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The mediating impact of parental support on the relationship between personality and career indecision
in adolescents

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Abstract

In the Swiss education system, approximately 55% of adolescents are required to make their first vocational choice at the end of mandatory school. This can induce transitory or long-lasting career indecision that is recognized as being influenced by personal and contextual factors. The aim of this study is to analyze the relationships between career decision-making difficulties and the five-factor model of personality traits, parental support, and self-esteem in 448 grade nine Swiss adolescents. We then proceeded to test if these relationships vary according to the adolescent's educational choice (i.e., whether they attend high school or if they choose an apprenticeship or vocational training). Results have highlighted the importance of neuroticism, conscientiousness and parental support to predict career decision-making difficulties. Moreover, parental support mediated the relationships between extraversion and agreeableness (fully), and conscientiousness (partially) and career decision-making difficulties. Finally, the educational choice had no impact on the overall pattern of relationships. Implications for career counselor practices were further discussed.

Keywords: career indecision, personality, self-esteem, parental support, educational choice, adolescence

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In Switzerland, most adolescents are required to make their first career choice at about the age of fourteen, in order to pursue their education in the appropriate upper secondary sector. Indeed, about 45% of young people will pursue their education in a high school, whereas another 55% will choose an apprenticeship or attend a full time vocational school, thus choosing a specific profession. Transitions such as this can easily promote indecision (Patton & Creed, 2001). In fact, career decisions are often among the most challenging and complex decisions made in an individual's life and adolescents are frequently unprepared to cope with them. A better understanding of how different personal and interpersonal factors impact career indecision in adolescents could help career counselors develop more focused vocational and career guidance interventions. According to the recent model developed by Rossier (2015), the relationship between relatively stable dispositions, such as personality traits and general cognitive abilities, and career-related behavior expression, such as career choice and career indecision, is mediated and/or moderated by regulation processes, as for example the self-concept and career adaptabilities, that can take into account the contextual constraints and allow people to adapt their behavioral expression. As a result, it is important not only to study the single direct effect of such dispositional variables on career behaviors, but also to consider more adaptive regulation processes and contextual variables as possible mediators and moderators of the effect that relatively stable disposition has on behavior. Thus, the first aim of this study was to analyze the relationship respectively arising between dispositional personality traits, perceived parental support and self-esteem, and career decision-making difficulties in a large sample of Swiss adolescents. The second aim was to test the possible mediating effect of perceived parental support and self-esteem (regulation processes) in the relationship between personality traits and career indecision. The third aim was to investigate if the

educational choice (high school vs. apprenticeship), meant as contextual variable, impacts the overall pattern of interrelation with the studied variables.

Career Indecision

Career indecision refers to problems and challenges that can occur before, during or after the decision-making process (Gati, Krausz, & Osipow, 1996). Career indecision emerges when a choice should be made: it can be a normal and positive developmental experience that allows youngsters to explore different options; however it can turn out to be a major issue if it lasts too long, thus limiting the career decision-making process, and if, for instance, it prevents the adolescents from adequately pursuing their education. The latter case is more specifically applicable to the adolescents who start an apprenticeship and who therefore have to choose a specific vocation. These youngsters will encounter problems and challenges related to the decision-making process sooner than their peers who continue their education in high schools. Gati and colleagues (1996) proposed a taxonomy of these career decision-making difficulties to include three categories: lack of readiness (which occurs before the individual begins the decision-making process), lack of information, and inconsistency of information. The latter two arise only after the process has begun. Researchers analyzing the validity of this taxonomy have found empirical support in different national samples (Gati et al., 1996; Mau, 2001; Di Fabio & Palazzeschi, 2013) and in both university (Osipow & Gati, 1998) and high school students (Gati & Saka, 2001). With reference to young adults, studies conducted on a sample of Italian adolescents found that career indecision presents consistent relationships with personality traits (Di Fabio, Palazzeschi, Levin, & Gati, 2014). Di Fabio and colleagues (2014) found also that high school students experienced more developmental career indecision than university students or those involved in on-the-job training. Moreover, extraversion and neuroticism contributed to explain a significantly larger percentage of variance of career indecision levels than did educational setting or age, confirming the importance of dispositions in explaining developmental career indecision.

