Personality and career decision-making self-efficacy of students from poor rural areas in China

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We examined the correlations between personality and career decision-making self-efficacy (CDMSE) of university students from poor rural areas in China from an educational equity perspective. The results showed that female (vs. male) students were more neurotic, senior (vs. younger) students were more agreeable, and social science students were more neurotic than those in other disciplines. The results also revealed that differences in the total CDMSE were nonsignificant, but there was a gender difference in accurate self-appraisal and a difference by year of study in gathering information. There was a positive correlation between conscientiousness, agreeableness, openness, and extraversion, and CDMSE, and a negative correlation between neuroticism and CDMSE. The 5 personality traits, except for agreeableness, played a crucial role in predicting CDMSE. The results suggest that officials and staff of governments, universities, and industries should work together to develop proactive personality traits of students from poor rural areas in China, facilitate their CDMSE, and help them achieve their employment aspirations, thereby promoting educational equity.

Educational equity is commonly associated with the aspirations of specific groups (Blanchard, 1986), resource distribution, and available opportunities (Larkin & Staton, 2001) at various educational system levels. Educational equity discussion has been taking place among policymakers, educators, and researchers around the world (Burbules, Lord, & Sherman, 1982; Espinoza, 2007; Jones-Wilson, 1986). These groups have committed to developing strategies for mitigating or eliminating inequity and inequality by allocating resources according to individual needs or contribution (Adams, 1965; Carnoy, 1975). Samoff (1996) noted that where there has historically been discrimination (e.g., based on gender, ethnicity, race, or place of residence), special support should be provided for those who have been disadvantaged, even if the strategies are temporary, to address inequality.

In line with this thinking, a reverse discrimination policy, termed the *Special Recruitment Plan in Poor Rural Areas*, was implemented in 2012 by the Chinese government to provide opportunities for young men and women living in poor rural areas, who have lower university entrance examination scores than their urban peers, to enroll in key universities often located in developed coastal cities. The intention of this policy is to promote educational equity and balanced regional development, and to prevent intergenerational transmission of poverty (K. Li, 2019). Initially, as the priority was on inputs and outputs, these graduates were assigned jobs in their hometown (W. Chen & Song, 2015). However, since 2014, the

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striking benefits of the policy have been decreasing. Although the program has begun to allow previously unpermitted residential transfers (*hukou*) from rural areas to cities where universities are located, and changes in majors based on students' preferences, government officials no longer allocate jobs. Instead, under an array of flexible nonmandatory policies, students make their own decision about returning to their poverty-stricken hometown for employment and entrepreneurship or finding a job in the host city (People's Republic of China, Ministry of Education, 2014). If students choose to return to their hometown for work, they are supported with tuition compensation and national student loan compensation. However, if they choose to look for a job in the host city, they must pay for everything themselves and face severe competition with students who earned higher college entrance scores, have more family support, and more importantly, have a better university performance record.

Despite these disadvantages, when they have witnessed the prosperity of a large city, most students who have attended university under the recruitment plan, are unwilling to return to their hometown and would rather settle in the metropolis with the expectation of transforming their rural identity, improving their quality of life, and even changing their family's future. Drawing on a Peking University survey about graduates' employment destination in 2017, with 5,470 samples from diverse degree courses, universities, and families, Ma and Lin (2018) found that only 6% of rural graduates preferred to work in their hometown. Unfortunately, the current situation for those seeking *employment* in China is that, on the one hand, most graduates have encountered difficulty finding satisfying jobs, and, on the other, employers have suffered from a lack of talent among job applicants (Dian, 2014, F. Li, Morgan, & Ding, 2008). The reason for this mismatch in supply and demand (Cai, 2013; de Grip, van Loo, & Sanders, 2004; Houston, 2005; McQuaid & Lindsay, 2005) can be attributed to two crucial aspects: First, the substantial gap between graduates' employability and employers' expectations has remained unbridgeable. Graduates' knowledge and skills learned at university have failed to keep up with technological renewal. Despite possessing a variety of certificates, such as the National Computer Rank Examination Certificate Level 2 and the College English Test Band 4 or 6, graduates are often viewed as lacking necessary operational competencies, especially *soft skills*, such as problem-solving, teamwork, and communication, because employers highly value graduates' competencies rather than their certificates (Crossman & Clarke, 2010; McQuaid & Lindsay, 2002).

