to take decisions without delay. Decisional procrastination and behavioural procrastination would seem to involve two distinct higher meta-control processes.

The fifth hypothesis, which inversely correlates decisional procrastination with extroversion, was also confirmed. Being energetic, outspoken or gregarious—characteristics that operationally define extroversion—are assets in decision making

(Milgram & Palti, 1993; Milgram & Tenne, 2000): extroverts have greater self-confidence and social competence and are able to solicit and receive advice and other forms of support that facilitate making decisions.

The sixth hypothesis, on the basis of which a number of personality subscales had a greater correlation with decisional procrastination in comparison to their principal dimensions, was confirmed: in particular, Perseverance, a subscale of conscientiousness, followed by dynamism, a subscale of extraversion, both have a greater inverse correlation with respect to their principal scale. The results were detailed and featured specific links, thus clearly evincing the numerous aspects involved in decisional procrastination.

The results of the first six hypotheses thus confirmed the findings of previous studies on correlation. Furthermore, the results also underlined a stronger association between the phenomenon of decisional procrastination and cognitive failure in comparison to other variables. In the analysis of multiple regression, the study evinced that decisional procrastination can be largely explained by CFQ (measures of perception of cognitive failure) and, to a lesser extent, with the exception of self-esteem and openness, by the other factors taken into account.

The seventh hypothesis, which indicated the perception of cognitive failure as the major predictor of decisional procrastination compared to other variables included in the study, was also confirmed.

Decisional procrastination may imply a tendency to forgetfulness and memory absence, calling into play phenomena of cognitive failures, such as underestimating the amount of time necessary to complete a task, a failure in evaluating it or even actually forgetting its fundamental aspects because of fragility, deficit in acquisition, retention and processing of information.

## Conclusions

Career decision-making is a complex process. Crites (1969) and Tyler (1969) had suggested the existence of different typologies of indecision and even more recently there has been an attempt to classify them (Wanberg & Muckinsky, 1992). Yet, no agreement has been reached among the authors on the dimension of career indecision (Gati, Krausz, & Osipow, 1996). Thus, it is worth recalling as a reference point that it is important to distinguish undecided subjects from indecisive ones (Savickas, 2004) in order to plan any heterogeneous intervention tailored to the characteristics of the subjects.

Osipow (1999) recalled the importance of singling out the individuals who would be the subject of specific attention during the guidance sessions, since they were characterised by problems linked to decision-making that differentiated them from other people who—though insecure—had the capacities and prerequisites to move autonomously towards a betterment of the decision-making state.

The dynamic model of career choice development (Van Esbroeck et al., 2005) implies, among other things, an increased awareness in terms of self-exploration. Focus placed on the decisional style of procrastination as a tendency to postpone the moment when the decisional problem, with its non-adaptive implications needs to be faced, allows for a more thorough examination of the prospective, both in terms of comprehension and intervention. A greater knowledge of the correlates and possible antecedents of decisional procrastination may offer a valid and useful contribution to

the implementation of specific intervention, whether in terms of screening or, more generally, prevention and recovery (Nota & Soresi, 2004). With regard to pinpointing subjects at risk, it is important to remember that, on the one hand, they tend to avoid making decisions, thereby increasing the probability that the situation will become even more complex (Maddux & Lewis, 1995); on the other hand, the central issue of career and academic indecisiveness is manifested precisely by the difficulty of making decisions and recognising a situation of uncertainty (Peterson, Sampson, Readon, & Lenz, 1996). More particularly, the results of this study suggest that the role of cognitive failures should be singled out from among the various aspects of the individual. People who manifest cognitive problems (attention, memory, cognitive strategies, etc.) may have greater difficulty in making choices that concern their academic or career future, and may manifest a behaviour typical of decisional procrastination.

The limits of this study are connected to the experimental design and size of the sample. The design and the sample restrict the applicability of the findings to students outside the respondents. Other limits concern the use of self-report measurements. Nonetheless, these overall results elicit further studies on decisional procrastination, both in terms of correlates and predictors, so as to keep in mind the different cognitive variables concerned. An area of study that might lead to significant results would be the analysis and determination of the relative weight of cognitive and personality variables in decisional procrastination. It is necessary to reflect on this area that concerns the implications of cognitive failures—low attention, loss of information in memory, distractibility and lack of ideas—in relation to the phenomenon of decisional procrastination, since this may prove of significance for future studies and new forms of intervention both in terms of prevention and recovery.

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