Personality and Career Indecision

Personality is an important aspect to consider when studying career choices and career development: indeed, some personality traits can be protective factors or risk factors for career decision-making difficulties (Rossier, 2015). Several studies have found correlations between personality traits and career indecision, and most studies have considered the five-factor model (McCrae & Costa, 1999), that claims that personality traits can be parsimoniously captured by five higher-order personality dimensions (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness). A recent meta-analysis investigating the associations between the five-factor model and career decision-making difficulties found that neuroticism correlated positively ($\bar{r} = .23$) and extraversion ($\bar{r} = -.16$), openness ($\bar{r} = -.13$), and conscientiousness ($\bar{r} = -.22$) negatively with these difficulties (Martincin & Stead, 2015). Results across studies were however quite different. For example, extraversion and neuroticism were found to be the dimensions most strongly related with career decision-making difficulties in the study by Kelly and Shin (2009), whereas Lounsbury, Hutchens, and Loveland (2005) observed that conscientiousness was positively and significantly correlated with career decidedness in both 7th, 10th, and 12th grade students, that neuroticism was associated with career decidedness only for 12th grade girls, and that extraversion did not correlate with career decidedness. The overall direct impact of personality on career indecision is well documented, but the respective impact of each personality dimension on career indecision did vary between the studies. Thus, more research is needed to better describe the relationship between personality traits and career indecision. Moreover, following the suggestion by Rossier (2015), it would be important to further study the mediators of this relationship, as well as the moderators, which could explain the discrepancies across studies, as mentioned above. It is important to notice that Martincin and Stead (2015) have already determined that both age and nationality were significant moderators of the relationship between personality traits and career indecision.

Parental Support and Career Indecision

Perceived social support, and in particular the support provided by the family, plays a central role in the life of adolescents. Indeed, it can create an atmosphere that encourages active exploration of one's self and environment, and give a stable basis for the youngster to cope with stressful events and conceive his/her future (Prezza & Principato, 2002). Social support can be defined as the information that brings individuals to feel loved, esteemed, and included in a network made of communication and reciprocal obligations (Cobb, 1976). Perceived social support is then the subjective evaluation the individual makes of being supported, for example of receiving support and empathy when he/she needs it. It can be provided by the family, but also by friends or significant others (Zimet, Dahlem, Zimet, & Farley, 1988) and has been related to career and the adolescent's career choice decidedness (Howard, Ferrari, Nota, Solberg, & Soresi, 2009; Whiston & Keller, 2004). Besides the more generally perceived social support, parental career-specific behavior has been further defined. For instance, Dietrich and Kracke (2009) identified three types of career-specific behaviors: career-related support (parents who help their children make their own choices, by providing guidance and instrumental support), interference in career choices (parents who excessively control their children's career actions and choices) and parents' lack of engagement (due to disinterest in their children's career choices or in their issues, or because they are over-challenged). They also found that high levels of career-related support, low levels of interference, and high levels of lack of engagement did predict high levels of career exploration, whereas high levels of interference did predict high levels of career decision-making difficulties. In the present study, family emotional support and the parents' career-specific behaviors were considered jointly, in order to achieve a global measure of parental support, taking into account these two important types (emotional and instrumental) of perceived parental support.

Self-Esteem and Career Indecision

Self-esteem is usually defined as the global evaluation made by an individual of her or his worth as a person (Rosenberg, 1965). Several studies have observed a negative correlation between self-esteem and career indecision (Resnik, Fauble, & Osipow, 1970; Vignoli, 2009), and the meta-analysis by Choi and colleagues (2012) showed that self-esteem was positively correlated with career decision-making self-efficacy. Moreover, people with high levels of self-esteem were found to adopt more effective coping strategies in stressful situations than people with low levels of self-esteem (Dumont & Provost, 1999; Martyn-Nemeth, Penckofer, Gulanick, Velsor-Friedrich, & Bryant, 2009). For this reason, high levels of self-esteem could help adolescents to cope with transitions, which are stressful moments that imply career choices and other career-related decisions and activities (e.g., choosing and obtaining an apprenticeship, exploring different educational options, and choosing a major).

Parental Support and Self-esteem as Possible Mediators

So far, we have described the associations between career indecision and, respectively, personality traits, emotional and instrumental parental support, and self-esteem. No study has considered all these variables simultaneously; however, previous studies found associations between personality traits and perceived social support. The meta-analysis of studies conducted on the relationship between personality and coping strategies (including emotional and instrumental support) by Connor-Smith and Flachsbart (2007) showed that extraverted individuals, who are sociable, assertive, active, and enjoy interacting, seem to have more opportunity to seek out and receive support from others. Moreover, agreeable individuals, who are altruistic, trusting, and modest, tend to maintain positive relationships and this could explain why they were found perceiving more support (Bowling et al., 2005; Connor-Smith & Flachsbart, 2007). Conscientious individuals, who tend to be goal directed, reliable, and planful, could be more prone to seek and receive effective support and thus to perceive more support. Concerning the open to experience personality trait, i. e. the propensity to be creative,

