



The Effect of Personality Traits on the Educational Expectations of High School Students

Wenjun Zou

School of Public Administration, China University of Geosciences, Wuhan, Hubei Province, 430074, China

z3147082742001@163.com

Abstract. Adolescents' educational expectations are a key factor in their eventual academic achievement and career success. And in the process of receiving education, the individual's non-cognitive abilities affect the student's academic and educational expectations. This study used the micro-survey data of CFPS 2018 and selected high school students over 16 years of age, with an effective sample of 2,545 students, to analyse the differences between different groups on various factors of non-cognitive ability and the influence of personality traits on the educational expectations of high school students. The results of the study show that the openness of high school students has a significant positive effect on their educational expectations. This provide-d a direction for research on how to improve the educational aspirations of high school students: i.e., how t-o improve the personality trait of openness to improve the educational aspirations of high school students.

Keywords: Educational expectations; personality trait; High school students; openness.

1 Introduction

Adolescents' educational aspirations have a significant impact on their future academic achievement, career achievement, and social status. Steve (2008) argued that individuals' educational aspirations have a significant impact on their future academic performance and achievement¹. Domina (2011), in a study based on high school students in the U.S., found that educational aspirations play a significant role in driving academic performance and achievement and the level of academic endeavour that students make during their time in school². Exploring the factors influencing adolescents' educational aspirations can help individuals establish good educational planning and academic achievement goals, which is of practical significance. And in the process of receiving education, the individual's non-cognitive abilities have the roles of orientation, guidance, maintenance, and motivation, which will affect the students' academic education expectations.

This study examines the influence of personality traits, a non-cognitive ability factor, on educational expectations, and seeks a new research direction on how to improve the

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educational expectations of high school students, laying the foundation for further research.

2 Influence of Family Background on Educational Expectations

It has been shown that the economic, social and cultural background of the family affects individual educational expectations. Firstly, family socio-economic status has an effect on individual educational expectations. As Marini and Greenberger (1978) explain, when family socio-economic status is low, adolescents will lack self-confidence, which will lead to the formation of lower self-education expectations; conversely, adolescents, as a result of enjoying more resources, have greater cognitive and non-cognitive abilities, which in turn demand higher levels of education³. For example, parents' savings are positively correlated with children's educational expectations (Ansong D, Wu S, & Chowa G.A, 2015)⁴.

Secondly, the interaction between parents and adolescents also has an impact on adolescents' educational expectations. For example, Bairen Ding and Yijie Wang (2016) find that both parental involvement and parental expectations of children's education would have a significant effect⁵; Xuehui An (2005) argues that parent-child interaction would have a positive effect on children's self-education expectations⁶; and parental encouragement and their participation behaviours in their children's schooling also significantly affect education expectations (Sewell W H, & Shah V P, 1968a; Wang M T, & Sheikh-Khalil S, 2014)⁷.

3 Influence of School Environment and Peer Group on Educational Expectations

Schools are important places where young people are educated and play an important role in the formation and development of young people's educational expectations. Schools, teachers, and peer groups all influence students' educational expectations. Firstly, school class and educational and pedagogical management system have a significant effect on students' educational expectations, i.e. the higher the average class status of the school, the higher the students' educational expectations will be (Chao Huang, & Guixiao Wu, 2016)⁸.

Secondly, the psychological supportive atmosphere shaped by the teacher and the academic atmosphere shaped by the whole class also play an important role in influencing students' educational expectations (Yangyang Zhang, & Guihua Xie, 2017)⁹. For example, teacher encouragement has a positive effect on students' self-expectation, and the extent of the positive effect varies among different teachers, with the class teacher having the greatest positive effect (Yuwei Nie, 2017)¹⁰; the social compliance effect causes adolescents' educational expectations to increase with the class average educational expectations (Rui Cao, & Guixiao Wu, 2019)¹¹.

4 Influence of Non-Cognitive Abilities on Educational Expectations

In the process of receiving education, the individual's non-cognitive ability plays the roles of orientation, guidance, maintenance and motivation in education, which in turn affects the educational expectations of students. Most scholars use the Big Five model (Hong Cheng, & Tang Li, 2017)¹², self-esteem, and locus of control (Zhonghua Liu, 2018)¹³ as dimensions for measuring non-cognitive abilities.

Hartas (2016) found that non-cognitive factors such as self-efficacy, emotional stability, and extraversion were good predictors of young people's educational aspirations¹⁴. Zhang YuPing (2014) concluded that non-cognitive competencies such as self-worth, attitudes toward learning, and emotional stability developed as a result of schooling had a significant effect on educational aspirations¹⁵. Carneiro P, Crawford C, & Goodman A (2007) found that the level of acculturation and students' self-esteem have a direct impact on their educational achievement and expectations¹⁶.