It is our opinion that a more serious matter is that, although in some respects students from poor rural (vs. developed) areas have some advantages, including eagerness to change their lives, industriousness, and friendliness, they are distinct from, or weaker than, students from developed areas in terms of mental and psychological health. For example, students from poor (vs. affluent) families have been found to be more likely to experience depression or anxiety (Bayram & Bilgel, 2008; Eisenberg, Gollust, Golberstein, & Hefner, 2007) and self-abasement (Peng, 2015). Undoubtedly, because of the absence of family support and institutional guarantees—government benefits, such as job assignment and tuition compensation—students from poor rural areas who are characterized by depression, anxiety, and self-abasement would have extreme difficulty in achieving their career aspirations (Y. Dai, 2011). In the current competitive labor market in China, their inferiorities would be amplified, and inequities would appear and even become common. Hence, to ensure educational equity in outcomes and outputs (Blanchard, 1986; Salomone, 1983), policymakers, educators, and researchers should pay more attention to the development of students' personality traits, to the enhancement of their employability, and to helping them find jobs consistent with their interests, hobbies, and abilities in their preferred developed cities. Our focus in this study was thus on the relationship between individual personality traits and career decision-making self-efficacy of university students from *poor rural areas in China*.

Relationship Between Personality Traits and Career Decision-Making Self-Efficacy

The concept of *career decision-making self-efficacy* (CDMSE) derives from Bandura's (1977) self-efficacy theory, and refers to an individual's belief in his or her ability to successfully achieve the task of engagement in making career decisions (Hackett & Betz, 1981; Taylor & Betz, 1983). To evaluate CDMSE, Betz and Taylor (1994) and Taylor and Betz (1983) developed the CDMSE scale, which consists of five key career

choice factors, namely, accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. Some researchers have noted that low CDMSE leads to individuals' avoidance of career selection and career-oriented behavior (Taylor & Betz, 1983), and high CDMSE accelerates the possibilities of realizing career goals (Baglama & Uzunboylu, 2017; Gushue, Scanlan, Pantzer, & Clarke, 2006; Jin, Watkins, & Yuen, 2009). CDMSE can benefit students by revealing distinct career pathways, and in students' career goal setting and career-related decision making (Lent & Brown, 2013).

CDMSE is affected by individual attributes that stem from genetic disposition (Lent & Brown, 2013; Lent, Brown, & Hackett, 1994). The personality traits of conscientiousness, openness, agreeableness, and extraversion have a positive impact on CDMSE (Hsieh & Huang, 2014; Nauta, 2004; Rottinghaus, Lindley, Green, & Borgen, 2002) and can enhance self-efficacy by helping individuals make a valid plan and set a proper goal (Bullock-Yowell, Andrews, & Buzzetta, 2011; Jin et al., 2009). Hartman and Betz (2007) reported significant links between personality traits and CDMSE in American students, including positive effects for conscientiousness and extraversion and negative effects for neuroticism. N. Wang, Jome, Haase, and Bruch (2006) found that students from different racial groups, such as Whites, Asians, African Americans, Latinos, Hispanics, and other composite groups of students of color, may navigate different career pathways. Specifically, CDMSE entirely mediated the relationship between extraversion and career commitment among White college students, and neuroticism and extraversion affected career commitment both directly and indirectly through CDMSE for ethnic minority students.

Several Chinese researchers have also shown a significant interaction between personality traits and CDMSE. Consistent with Hartman and Betz's finding (2007), Jin, Ye, and Watkins (2012) found that students with lower neuroticism and higher conscientiousness and extraversion than other students were more confident in completing a career decision task. R. Chen, Feng, and Zuo (2006) reported that the *Big Five personality traits* were significantly related to CDMSE, except that agreeableness was not related to vocational information search, in line with Xing and Ma's (2009) finding of a small positive correlation between agreeableness and CDMSE. In contrast, L. Liu and Fan (2013) reported that the Big Five personality traits, excluding neuroticism, played a significant role in predicting CDMSE and career maturity, and Zhan, Fu, and Tao (2018) revealed that university students' family motivation could negatively predict their CDMSE, and that personality traits played an intermediary role in the relationship. Hou, Wu, and Liu (2014) concluded that CDMSE mediated the relationship between university graduates' proactive personality and their career adaptability.

Some researchers have investigated the relationship between CDMSE and individuals' demographic variables, such as age, gender, and family socioeconomic status. For example, Creed and Patton (2003) found that gender and age had significant correlations with school-based adolescents' CDMSE, whereas Hampton (2006) asserted that these demographic variables had no significant relationship with Chinese high school students' CDMSE. Hsieh and Huang (2014) reported that university students from low (vs. high) socioeconomic status families were more likely to feel constraints when making career decisions, and Peterson (1993) reported that the family financial situation was not correlated with underprepared college students' CDMSE.