original, and open to new ideas, it was only rarely and weakly associated with the perception of social support (Allemand et al., 2015). Finally, results of previous studies are less consistent concerning the neurotic trait. For example, the meta-analysis by Connor-Smith and Flachsbart (2007) indicate that neurotic individuals could tend to engage in coping attempts as, in particular, emotional support seeking. At the opposite, the study by Allemand et al. (2015) rather suggest that neurotic individuals, tending to implement avoidance coping strategies, could seek less support and then perceive others as less supportive. All five personality traits were also found to be associated with self-esteem. The strongest associations were nevertheless found with the two traits having a clear affective component, i.e. extraversion (positive affect) and neuroticism (negative affect) (Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001). Those having a temperamentally high threshold for the experience of positive affect could in fact tend to feel positively about themselves, and conversely those having a low threshold for the experience of negative affect could tend to feel negatively about themselves. Finally, links were established between parental support perceived by children and their self-esteem (Arslan, 2009; Tam, Lee, Har, & Pook, 2011). Perceiving support, and thus having the feeling of being loved and appreciated, could in fact increase the adolescent' self-esteem. Considering all these variables together, and according to the theoretical model suggested by Rossier (2015), self-esteem should be considered as a possible mediator of the relationship between personality and career indecision. Personality traits might also influence the individual's abilities to seek support. In this case, both personal and contextual adaptive resources could mediate the relationship between personality and career indecision. Results of several studies supported the idea that the quality of social interactions can mediate the relationship between personality and a behavioral outcome. For example, Manders, Scholte, Janssens, and De Bruyn (2006) found that the father/mother-adolescent relationship did partially mediate the relationship between personality and externalizing behaviors.

Aims of the Present Study

The first aim of this study was to analyze the relationships between career decision-making difficulties and, respectively, personality traits, perceived parental support, and self-esteem. We expected to find that personality traits (in particular neuroticism and conscientiousness), parental support, and self-esteem directly affect career indecision. Secondly, considering that both personal and contextual adaptive resources can mediate the relationship between stable dispositions and behavioral outcomes, we suggested that parental support would partially mediate the effect of neuroticism, extraversion, agreeableness and conscientiousness, and that self-esteem would partially mediate the effect of the five personality traits and support, on career decision-making difficulties. Finally, educational choices could impact how and when personal and social resources have an effect on adolescents' career indecision. In Switzerland, there are two main educational pathways after compulsory school: High Schools or Vocational Education and Training (VET). While it is true that they still have to make a major choice, the adolescents who choose a high school feel the pressure of having to make a career choice less than the adolescents who choose or have to start an apprenticeship. As a result, their respective situations differ enormously. This leads us to suggest that the educational choice (attend a high school or start vocational training) could impact the relative weight of the relationships studied.

Method

Participants

The total sample consisted of 448 grade nine students (i.e. the last year of compulsory school), from 7 out of 35 junior high schools in the Italian-speaking Swiss region. The schools were selected so as to enhance the representativeness of the sample and in agreement with the Department for Education of the Italian-speaking region of Switzerland. The sample included 215 girls and 233 boys. The age of students ranged from 14 to 17 years ($M_{\text{age}} = 14.60$, $SD = 0.70$). In Switzerland, at the end of compulsory school, adolescents have to choose between two main educational pathways, which are

Vocational Education and Training (VET) and High Schools. Typically, VET prepares for direct entry in the labor market whereas High Schools prepare for tertiary education. Access to high school implies that students have certain prerequisites, including having attended aptitude courses in mathematics and German and having a final average calculated on all subjects of 4.65 or more (marks are given on a scale from 2 to 6, where 4 indicates a sufficient mark). Adolescents who do not have these prerequisites (normally about 55%) are obliged to choose a specific vocation and to enter a full time vocational school or start an apprenticeship. In our sample, 217 students had the prerequisites (113 boys and 104 girls) to access a high school and 231 did not (120 boys and 111 girls).

Measures

NEO-Five Factor Inventory-3. Personality traits were measured using the Italian version of the NEO- Five Factor Inventory-3 (NEO-FFI-3; McCrae & Costa, 2004), a short version of the NEO-Personality Inventory-3. NEO-FFI-3 consists of 60 items and assesses the five main personality dimensions of the Five-Factor Model (McCrae & Costa, 1999): neuroticism (N), extraversion (E), openness to experience (O), agreeableness (A) and conscientiousness (C). Subjects are asked to provide answers based on a 5-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”. McCrae and Costa (2004) validated the revised version of the NEO-FFI on 1,959 high school students and 1492 adults. Cronbach’s alphas reported for the high school sample were .82 for N, .80 for E, .76 for O, .75 for A, and .81 for C. Internal reliability in this study were .77 for N, .67 for E, .69 for O, .70 for A and .82 for C.

Multidimensional Scale of Perceived Social Support. Family emotional support was assessed based on the family subscale provided in the Italian-validated version of the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988; Prezza & Principato, 2002). This subscale consists of 4 items that measure the perceived emotional support provided by the family. Answers were provided on a 7-point Likert scale ranging from 1 “very strongly disagree” to 7 “very strongly agree”.

The internal reliability of original family subscale was .87 and a value of .88 was found for the Italian version. The internal reliability of the family subscale in the current study was .90.