5 Empirical Evidence

Most of the existing studies focus on the influence of family background on educational expectations, and a few scholars focus on the influence of school and classroom environments, peer groups, and significant others. In addition, studies on adolescents' educational expectations have mainly explored the influence of external conditions on individual educational expectations, neglecting the dynamic role of individual factors such as personality traits. How to promote the improvement of adolescents' educational expectations based on the influence of personality traits on individual educational expectations is the focus of the research.

6 Methods

6.1 Data and Sample

This study used data from the 2018 CFPS individual questionnaire and was conducted with high school students aged 16 years and older. After screening the variables according to the age of the high school students and removing the missing variables, a sample of 798 was identified.

6.2 Measures

6.2.1 Dependent Variable.

The dependent variable in this study was the educational expectations of high school students. Respondents in the CFPS questionnaire were asked, "What is the minimum level of education you think you should obtain?" There were nine options ranging from primary school level to PhD and no schooling required. In this study, the nine options

were re-assigned based on the number of years of education (no need to go to school = 0, primary schools = 6, junior high school = 9, senior high school = 12, 3-year college = 15, bachelor's degree = 16, master's degree = 20, and doctoral degree = 22).

6.2.2 Independent Variables.

In this study, the personality traits profile from the Individual Self-report of CFPS (2018) was selected to measure personality traits from five dimensions: c conscientiousness, extraversion, Agreeableness, openness, and neuroticism.

Each dimension consisted of two to three question items, and the score of each question ranged from 1 to 5 (strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5). In this study, the mean values of the question items included in each dimension were taken separately to obtain the measures of each dimension.

6.2.3 Control Variables.

Prior research has shown that household, parent, and child characteristics were closely associated with future expectations. Therefore, this study mainly sets control variables at the individual and family levels of high school students. Individual-level variables for senior high school students includes gender, age, household registration type, and intelligence level. Gender and household registration types are dichotomous variables (female=1, male=0; Agricultural=1, Non-agricultural=0). Age (≥ 16) and intelligence level (ranges from 1 to 7) are continuous variables.

The household level variable is total parental expenditure on education, a continuous variable. In the CFPS questionnaire, respondents were asked "In the past year, how much did your family paid in total for your education, including all kinds of payment to school and extracurricular education expense?" This variable is brought into the logarithmic function ($y = \ln x$) as a dependent variable to be calculated to obtain the log of total expenditure on education.

6.3 Analytical Strategy

6.3.1 Compare Means.

Considering the influence of gender, type of household registration and other factors on the personality traits of senior high school students, the whole sample was grouped by gender, household registration, and the highest education they wished to achieve (Groups with less than college education, junior college group, undergraduate group, graduate group, doctoral group).

The gender and type of household registration were both dichotomous variables, so independent samples T-test was used to analyse the differences in personality traits between the different gender and registered residence groups; while the different educational expectation groups were quintuple categorical variables, so One Way ANOVA was used to analyse the differences in personality traits between the different groups.

6.3.2 Multiple Regression Analysis.

The OLS regression model is used to examine the effect of the dimensions of personality traits of the sample on the individual's educational expectations. See Eq. (1) for the OLS regression model.

$$Exp = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots\dots + \beta_kX_k + \mu \tag{1}$$

Exp denotes the number of years of education an individual expects to receive. X1, X2, X3, X4, X5 denote the core explanatory variables of the five non-cognitive abilities of dutifulness, extroversion, affinity, openness, and emotional instability, respectively. X6, X7, …, Xk denote the relevant control variables. β0 denotes the constant term. β1, β2, β3, …, β k denote the regression coefficients of the k independent variables, respectively.

In this study, demographic variables, family environment variables, and individual non-personality traits were used as variables in the model to explore the effects of individual personality traits on the formation of educational expectations.

7 Results

7.1 Characteristics of educational expectations of high school students

7.1.1 Differences in educational expectations among high school students.

7.1.1.1 Gender difference

As shown in Table 1, there is a significant gender difference in educational aspirations of senior high school students (p<0.01). The educational aspirations of female senior high school students (M=15.83) are significantly higher than those of male senior high school students (M=15.41).

Table 1. Differences in Educational Expectations of High School Students by Gender

Variable	gender	N	Mean	Std.	t
Educational expectations	male	401	15.41	2.202	2.984**
	female	397	15.83	1.802	

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

7.1.1.2 Differences in household registration

As shown in Table 2, there is a significant difference in educational aspirations of senior high school students in registered residence (p<0.01). The educational expectations of senior high school students of non-agricultural domicile (M=16.24) are significantly higher than those of senior secondary school students of agricultural domicile (M=15.44).