Although empirical evidence for the relationship between personality traits and CDMSE has been provided in previous studies, because the findings are contradictory, less is known about which personality traits have a positive or negative effect on CDMSE. For example, R. Chen et al. (2006) confirmed that three of the Big Five personality traits, namely, openness, extraversion, and conscientiousness, had a strong power to predict CDMSE. In contrast, L. Liu and Fan (2013) reported that four of the Big Five personality traits, including agreeableness, could significantly predict CDMSE (R^2 = .314). In addition, according to Xing and Ma (2009), all the Big Five personality traits can predict CDMSE (R^2 = .386). Also, despite being the most widely accepted instrument in the measurement of personality traits, the Revised NEO Personality

Inventory (Costa & McCrae, 1992) has often not been applied to measure the Big Five personality traits in relation to self-efficacy. For example, Nauta (2004) and Rottinghaus et al. (2002) used adjective checklists. It is even more important that, despite the investigation of differences by country (United States and Germany; Rammstedt & John, 2007), gender (Hackett & Betz, 1981), and age (Lounsbury, Hutchens, & Loveland, 2005), few researchers have investigated how the Big Five personality traits interact with CDMSE across diverse samples, especially for disadvantaged groups, including students from undeveloped rural areas and/or poor families (Jin et al., 2009). This makes generalizations difficult and indicates that the topic merits further research.

To bridge this gap, our focus was specifically on a vulnerable cohort of students who had several siblings, and who came from poor rural areas in China. We examined the relationships between the students' personality traits and CDMSE from the perspective of educational equity, using the Chinese Big Five Personality Inventory brief version (CBF-PI-brief version; M. Wang, Dai, & Yao, 2011), and the Chinese version of the Career Decision-Making Self-Efficacy Scale-Short Form (CDSES-SF; Long, 2003). We aimed to prepare the students for appropriate career aspirations and pathways for their preferred workplace. Our results can make not only an essential contribution to the personality traits and CDMSE literature, but can also provide instrumental suggestions for policymakers, university staff, educators, and researchers about how to develop proactive personality traits of university students from poor rural areas to enhance their employability, and eventually to promote educational equity for them.

Method

Participants

We recruited 202 participants (168 [80.24%] women and 34 [19.76%] men), who were studying at the College of Vocational and Technical Education of South China Normal University, which is an institution appointed to recruit students from the eastern, western, and northern underdeveloped areas in Guangdong under the *Special Recruitment Plan in Poor Rural Areas* legislation. All participants were normal students, that is, students majoring in disciplines related to curricula in primary, secondary, or higher vocational education, with clear and specific employment goals to engage in teaching in schools and educational institutes. Under the Chinese university recruitment policy, normal students have a privilege of selection in the first round of university enrollment. All participants were enrolled in a course covering career planning and counseling taught by one of the authors. Participants' ages ranged from 19 to 22 years (M = 20.73, SD = 1.16). Their majors were vocational education (19.8%), electronic commerce (39.6%), and internet engineering (40.6%), and they comprised freshmen (19.85%), sophomores (25.74%), juniors (16.34%), and seniors (38.07%). Participants were all from poor, remote mountainous areas in eastern, western, and northern Guangdong. Of the participants, 85% were the oldest child, 7% were the middle child, and 8% were the youngest in a family of at least three siblings.

Measures

Chinese Big Five Personality Inventory-Brief Version. The Chinese Big Five Personality Inventory-brief version (CBF-PI-B; M. Wang et al., 2011) is composed of 40 items, which participants rated on a 6-point Likert-style scale from 1 = *absolutely false* to 6 = *absolutely true*. Sample items are "I often feel fearful" (neuroticism), "I work hard to accomplish my goals" (conscientiousness), "Most people I know like me" (agreeableness), "I have a lot of intellectual curiosity" (openness), and "I feel very boring at a party where there are many people" (extraversion). Cronbach's alphas were .76 = agreeableness, .78 = openness, .81 = conscientiousness, .80 = extraversion, and .81 = neuroticism. The 10-week test–retest reliability ranged from .67 (agreeableness) to .81 (openness; M. Wang et al., 2011), compared with the values of .68 (agreeableness), .73 (openness), .81 (conscientiousness), .77 (extraversion), and .86 (neuroticism; Costa & McCrae, 1992), and .71 (agreeableness), .76 (openness), .78 (conscientiousness), .81 (extraversion), and .80 (neuroticism) in this study.

Career Decision-Making Self-Efficacy Scale-Short Form. We used the Chinese version of the Career Decision-Making Self-Efficacy Scale–Short Form (CDMSES-SF; Betz, Klein, & Taylor, 1996; Betz & Taylor, 1994; Taylor & Betz, 1983) to measure participants' CDMSE. Participants rated 25 items in the Chinese version (Long, 2003) on a 5-point Likert-style scale from 1 = *completely unconfident* to 5 = *completely confident*. Sample items are "I can accurately evaluate my capability" (self-appraisal), "I can find the information that I was interested in" (gathering occupational information), "I can select a major from the list of major candidates" (goal selection), "I am able to make the next five-year plan" (making plans for the future), and "Although I might encounter difficulties in study, I can take effective measures to solve it" (problem solving). Cronbach's alpha for CDMSES-SF (Chinese version) in this study was .95, compared with .93 (Betz et al., 1996) and .89 (Long, 2003). Cronbach's alphas for the subscales were .83 (accurate self-appraisal), .84 (gathering occupational information), .82 (goal selection), .80 (making plans for the future), and .84 (problem solving).