Parental Career Related Behavior. The specific behaviors of parents when helping their adolescents prepare for a career choice were assessed using the Italian language version of the Parental Career-related Behavior scale (PCB; Dietrich & Kracke, 2009). The PCB scale consists of 15 items assessing three specific parent behaviors: support, interference, and lack of engagement in their children's career choices. The internal reliability of the original scale were .93 for girls and .84 for boys for the support dimension, .72 for girls and .78 for boys for interference, and .68 for girls and .75 for boys for the lack of engagement dimension. In the present study, Cronbach's alphas were .87 for support, .83 for interference and .89 for lack of engagement. Internal reliability computed on the whole set of items was .75. A second order CFA performed with the three dimensions of the PCB reached an adequate fit ($\chi^2/df=2.02$; TLI=.970; CFI=.976; RMSEA=.048) and warranted the use, in the present study, of a global score for career-specific support.

Rosenberg Self-Esteem Scale. Self-esteem was assessed with the Italian version of the ten-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; Prezza, Trombaccia, & Armento, 1997). RSES provides a one-dimensional measure of self-esteem and suggests a 4-point Likert response scale from 1 "strongly agree" to 4 "strongly disagree". Cronbach's alpha for the original version of this scale was .84. It was also .84 in the Italian validation whereas it was .88 in the present study.

Career Decision-making Difficulties Questionnaire. To assess career indecision we used the Italian version of the Career Decision-making Difficulties Questionnaire (CDDQ; Gati et al., 1996; Di Fabio & Palazzeschi, 2013). This questionnaire consists of 34 items assessing career indecision on three main subscales: lack of readiness, lack of information, and inconsistency of information. Subjects are asked to provide answers based on a 9-point Likert scale ranging from 1 "does not describe me" to 9 "describes me well". Gati et al. (1996) reported a Cronbach's alpha reliability of .80 and .95 for the

total scale, of .70 and .63 for lack of readiness, of .93 and .95 for lack of information, and of .91 and .89 for inconsistency of information in Israeli and American samples, respectively. In the present study Cronbach's alpha was .91 for the total scale, .62 for lack of readiness, .92 for lack of information, and .82 for inconsistency of information.

Procedure

In each school, an online questionnaire was administered in the IT classrooms by the first author. Teachers were involved only to help managing big classes. Before starting to fill out the questionnaire, participants were reminded about the topic of the study and were reassured about confidentiality of their answers. Brief information was given about how to open the online form and answer to the questions. Students who had doubts about some questions could ask the researcher for clarifications. This research complies with the ethical rules of the Swiss Society of Psychology.

Data Analysis

Correlations were calculated. Moreover, distinct correlations were computed for adolescents having access to high schools and those having to enter vocational training. Significance of the difference between the two correlation coefficients was tested converting each coefficient into a z-score using Fisher's r-to-z transformation and then, making use of the sample size employed to obtain each coefficient, comparing these z-scores using formula 2.8.5 from Cohen and Cohen (1983, p. 54). In order to assess our hypotheses, we started by specifying a hybrid SEM model for the full sample. According to literature, a model is considered to have a satisfactory fit if the χ^2 per degrees of freedom (χ^2/df) is lower than 3, if the Tucker-Lewis index (TLI) and the comparative fit index (CFI) values are approximately .90 or above (Medsker, Williams, & Holahan, 1994), and if the root mean square error of approximation (RMSEA) is about .08 or less (Byrne, 2010). Specific indirect effects were calculated using the phantom model approach, which permits to estimate, test, and compare specific effects within structural equation models in representing the specific effect to be assessed as a total effect within a

separate latent variable model, i.e. the phantom model that is added to the main model (Macho & Ledermann, 2011). 95% confidence intervals were calculated using bootstrapping on 5,000 samples. Secondly, a multi-group model was tested to investigate whether the estimated effects were similar for the two adolescents subgroups. To do this, the measurement invariance, as well as the difference in model fit across the two groups were tested by inspecting changes in fit across models. As recommended by Cheung and Rensvold (2002) the assumption of invariance across models was considered tenable if $\Delta CFI < .01$ and $\Delta RMSEA < .05$.

Results

Preliminary Analysis

A series of two-way ANOVAs allowed us to analyze the impact of gender and of the groups on the different variables (means and standard deviations are reported in Table 1). A gender difference, with boys scoring higher than girls, $F(3, 444) = 4.57, p = .033, \eta^2 = .01$, was found concerning the inconsistency of information subscale of career indecision. As to personality traits, gender had a significant and non-negligible impact on neuroticism, $F(3, 444) = 52.39, p < .001, \eta^2 = .11$, extraversion, $F(3, 444) = 12.89, p < .001, \eta^2 = .03$, and conscientiousness, $F(3, 444) = 6.16, p = .013, \eta^2 = .01$. Girls scored higher than boys on these personality traits. A gender effect, $F(3, 444) = 8.69, p = .003, \eta^2 = .02$, and group effect, $F(3, 444) = 8.13, p = .005, \eta^2 = .02$ (but no interaction) were found for openness, and agreeableness (gender, $F(3, 444) = 19.35, p < .001, \eta^2 = .04$, in addition to group effect, $F(3, 444) = 13.43, p < .001, \eta^2 = .03$) where the girls and the group of those having access to high school achieved higher scores. As to perceived emotional support, we observed a gender effect, $F(3, 444) = 5.45, p = .020, \eta^2 = .01$, with girls scoring higher than boys. A gender effect, $F(3, 444) = 28.32, p < .001, \eta^2 = .06$, and a group effect, $F(3, 444) = 15.10, p < .001, \eta^2 = .03$ (but no interaction effect) were also found for career-specific support, with girls scoring higher than boys and those having