Table 2. Differences in Educational Expectations of High School Students by Gender

Variable	Household registration	N	Mean	Std.	t
Educational expectations	Non-agricultural household registration	177	16.24	1.983	4.679**
	Agricultural household registration	621	15.44	2	

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

7.2 Differences in Personality Traits Among High School Students

7.2.1 Differences in Personality Traits by Gender.

According to Table 3, there are significant gender differences in conscientiousness (p<0.05) and neuroticism (p<0.01) among high school students. Neuroticism of female high school students (M=3.4421) was significantly higher than that of male high school students (M=3.1933), while conscientiousness of male high school students (M=3.6322) was significantly higher than that of female high school students (M=3.5088).

Table 3. Differences in the dimensions of personality traits by gender

Variable	Gender	N	Mean	Std.	t
conscientiousness	male	401	3.6322	0.69191	2.469*
	female	397	3.5088	0.719	
extraversion	male	401	3.6633	0.82772	-0.092
	female	397	3.6688	0.83135	
agreeableness	male	401	3.8005	0.6634	-0.406
	female	397	3.8186	0.5987	
openness	male	401	3.4763	0.72844	0.055
	female	397	3.4736	0.69323	
neuroticism	male	401	3.1933	0.91961	-4.001**
	female	397	3.4421	0.83434	

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

7.2.2 Differences in Personality Traits of Different Household Registration.

According to Table 4, there is significant household registration difference in openness among high school students (p<0.01).The openness of non-agricultural high school students (M=3.646) is significantly higher than the openness of agricultural high school students (M=3.4262).

Table 4. Differences in the dimensions of personality traits by household registration

Variable	Household registration	N	Mean	Std.	t
conscientiousness	Non-agricultural household registration	177	3.4944	0.74998	-1.631
	Agricultural household registration	623	3.5926	0.69436	
extraversion	Non-agricultural household registration	177	3.7599	0.8429	1.709
	Agricultural household registration	623	3.6393	0.82374	
agreeableness	Non-agricultural household registration	177	3.7768	0.70483	-0.72
	Agricultural household registration	623	3.8188	0.60956	
openness	Non-agricultural household registration	177	3.646	0.68457	3.657**
	Agricultural household registration	623	3.4262	0.711	
neuroticism	Non-agricultural household registration	177	3.3418	0.92647	0.421
	Agricultural household registration	623	3.31	0.87536	

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

7.2.3 Differences in Personality Traits in Different Educational Expectation Groups.

As shown in Table 5, there are significant differences in the personality trait factor of openness among high school students with different educational expectations(p<0.05).

Table 5. Differences in personality traits in groups with different educational expectations

	Educational Expectation(mean±SD)						F	p
	Below college(n=111)	three-year lege(n=122)	three-year col-gree(n=484)	bachelor's de-gree(n=67)	master's de-gree(n=14)	doctoral de-gree(n=14)		
conscientiousness	3.5676±0.74616	3.6066±0.73358	3.5548±0.69425	3.5672±0.73801	3.8571±0.45694	0.713	0.583	
extraversion	3.6667±0.82389	3.8074±0.78847	3.6405±0.83956	3.5821±0.82387	3.7143±0.8484	1.186	0.315	
agreeableness	3.7477±0.73508	3.8525±0.64182	3.813±0.59384	3.7612±0.71963	4.0357±0.45844	0.957	0.431	
openness	3.4204±0.76371	3.4699±0.70646	3.447±0.70503	3.6816±0.66776	3.9286±0.3961	3.23*	0.012	
neuroticism	3.2658±0.88887	3.4303±0.87035	3.2903±0.87815	3.3881±0.94477	3.3214±1.03044	0.808	0.528	

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

7.3 Correlation Analysis of Personality Traits and Educational Expectations

According to Table 6, openness has a significant positive correlation with educational expectations, r=0.096,p<0,01, suggesting that the greater the openness of an individual, the higher the trend of his or her educational expectations would be.

Table 6. Person correlation coefficients Matrix between personality traits and educational expectations

	Educational Expectation	conscientiousness	extraversion	agreeableness	openness	neuroticism
Educational Expectation	1					
conscientiousness	0.015	1				
extraversion	-0.021	0.164**	1			
agreeableness	0.026	0.337**	0.206**	1		
openness	0.096**	0.271**	0.301**	0.283**	1	
neuroticism	0.012	0.023	-0.029	0.117**	0.044	1

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

7.4 Influence of Personality Traits

As shown in Table 7, openness significantly affects the educational expectations of high school students, $\beta=0.205$, $p<0.01$, i.e., for every one standard deviation increase in the openness score of high school students, the self-educational expectations will increase by 20.5%.