Procedure

We combined the items in the two measures into a single booklet, which we entered into the Wenjuanxing website survey software so that participants could respond to them anywhere. The survey required an average of 10 to 15 minutes to complete, and we could monitor and track in real time if participants responded or completed the survey. Before we distributed the survey form, we conducted a critical ethics review, and obtained ethical approval from the South China Normal University Ethics Committee, which was attached to the instructional letter to participants. After participants had completed the survey, the data were imported into SPSS 25.0 for analysis.

Results

Means, standard deviations, and significance of the differences in personality traits by gender, grade, and discipline are shown in Table 1. Regarding gender differences, the women (vs. men) had higher scores for neuroticism, conscientiousness, and agreeableness, and the men (vs. women) had higher scores for openness and extraversion. Except for neuroticism (p = .05), participants' personality traits did not differ significantly regarding gender. Regarding grade differences, participants from different grades performed significantly differently only for agreeableness (p = .04). That is, in a focus on the difference in average score levels, the trend of scores was distinct among different grade students. In terms of discipline, there was a significant difference in neuroticism among participants from different disciplines (p = .04).

Table 1. *Means, Standard Deviations, and Significant Differences for Big Five Personality Traits*

Scale	M	SD	Men (n = 34)		Women (n = 168)		t	Sig.	Freshman		Sophomore		Junior		Senior		F	Sig.	Internet engineering		Electronic commerce		Vocational education		F	Sig.
			M	SD	M	SD			M	SD	M	SD	M	SD	M	SD			M	SD	M	SD	M	SD		
Neuroticism	3.65	0.70	3.43	0.69	3.69	0.70	-1.97*	.05	3.61	0.72	3.58	0.61	3.55	0.76	3.89	0.64	2.16	.09	3.63	0.70	3.54	0.72	3.89	0.64	3.41*	.04
Conscientiousness	4.05	0.62	4.00	0.72	4.06	0.60	-0.44	.66	4.11	0.64	4.09	0.75	3.93	0.51	4.04	0.62	0.92	.43	4.05	0.69	4.04	0.56	4.04	0.62	0.01	.99
Agreeableness	4.40	0.66	4.22	0.67	4.43	0.65	-1.67	.10	4.44	0.62	4.39	0.63	4.20	0.64	4.57	0.72	2.72*	.04	4.36	0.65	4.35	0.63	4.57	0.72	1.82	.17
Openness	3.92	0.68	3.98	0.79	3.90	0.66	0.61	.54	3.99	0.77	3.86	0.73	3.80	0.59	3.98	0.56	0.98	.40	4.00	0.73	3.80	0.68	3.98	0.56	1.80	.17
Extraversion	3.52	0.75	3.68	0.79	3.49	0.74	1.33	.18	3.61	0.83	3.32	0.71	3.50	0.77	3.54	0.58	1.12	.34	3.53	0.86	3.50	0.72	3.54	0.58	0.03	.97

Note. N = 202.
* p < .05, ** p < .01, two-tailed.

Means, standard deviations, and significance of the differences in CDMSE are shown in Table 2. Participants' overall mean CDMSE was intermediate or above average. Regarding gender differences, women (vs. men) scored lower for each dimension of CDMSE, but the difference was significant only for

accurate self-appraisal (p = .03). In terms of grade differences, first-year participants received the highest scores in each dimension of CDMSE, followed by juniors, seniors, and sophomores; however, the difference was significant only for goal selection (p = .03). Although there was no significant difference in CDMSE by discipline, participants who majored in internet engineering had higher CDMSE than those who majored in social science (which includes electronic commerce and vocational education).

Table 2. *Means, Standard Deviations, and Significant Differences for Career Decision-Making Self-Efficacy*

Scale	M	SD	Men (n = 34)		Women (n = 168)		t	Sig.	Freshman		Sophomore		Junior		Senior		F	Sig.	Internet engineering		Electronic commerce		Vocational education		F	Sig.
			M	SD	M	SD			M	SD	M	SD	M	SD	M	SD			M	SD	M	SD	M	SD		
ASA	3.21	0.65	3.43	0.60	3.16	0.65	2.21*	.03	3.36	0.68	3.07	0.63	3.16	0.58	3.10	0.65	2.38	.07	3.29	0.64	3.18	0.65	3.10	0.65	1.32	.27
GOI	3.17	0.66	3.35	0.60	3.14	0.67	1.69	.09	3.29	0.72	3.08	0.62	3.15	0.60	3.06	0.62	1.48	.22	3.20	0.70	3.20	0.64	3.06	0.62	.74	.48
GS	3.28	0.66	3.38	0.59	3.26	0.68	1.00	.32	3.45	0.67	3.18	0.65	3.20	0.67	3.13	0.61	3.04*	.03	3.33	0.68	3.30	0.67	3.13	0.61	1.38	.25
MPFTF	3.23	0.64	3.36	0.64	3.20	0.64	1.33	.18	3.35	0.69	3.13	0.54	3.17	0.67	3.17	0.60	1.42	.24	3.31	0.67	3.18	0.64	3.17	0.60	1.05	.35
PS	3.38	0.68	3.52	0.65	3.36	0.68	1.27	.20	3.53	0.65	3.22	0.60	3.32	0.71	3.33	0.71	2.08	.10	3.45	0.70	3.35	0.63	3.33	0.71	.61	.540
CDMSE	3.25	.60	3.41	.54	3.22	.60	1.65	.10	3.39	0.61	3.13	0.54	3.20	0.59	3.16	0.58	2.43	.07	3.32	0.62	3.24	0.58	3.16	0.58	1.02	.36