access to high schools scoring higher than those having to enter vocational training. Finally a gender, $F(3, 444) = 26.11, p < .001, \eta^2 = .06$, and group effect, $F(3, 444) = 15.97, p < .001, \eta^2 = .04$ (but no interaction) were observed for self-esteem, where boys and the group of adolescents having access to high schools achieved higher scores.

Main Analysis

Correlations. Correlations were computed (see Table 2) in order to describe associations between variables. Career indecision was significantly and positively correlated with neuroticism and negatively correlated with openness, conscientiousness, the perceived emotional and career-specific support from parents, and self-esteem. Neuroticism had a stronger association with the lack of readiness dimension of career indecision, whereas conscientiousness, emotional and career-specific support had stronger associations with the lack of information and inconsistency of information dimensions. Agreeableness had only a negative, weak, but significant association with difficulty related to inconsistency of information. Self-esteem associated similarly with the three dimensions of career indecision. Correlations between personality traits and emotional and career specific parental support showed from modest to moderate associations between both the latter and extraversion, agreeableness, openness, and conscientiousness. Emotional support was modestly and negatively related to neuroticism. Self-esteem was found to be negatively and strongly associated with neuroticism, and positively and moderately associated with extraversion, conscientiousness and both kinds of parental support.

When calculating distinct correlations for adolescents having access to high schools and those having to enter vocational training, the differences found were related to the associations of career indecision and openness ($Z = -.2.43, p = .008$), of lack of information and openness ($Z = -.1.86, p = .031$), and of inconsistency of information and openness ($Z = -.2.84, p = .002$), that were negative and significant only for adolescents having to enter in VET; and of lack of readiness and neuroticism ($Z = -$

1.99, $p = .023$), of lack of readiness and openness ($Z = -1.90$, $p = .029$), of openness and extraversion ($Z = -1.91$, $p = .028$), and of self-esteem and career specific support ($Z = -1.76$, $p = .039$), that were positive and stronger in those who chose a high school (the association between lack of readiness and openness was significant only in this group).

Role of personality traits, parental support and self-esteem. In order to accurately appreciate the relationships between independent variables and to test their effect on career indecision, a SEM analysis was performed on the global sample. Taking into account the significant correlations previously observed (Table 2) the model calculated included neuroticism and conscientiousness as direct predictors of career indecision, parental support as a mediator of the effect of all five personality traits on, respectively, self-esteem and career indecision, and self-esteem as a mediator of the effects, respectively, of neuroticism, extraversion, conscientiousness and parental support on career indecision (see Figure 1). Considering that our aim was to study the nature of the relationships between a set of constructs, we considered the use of parcels of items as manifest variables. For personality traits and self-esteem, we created three parcels for each latent construct, using the item-to-construct balancing technique (Little, Cunningham, Shahar, & Widaman, 2002). As suggested by Kishton and Widaman (1994), for parental support and career indecision we used the internal-consistency approach, which creates parcels that use the factors as the grouping criteria. Two parcels were then created for support, using the mean value of the family support scale and the mean value of the career-specific parental behavior scale. Finally, three parcels were created for career indecision using the three subscales of lack of engagement, lack of information and inconsistent information. The specified model provided a good fit for the data with a χ^2 per degrees of freedom of 2.32, a TLI of .916, a CFI of .931 and an RMSEA of .054. Neuroticism ($\beta = .27$, $p < .001$), had a significant and positive direct effect on career indecision, whereas conscientiousness ($\beta = -.19$, $p = .006$) and parental support ($\beta = -.31$, $p < .001$) had negative and direct effects on career indecision (see Figure 1). In a second step, the non-significant

relationships were removed and this second model also proved to fit the data well, with a χ^2/df of 2.29, a TLI of .917, a CFI of .931 and an RMSEA of .054. As shown in Table 3, the analyses of the indirect effects of the model in Figure 1 seemed to indicate that parental support mediated the effect of extraversion, agreeableness and conscientiousness.