Table 7. Regression analyses of the effect of personality traits on educational expectations of high school students

	(1)	(2)	(3)	(4)	(5)	(6)
female	0.401* (0.138)	0.409* (0.138)	0.401* (0.138)	0.4* (0.138)	0.403* (0.138)	0.401* (0.139)
age	0.207** (0.055)	0.203** (0.055)	0.205** (0.055)	0.207** (0.055)	0.209** (0.055)	0.207** (0.055)
Agricultural registration	-0.803** (0.167)	-0.807** (0.168)	-0.809** (0.168)	-0.806** (0.168)	-0.759** (0.168)	-0.803** (0.168)
intelligence level	0.154 (0.062)	0.155 (0.062)	0.156 (0.062)	0.153 (0.062)	0.153 (0.062)	0.154 (0.063)
expenditure on education	0.274** (0.069)	0.275** (0.069)	0.274** (0.069)	0.274** (0.069)	0.269** (0.069)	0.274** (0.069)
conscientiousness		0.063 (0.099)				
extraversion			-0.062 (0.083)			
agreeableness				0.078 (0.109)		
openness					0.205* (0.098)	
neuroticism						-0.001 (0.079)
Constant	9.142** (1.159)	8.981** (1.187)	9.408** (1.214)	8.87** (1.221)	8.424** (1.206)	9.114** (1.193)
Adjusted R2	0.077	0.076	0.076	0.076	0.081	0.076

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

In conclusion, high school students' conscientiousness, extraversion, agreeableness, neuroticism do not have significant effect on their educational aspirations, while high school students' openness personality trait has significant positive effect on their educational aspirations.

8 Discussion

In this study we explored the general characteristics and individualised differences in the educational expectations of high school students, as well as the influence of the dimensions of personality traits on educational expectations.

In terms of gender differences, female high school students have higher educational aspirations than males, regardless of the influence of other factors. A possible explanation for this might be that with the change of gender concepts in society, women's desire to realize their self-worth and pursue their socio-economic status has been increasing, and that in terms of employment, women are still at a gender disadvantage compared to men, and they need to receive higher levels of education in order to enhance their competitiveness. These reasons have led women to aspire to higher levels of education.

In terms of differences in household registration, non-agricultural high school students expect to receive a higher level of education than agricultural high school students, regardless of the influence of other factors. The reason may be that people will tend to have higher educational expectations when the basic demands of educational expectations are met or when the returns to education increase significantly (Bairen Ding, & Yijie Wang, 2016)⁵. High school students with non-agricultural household registration have more resources to pursue and obtain higher education and higher returns to education, while high school students with agricultural household registration may be affected by economic and living environment, such as family class disadvantage and limited educational resources, which results in limited pragmatic rationality, making them more realistic and relatively short-sighted in their educational expectations.

It was found that openness among the factors of personality traits has a significant positive effect on educational aspirations of high school students. When adolescents enter high school, they have a certain understanding of their learning and development. even if their grades are not ideal, they will still have certain requirements for their education. And when individuals have strong openness, they are more likely to improve, revise and update their views (Chen Haobin & Liu Jie, 2018)¹⁶. Therefore, the more open personality traits high school students have, the more they are able to accept positive information around themselves and better understand the importance of having a higher level of education. They will have more precise goals and higher expectations of themselves as a result of a better understanding of society, which in turn will lead to higher educational expectations.

According to the conclusion that the openness of non-agricultural high school students is significantly higher than that of agricultural high school students, high school students from non-agricultural households with higher economic levels have access to more information resources, and their parents are more willing to cultivate their non-cognitive abilities with positive parenting styles, so these high school students are more

open to absorbing viewpoints and opinions, and they will have higher demands on themselves, which will result in a stronger need to improve their qualifications. However, high school students from agricultural households with lower family economic level are restricted by their conditions and have less access to effective information, which leads to their limited openness and more likely to be satisfied with educational expectations that meet the basic requirements of life, and lack the pursuit of higher fields.

The concern about the findings was that the limited number of control variables identified tends to lead to endogeneity problems and does not allow for a more accurate analysis of the impact of personality trait dimensions on educational aspirations.

This study investigates the influence mechanism of high school students' educational expectations from a micro perspective, and clarifies the role of personality traits in the development of high school students' educational expectations, which is conducive to enabling future research to study how to improve high school students' educational expectations from the perspective of openness as a personality trait.

9 Conclusion

This study found that openness in the personality trait of high school students has a significant positive effect on their educational expectations: i.e., the more high school students satisfy the personality trait of openness, the more they expect to receive a higher level of education. Future research could analyse the gender and household differences in the influence of the personality trait of openness on the educational aspirations of individual high school students, or the differences in the influence of the trait on high school students attending different types of schools, and examine how to improve the personality trait of openness for different high school students in order to increase their educational aspirations.

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