Note. N = 202. ASA = accurate self-appraisal, GOI = gathering occupational information, GS = goal selection, MPFTF = making plans for the future, PS = problem solving, CDMSE = career decision-making self-efficacy. * p < .05, ** p < .01, two-tailed.

Means, standard deviations, and Pearson correlations between the Big Five personality traits and the five dimensions of CDMSE are shown in Table 3. We were not surprised that neuroticism was negatively correlated with CDMSE (r = -.21). In contrast, the correlations of conscientiousness, openness, and extraversion with the total scores of CDMSE were positive at a moderate level (r = .45, .45, .35, respectively), and the relationship of agreeableness with the total score of CDMSE and with each CDMSE factor was not significantly robust (r < .30). Of the factors, conscientiousness (r = .47) and agreeableness (r = .29) were highly positively correlated with gathering occupational information, and openness (r = .45) and extraversion (r = .38) were highly positively correlated with problem solving. Overall, openness with CDMSE (r = .453) was the personality trait that had the closest correlation with conscientiousness with CDMSE (r = .449).

Table 3. *Correlation Matrix for Personality Trait and Career Decision-Making Self-Efficacy Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Neuroticism	–										
2. Conscientiousness	-.06	–									
3. Agreeableness	.07	.30**	–								
4. Openness	-.04	.32**	.44**	–							
5. Extraversion	-.10	.09	.29**	.58**	–						
6. ASA	-.19**	.46**	.21**	.41**	.27**	–					
7. GOI	-.21**	.47**	.29**	.43**	.32**	.82**	–				
8. GS	-.19**	.34**	.22**	.36**	.30**	.74**	.82**	–			
9. MPFTF	-.22**	.39**	.27**	.41**	.30**	.72**	.81**	.82**	–		
10. PS	-.14*	.38**	.28**	.45**	.38**	.71**	.79**	.78**	.79**	–	
11. CDMSE	-.21**	.45**	.28**	.45**	.35**	.88**	.94**	.92**	.91**	.90**	–
M	3.65	4.05	4.40	3.92	3.52	3.21	3.17	3.28	3.23	3.38	3.25
SD	0.70	0.62	0.66	0.68	0.75	0.65	0.66	0.66	0.64	0.68	0.60

Note. ASA = accurate self-appraisal, GOI = gathering occupational information, GS = goal selection, MPFTF = making plans for the future, PS = problem solving, CDMSE = career decision-making self-efficacy.
* $p < .05$, ** $p < .01$, two-tailed.

The results of the regression analysis that we conducted to examine the influence of the Big Five personality traits on participants' CDMSE are shown in Tables 4 to 6. The variables entered sequentially into the regression equation were openness, conscientiousness, neuroticism, and extraversion, excluding agreeableness. The multiple correlation coefficient was .60, and the overall explained variance was .36, that is, the four personality trait variables were able to predict 36% of the variance in participants' CDMSE. Consequently, the standard regression equation was established as follows:
CDMSE = 1.14 + .21 × openness + .33 × conscientiousness-0.14*neuroticism + 0.12 × extraversion.

According to the standardized beta regression coefficient, conscientiousness (β = .35) extremely significantly predicted CDMSE, followed by openness (β = .25), neuroticism (β = -.16), and extraversion (β = .16). Specifically, conscientiousness and openness predicted the five dimensions of CDMSE positively, neuroticism had a strong negative influence on each CDMSE dimension, but extraversion could predict only goal selection and problem solving. All four personality traits (predictors) strongly predicted goal selection and problem solving.

Table 4. *Regression Analysis Model of Personality Traits and Career Decision Making Self-Efficacy*

Model	R	R^2	Adjusted R^2	F	Sig.
4	.60[d]	.36	.34	27.15***	.00

Note. [d] Predictors: (constant), extraversion, conscientiousness, neuroticism, openness.
* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed.

Table 5. *Analysis of the Regression Coefficients for Personality Traits and Career Decision-Making Self-Efficacy*

Model		B	β	t	Sig.
4	Constant	1.14		3.38***	.00
	Openness	0.21	.25	3.28***	.00
	Conscientiousness	0.33	.35	5.69***	.00
	Neuroticism	-0.14	-.16	-2.85**	.01
	Extraversion	0.12	.16	2.20*	.03

Note. Dependent variable: career decision-making self-efficacy.
* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed.