Role of the educational choice. Finally, to test our hypothesis that our model of the relationships between personality, parental support, self-esteem, and career indecision could vary for adolescents having access to high schools and those having to make a vocational choice and start a vocational training, we conducted a multiple-group analysis. Initially, the weak factorial invariance (all factor loadings constrained to be equal between the two groups) was analyzed, testing for difference across the weak and the configural models. The results for the configural model ($\chi^2 = 764.12$, $\chi^2/df = 1.86$, TLI = .892, CFI = .912 and RMSEA = .044) were very similar to those observed for the weak invariance model ($\chi^2 = 779.94$, $\chi^2/df = 1.83$, TLI = .896, CFI = .912 and RMSEA = .043). These analyses thus confirmed a weak factor invariance ($\Delta CFI < .001$, $\Delta RMSEA = .001$, and $\Delta\chi^2=15.82$, $p=.394$). We then tested the model with pathways constrained to be equal across the two groups, to investigate if there were any differences ascribable to pathways between latent variables. The model constraining pathways to be equal was not significantly worse than the weak invariance model ($\chi^2 = 798.32$, $\chi^2/df = 1.81$, TLI = .898, CFI = .911, RMSEA = .043; $\Delta CFI = .001$, $\Delta RMSEA < .001$, and $\Delta\chi^2=18.38$, $p=.190$), indicating that the model is appropriate for both groups of students: those who access high school and those who go into vocational training.

Discussion

The aim of this study was to analyze the effects of personality traits, parental support, and self-esteem in predicting an adolescent's career indecision. The possible mediating effects of parental support and self-esteem between personality and career indecision was taken into consideration, as was the possible moderating effect of the educational choice. The results of this study showed that

neuroticism and conscientiousness were the personality traits having a direct effect on career indecision. Parental support was also a direct predictor of career indecision and emerged as a possible partial mediator of the relationship between conscientiousness and career indecision and as a full mediator of the relationship between, respectively, extraversion and agreeableness and career indecision. Finally, no differences emerged across adolescents having to enter VET, and for this reason having to make an early career-choice, and adolescents who did not have to necessarily make a vocational decision, since they could access more general schools (i.e. high schools), indicating that the different variables had a similar effect on career indecision.

As to the direct effects of neuroticism, conscientiousness, and parental support on career decision-making difficulties, the results corresponded to those already observed in previous studies, whereas some different and unexpected results emerged for extraversion, agreeableness, and self-esteem. The direct impacts of neuroticism and conscientiousness were similar to those observed in the meta-analysis by Martincin and Stead (2015) or in the study of Stauffer, Perdrix, Masdonati, Massoudi, and Rossier (2013). It is apparent that those who were neurotic (i. e. anxious, depressed, moody, hostile, impulsive, and vulnerable) and not especially conscientious (i.e. not particularly structured, systematic, organized, goal oriented, dutiful, and reliable) tend to have and express more career-decision making difficulties. Conscientious individuals are also known for achieving better at school (e.g. Laidra, Pullmann, & Allik, 2007) and for being more likely to think about their future career and to implement behaviors leading to informed and thought-out career decisions. The results of this study also broadly confirmed previous findings, emphasizing the importance of parental influence in their children's career decision-making process (Dietrich & Kracke, 2009; Howard et al., 2009; Whiston & Keller, 2004). Moreover, correlations with career indecision were insignificant both for extraversion, as already found by Lounsbury and colleagues (2005), and for agreeableness, as showed by Martincin and Stead (2015). However, in this study, it emerged that the effect of extraversion and agreeableness on

career indecision was fully mediated by parental support. In fact, extraverted adolescents are known to be talkative, assertive and gregarious, characteristics that possibly enhance the chance to seek and receive parents' support. Similarly, agreeable adolescents tend to be more compliant, altruistic and empathic, and we can imagine that they are more able to receive and benefit of the support of their parents. Support was also found to partially mediate the relationship between conscientiousness and career indecision, thus further enhancing the chance of conscientious individuals to overcome career indecision. These results confirmed the strong associations previously highlighted between, respectively, extraversion, agreeableness and conscientiousness, and perceived social support as well as the weak association between respectively neuroticism and openness, and perceived social support (Connor-Smith & Flachsbart, 2007). Our hypotheses concerning the mediation effect of support between, respectively, extraversion, agreeableness and conscientiousness, and career indecision was also partially confirmed. Moreover, results of this study attested to the weak predictive value of openness on career indecision even if differences in correlations pointed out that for future apprentices being open to experience associated with less career indecision (in particular to less lack of information and inconsistency of information), whereas conversely, for students having access to high school, higher openness to experience associated with higher lack of readiness to make a choice. Finally, results doesn't supported the mediational hypothesis involving self-esteem, that was found to be correlated with extraversion, conscientiousness, neuroticism and support, but was predicted only by neuroticism and support, and, more importantly, doesn't predicted career indecision. Finally, educational choice did not emerge as a moderator of the relationships displayed in the model.

These results may have implications for career guidance interventions. Firstly, for adolescents, it is important to observe that parental support is the most important predictor. Thus adolescents having less supportive parents, or who perceive their parents as being less supportive or who are less able to take advantage of this support, are probably those who most frequently need help and who are not

perhaps used to receiving help and support from their environment. For this same reason they may also be less prone to actively ask for help. This emphasizes how important it is to identify these youngsters early on and, for example, to involve them and maybe their parents in career guidance interventions. Adolescents can be encouraged to seek their parents' (or another person's) support and parents could be encouraged to provide more (effective) support. As to personality profiles, highly neurotic and low conscientious adolescents can be considered as slightly more at risk of encountering career-decision difficulties and could benefit from specifically designed career interventions, as already suggested by Stauffer et al. (2013). Additionally, the findings on mediation effects indicate that the extraverted and agreeable personality positively influence the perception of having parental support, which directly affect career indecision. Thus, less extraverted and agreeable adolescents need additional external help, as for them it seems more difficult to perceive parental support, probably due to their less suitable relational skills. Finally, results have also shown that the only difference between adolescents who have the prerequisites for high school and those who choose a specific vocation is based on the importance accorded to career indecision when that choice was made. Indeed, high levels of career indecision for future apprentices surely implies more concerns that they do in future high school students. As to career counseling practices, there should be no differences in how the issue of career indecision in adolescents is faced, nevertheless it would surely be beneficial to start work with future apprentices earlier, in order to allow them to make a career decision before the end of compulsory school.

Finally, this study is certainly not without limitations. The sample was drawn from the Italian-speaking Swiss region, which is an insufficiently studied region, characterized by language and territorial specificities. All the adolescents investigated attended the last year of compulsory school. In addition, the general applicability of our conclusions, particularly to other cultures, geographic locations, age groups and, especially, education systems, may be limited. In particular, the impact of the educational choice on the career decision process definitely requires further studies to be conducted

across educational systems. Our conclusions on the mediational hypotheses should also be considered with caution, due to the cross-sectional nature of the present study. Hence, in order to establish mediation, future studies should be conducted using longitudinal designs.

Conclusions

This study confirms the importance of personal disposition as well as contextual resources to overcome developmental career decision-making difficulties. Some specific personality profiles can be considered as risk factors and interventions should focus on the mediator identified (i.e. social support). Counselors can in turn contribute to the social support provided. Finally, the educational perspective and the constraints in terms of early career choice, did not have an impact on these career decision-making difficulties.

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Table 1

Means and standard deviations for the total sample, girls, boys, adolescents having access to high schools, and adolescents having to choose an apprenticeship.

	Total		Girls		Boys		High school		Apprenticeship	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1 Career indecision	2.89	1.12	2.80	1.06	2.96	1.17	2.91	1.08	2.86	1.17
2 Lack of readiness	3.59	1.11	3.58	1.08	3.59	1.14	3.61	1.06	3.57	1.15
3 Lack of information	2.65	1.42	2.55	1.35	2.74	1.47	2.74	1.42	2.57	1.41
4 Inconsistence of information	2.50	1.34	2.36	1.30	2.63	1.37	2.44	1.20	2.55	1.46
5 Neuroticism	25.52	7.25	27.96	7.21	23.25	6.54	25.03	7.29	25.98	7.20
6 Extraversion	29.66	5.61	30.62	5.97	28.76	5.12	29.88	6.10	29.45	5.12
7 Openness	27.53	5.92	28.39	5.97	26.74	5.78	28.36	6.29	26.76	5.45
8 Agreeableness	28.45	6.18	29.74	6.26	27.25	5.87	29.52	6.10	27.45	6.10
9 Conscientiousness	28.80	6.82	29.61	6.72	28.05	6.84	29.31	6.79	28.33	6.82
10 Emotional support	5.45	1.23	5.59	1.25	5.32	1.21	5.55	1.22	5.36	1.24
11 Career support	48.49	7.33	50.33	6.53	46.79	7.63	49.83	7.27	47.23	7.18
12 Self-esteem	29.54	5.31	28.25	5.75	30.73	4.57	30.54	5.34	28.60	5.13

Note. *M* = mean, *SD* = standard deviation.

Table 2

Correlations between career indecision, personality traits, emotional and career-specific parental support, self-esteem and gender

	1	2	3	4	5	6	7	8	9	10	11	12
1 Career indecision	-											
2 Lack of readiness	.74 ^{***}	-										
3 Lack of information	.93 ^{***}	.54 ^{***}	-									
4 Inconsistence of information	.87 ^{***}	.47 ^{***}	.75 ^{***}	-								
5 Neuroticism	.27 ^{***}	.33 ^{***}	.21 ^{***}	.19 ^{***}	-							
6 Extraversion	-.07	-.02	-.08	-.07	-.11	-						
7 Openness	-.04	.05	-.07	-.07	.07	.26 ^{***}	-					
8 Agreeableness	-.09	-.05	-.05	-.13 ^{**}	-.03	.11 [*]	.21 ^{***}	-				
9 Conscientiousness	-.31 ^{***}	-.19 ^{***}	-.29 ^{***}	-.30 ^{***}	-.22 ^{***}	.29 ^{***}	.23 ^{***}	.29 ^{***}	-			
10 Emotional support	-.20 ^{***}	-.08	-.22 ^{***}	-.18 ^{***}	-.13 ^{**}	.29 ^{***}	.13 ^{**}	.26 ^{***}	.36 ^{***}	-		
11 Career support	-.31 ^{***}	-.17 ^{***}	-.30 ^{***}	-.32 ^{***}	-.05	.28 ^{***}	.22 ^{***}	.31 ^{***}	.31 ^{***}	.51 ^{***}	-	
12 Self-esteem	-.23 ^{***}	-.21 ^{***}	-.21 ^{***}	-.19 ^{***}	-.57 ^{***}	.24 ^{***}	.09	.00	.35 ^{***}	.32 ^{***}	.23 ^{***}	-
13 Gender	-.07	-.00	-.07	-.10 [*]	.31 ^{***}	.18 ^{***}	.17 ^{***}	.22 ^{***}	.13 ^{**}	.12 [*]	.24 ^{***}	-.21 ^{***}