Table 6. *Hierarchical Multiple Regression of Personality Traits on Career Decision-Making Self-Efficacy*

Dependent variable	Independent variable	B	β	t	F	ΔR^2
ASA	Conscientiousness	0.37	.36	5.78***	29.83***	.30
	Openness	0.27	.28	4.56***		
	Neuroticism	-0.15	-.16	-2.72**		
GOI	Conscientiousness	0.38	.36	5.94***	34.43***	.33
	Openness	0.30	.31	5.13***		
	Neuroticism	-0.17	-.18	-3.07**		
GS	Openness	0.17	.18	2.16*	14.50***	.21
	Conscientiousness	0.28	.26	3.95***		
	Neuroticism	-0.14	-.15	-2.37*		
	Extraversion	0.14	.16	2.00*		
MPFTF	Openness	0.30	.31	4.91***	25.19**	.27
	Conscientiousness	0.29	.28	4.33***		
	Neuroticism	-0.17	-.19	-3.13**		
PS	Openness	0.23	.23	2.94**	27.84***	.29
	Conscientiousness	0.31	.29	4.50***		
	Neuroticism	-0.11	-.19	-3.19**		
	Extraversion	0.20	.23	3.05**		

Note. ASA = accurate self-appraisal, GOI = gathering occupational information, GS = goal selection, MPFTF = making plans for the future, PS = problem solving.
* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed.

Discussion

Personality Traits of University Students From Poor Rural Areas

In general, participants had developed relatively positive personality traits, as they scored highly in agreeableness, openness, and conscientiousness. However, they were not very proactive and confident, as their lowest scores were in extraversion (M. Wang, Dai, & Yao, 2011). This result did not support the findings of R. Chen et al. (2006) and Xing and Ma (2009), who reported that most of their general population of university student participants were active and outgoing, as their lowest scores were in neuroticism.

Specifically, regarding the gender variable, our findings showed that female (vs. male) participants scored higher in neuroticism. This result indicated that female (vs. male) student participants from impoverished rural areas had more anxiety, depression, sensitivity, and vulnerability (H. Liu, Shi, Auden, & Rozelle, 2018). This result can be explained by our students' archives, according to which, most girls had more responsibility and pressure from their families than boys and their urban counterparts, because most were the oldest child and had to take part-time jobs to pay tuition fees and living expenses, even supporting their younger sisters and brothers. Consequently, they had less time to concentrate on learning and improving their academic performance. In addition, discrimination against women in the labor market also accounted for lack of confidence in their ability to find a satisfactory job successfully after graduation (Drydakis, 2009; Fortin, 2005).

Regarding the grade variable, a significant difference was found, with seniors receiving the highest scores in agreeableness and neuroticism, followed by freshmen, sophomores, and juniors. This result is consistent with Xing and Ma's findings (2009) and can be explained by our students' archives, according to which, seniors had had more opportunities to participate in society and accumulate employment experience. Thus, they could not only improve their frankness, obedience, and modesty, but also strengthen their emotional responses to employment pressure. The result is also consistent with those of Foster, Cuzzillo, and Furness (2018) and Z. Wang et al. (2017), in whose studies occupational difficulties are discussed. In the conscientiousness dimension, freshmen had the highest scores, which indicated that they were the highest in characteristics such as competence, dutifulness, and deliberation (Pettitt & Dunlap, 1994), and seniors had the lowest scores because they had no course tasks, but had full involvement in writing theses and seeking jobs. Similarly, freshmen also scored the highest in extraversion and openness, namely, they were high in warmth, gregariousness, fantasy, and values, and took part in dynamic and energetic activity and action. This indicated that they were willing to accept new things (Costa & McCrae, 1991), owing to having less pressure from learning and daily life, and more time and energy to take part in various student events, according to our students' archives. It is notable that both freshmen and seniors scored very high in relatively positive personality dimensions, such as agreeableness, openness, and conscientiousness. This result can be attributed to the tendency in Chinese universities to increase study tasks and decrease extracurricular activities throughout the courses. Freshmen and seniors thus have more social student activities and less course pressure (Xing & Ma, 2009).

Regarding the discipline variable in general, participants who majored in vocational education scored higher in neuroticism, agreeableness, and extraversion compared with those who majored in internet engineering or electronic commerce. In contrast, participants in the other two disciplines scored higher in conscientiousness. A potential explanation for this finding is that the social science curriculum places more emphasis on cultivating students' emotions, aesthetics, and fantasy, whereas the natural science curriculum emphasizes students' rational thinking, decision making, and achievement striving (R. Chen et al., 2006).

Career Decision-Making Self-Efficacy of University Students From Poor Rural Areas

Students from poor rural areas had upper-middle CDMSE levels, but the individual differences were relatively significant. There was no significant difference in the total CDMSE level between men and women. However, as the male (vs. female) participants had higher scores in the five CDMSE dimensions, men (vs. women) had almost overwhelming advantages, especially in accurate self-appraisal, which was consistent with the results of Zheng and Zhang (2002). According to the extraversion comparison result between male and female participants, the men's personality traits were comparably stable and extraverted, which made them more flexible and proactive in job seeking, whereas the women were relatively volatile and less extraverted, which made them more passive and lacking in confidence in the labor market (Di Fabio, Palazzeschi, Asulin-Peretz, & Gati, 2013; Gati, Landman, Davidovitch, Asulin-Peretz, & Gadassi, 2010).

Regarding the grade variable, there was a significant difference between the CDMSE of participants from

different grades. Specifically, goal selection differed significantly among the participants, with the highest scores for freshmen, followed by juniors, seniors, and sophomores, in descending order. This pattern as a chronological sequence over the 4 years of study, of highest-lowest-high-higher was also applicable to the trend in total scores. As Bandura (1977) noted, the strength of self-efficacy is prominently influenced by individual cognitive appraisals of efficacy information. As new entrants to the university, freshmen had recently passed challenging entrance examinations and were excited about the novel opportunity to begin university study. Therefore, they may have highly evaluated their CDMSE at that stage (Long, 2003). However, with the decreasing novelty and increasing learning load, according to our students' archives, students unavoidably suffer from frustration and failure in the second year, which reduced their CDMSE drastically. Gradually, students may adapt to college life and become more experienced in the third year, when their CDMSE increased in this study. By the semester of their graduation, according to Xing and Ma (2009), students have become more mature and resilient psychologically and physically, with increasing knowledge and life skills, and with an objective and appropriate evaluation of themselves and the world, especially of the labor market, in which their CDMSE is significantly likely to be reliable and valid on an intellectual rather than statistical level. This pattern of highest-lowest-high-higher finding supported Long's (2003), L. Liu and Fan's (2013), and J. Wang et al.'s (2018) results, which depicted the fluctuating curve of Chinese university students' CDMSE.

In China, as there has always been a bias toward students' university majors, students prefer to major in science or engineering, rather than social disciplines, especially education. As students who major in science or engineering are much more respected and are expected to make more contribution to society, they are confident with their choice. In contrast, students who major in social disciplines, especially education, are often underestimated and are less confident. However, our positive results indicated that there were no significant differences between disciplines for each dimension of CDMSE.

Students care more about their soft skills (vs. knowledge learned from study) that they learn at university, such as problem solving, making plans for the future, and gathering occupational information, to use directly or to indirectly transfer to their future life or workplace. These skills are crucial for students' employability and are highly valued by employers (Crossman & Clarke, 2010; McQuaid & Lindsay, 2002; Nickson, Warhurst, Commander, Hurrell, & Cullen, 2012). This perceived confidence in their majors made a significant contribution to students' equal CDMSE (Mau, Perkins, & Mau, 2016).

Relationship Between Personality Traits and Career Decision-Making Self-Efficacy of University Students From Poor Rural Areas

We conducted this study in line with Mey, Abdullah, and Yin's (2014) study. Our purpose was to investigate how the personality traits of university students from poor rural areas in China affect their CDMSE, and thus to provide informative suggestions to individuals and stakeholders about how to optimize these students' CDMSE by profiling and monitoring their personality traits. Our results showed that each Big Five personality trait was significantly related to all aspects of CDMSE. Specifically, neuroticism had a significant negative influence on CDMSE, and the other four personality traits each had a significant positive correlation with CDMSE.

However, we found evidence from regression analysis that agreeableness, which had been regarded as the most crucial factor affecting CDMSE by Rottinghaus et al. (2002) and Nauta (2004), did not play a principal role in predicting participants' CDMSE. Our result was however similar to Hartman and Betz's (2007) finding. Our strikingly different result could be explained by the following two reasons. First, although agreeableness was positively related to CDMSE, the coefficient value represented a statistically small correlation, being slightly lower than .30 (Cohen, 1988). Second, the independent variable, extraversion, that was entered last in the regression equation had a p value of .03, which implied that agreeableness could not strongly predict CDMSE with a probability value higher than .05. Conversely, despite a similarly small effect size, neuroticism was negatively related to CDMSE and had a small p value of .01 in the regression

analysis. The characteristics of trust, straightforwardness, compliance, and altruism are facets of agreeableness (Costa & McCrae, 1991). Students with these characteristics would receive more employment opportunities than their peers would (X. Dai, 2004). However, because they are modest, obedient, and lack proactivity, it is difficult for them to transform employment opportunities into employment outcomes, which decreases their confidence and CDMSE (Xing & Ma, 2009). Our strikingly different result also suggests that an individual's perceived warmth and modesty do not have a crucial influence on skill development, vocational behavior, and career performance (Barrick, Mount, & Judge, 2001; Hartman & Betz, 2007). This conclusion can provide students with helpful suggestions about how and what to learn, how to develop a proactive personality, how to facilitate their CDMSE level, and how to promote their internship career performance.