Note. Gender: 0 = boys, 1 = girls. Gender is a dichotomous variable and for this reason point-biserial correlations were computed between gender and the other variables.

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

Table 3

Estimated effects and 95% bootstrapped confidence intervals for simple indirect effects of personality traits on career indecision

Effect being tested	Value ^a	95% bias-corrected CI	
		<i>LL</i>	<i>UL</i>
Indirect effect of E on CIn through SUP	-0.064	-0.130	-0.027
Indirect effect of A on CIn through SUP	-0.044	-0.096	-0.012
Indirect effect of C on CIn through SUP	-0.051	-0.116	-0.019

Note. CIn = Career indecision; N = Neuroticism; E = Extraversion; A = Agreeableness; C = Conscientiousness; SUP = Support; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

^a Unstandardized estimate of the effect obtained with the Maximum Likelihood procedure.

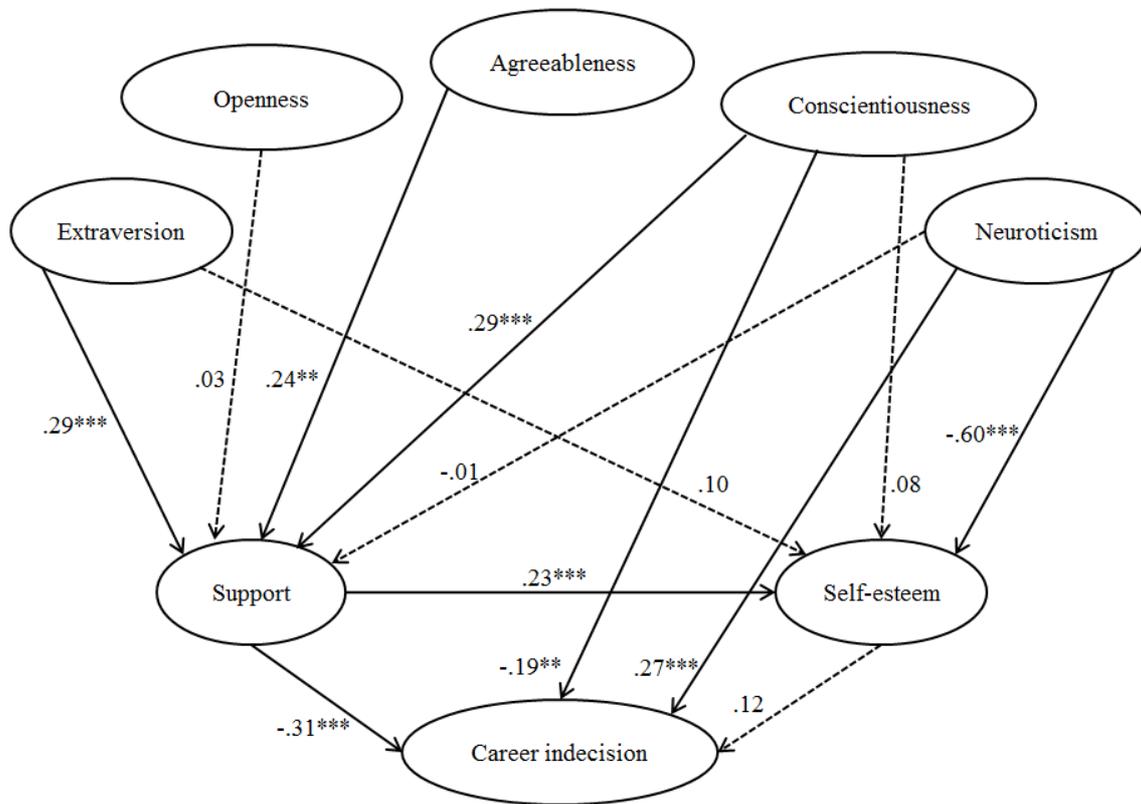


Figure 1. Structural equation model with standardized coefficients estimates. Paths illustrated with a dotted line represent non-significant relationships.

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