More generally, according to the beta value, of the Big Five personality traits, conscientiousness had the most significant impact on participants' CDMSE, followed by openness, neuroticism, and extraversion. Students high in conscientiousness characterized by dutifulness, deliberation, and achievement striving (Costa & McCrae, 1991) often spend more time at work. As they may spend more time collecting information, they may gather useful information about preferred job vacancies. This may make them stand out in a job application, according to He, Donnellan, and Mendoza (2019), who linked job dedication and task performance to conscientiousness. Those high in openness are characterized by fantasy, action, and ideas (Costa & McCrae, 1991), and always impress people in interviews and workshops; those high in extraversion are characterized by warmth, gregariousness, and activity (Costa & McCrae, 1991) and are seen as team workers and persistent in their quest for success (Sheppard & Charles, 2017). In comparison, students who indicate neuroticism by anxiety, depression, and vulnerability, are often nervous about employment outcomes and lose confidence after failing to receive an interview (Xing & Ma, 2009). According to data analysis results, there was a significant gender difference in neuroticism, that is, female (vs. male) participants had higher neuroticism scores (see Table 1). This personality dimension has a negative influence on employment opportunities and success. Therefore, female students, in particular, should enhance their ability to adjust and control their pessimistic personality traits, and maintain their optimism.

It was notable, according to the hierarchical multiple regression, that four personality traits had strong predictive power for goal selection and problem solving. The employability of an individual who can solve problems has been well-documented in the labor market and is seen as a key factor by employers to identify students' transformability from education to work or from professional knowledge to work-related skills (Farley, 1987; Tsitskari, Goudas, Tsalouchou, & Michalopoulou, 2017). In addition, conscientiousness and openness had strongly predictive power for each CDMSE dimension. As such, students from poor rural areas should pay more attention to modifying all aspects of their personality, especially the traits of conscientiousness and openness, to enhance their total CDMSE and core employability.

Limitations and Directions for Future Research

Although our results extend the understanding of the relationships between the Big Five personality traits and the CDMSE of university students from poor rural areas in China, there are limitations. The first limitations are that all participants were from Guangdong, they were predominantly women, were all normal university students majoring in disciplines related to curricula in primary, secondary, or higher vocational education with clear and specific employment goals to engage in teaching in various schools and educational institutes, and were privileged to have been selected in the first round of university enrollment. Even in the context of equally undeveloped conditions in poor rural areas in China, more demographically diverse participants should be recruited for future research (i.e., nonnormal university students from other undeveloped provinces). Another potential limitation is that we did not consider mediators in the analysis. Future researchers should examine more specific variables, such as family support, which is a core factor influencing career decision-making self-efficacy (Blustein, Prezioso, & Schultheiss, 1995; Kenny & Bledsoe, 2005).

Implications

Our results provide informative contributions to policymakers, university staff, and in industries. First, governments should implement an array of supplementary employment policies to provide more job opportunities to alleviate students' employment anxiety, such as relieving the restrictions of the household registration system. When students find a job in a large city, the government should approve their household identity, irrespective of their original household identity, their length of time working in the city, and if they have social insurance. In addition, employment subsidies should be included for remote areas, and the protection of recent university graduate identities before employment should be expanded (Ngai, Pissarides, & Wang, 2019). This protection involves students being regarded as fresh graduates before they are successfully employed, no matter how long it is since they graduated. In China, fresh graduates are prioritized when they apply for positions, for example, fresh graduates access most teacher recruitment positions. If graduates do not find a job within two or three years, they lose the fresh graduate identity and priority, and are often regarded as having low employability.

Second, more psychology courses and counseling should be incorporated at universities, more student activities should be organized, and students' education-to-work competency should be enhanced (Cameron, Dhakal, & Burgess, 2017) by involving soft skills, such as ability to transfer knowledge to work skills, problem solving, and teamwork, in agendas to enhance students' employability and help them have a smoother move to the workplace. More internship opportunities should also be provided to strengthen students' employment competitiveness and confidence (Zhang, 2017). Third, employment discrimination by gender (Drydakis, 2009; Fortin, 2005), university reputation (Harvey, 2000; Stenstrom, Curtis, & Iyer, 2013), and family background (Chan, 2012) should be completely eliminated in industries.

Finally, through proper evaluation of their personality traits and CDMSE, students should pay more attention to their professional knowledge, work-related skills, and have a positive attitude with the expectation of heightening their employability and career achievement. In summary, in the context of little financial and emotional family support, stakeholders such as governments and universities should work together to develop students' positive personality traits by increasing their perceived support through more care of their mental and physical health, more respect, encouragement, and appraisal, and received social support (Vangelisti, 2009; Zimet, Dahlem, Zimet, & Farley, 1988) and, more importantly, by helping them achieve their employment aspirations and improving education equity.

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