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From School to Work: Improving Graduates' Career Decision-Making Self-Efficacy

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Abstract: As boundaryless careers become mainstream, individuals need to enhance career decision-making self-efficacy (CDSE) during career transitions to secure better employment outcomes and sustainable career development, especially when moving from a school to a work environment. Drawing on social cognitive career theory, this study empirically proposed a moderated mediation model to examine whether proactive personality (measured at Time 1), career success criteria clarity (CSCC, measured at Time 2), and family socioeconomic status (including family income, parents' educational level, and parents' occupational level; measured at Time 1) would contribute to CDSE (measured at Time 2). Results based on a two-wave survey of 235 college students showed that: (1) proactive personality positively predicted CDSE; (2) CSCC positively predicted CDSE; (3) CSCC partly mediated the relation between proactive personality and CDSE; (4) the positive effect of CSCC on CDSE was stronger among students with a lower family socioeconomic status. Individuals with strong proactive personalities were more likely to develop salience in career success criteria and in turn became more confident in making career decisions. Therefore, vocational educators in higher education could help to improve students' CDSE by promoting training programs for proactive thinking, providing successful role models, and encouraging family involvement, especially for students with a lower family socioeconomic status.

Keywords: career development; sustainable careers; sustainable employment; school to work; higher education

1. Introduction

A combination of socioeconomic factors, including an unpredictable business environment, complex labor markets, and rapid rates of career transactions, has spawned the notion of sustainable careers which permit individuals to maintain their desired level of employment and personal pursuits across their lifespan [1,2]. Although theory on sustainable careers is in its early stages, scholars have recognized the importance of career decision-making in the sustainability of individuals' careers [3]. While developing careers, individuals have to make all kinds of career-related decisions based on their career preferences, goals, expectations, as well as personal competencies [4]. Making career decisions is significant to sustainable employment outcomes and nevertheless difficult for employees, especially university graduates [5]. If students near graduation are not capable of making the correct decisions, they may not find employment or may enter dissatisfying careers, hindered from developing sustainable careers [6]. Self-efficacy expectations are among the most important causal factors of career indecision, referring to one's beliefs concerning his or her capability to successfully complete tasks [7]. Taylor and Betz [8] further developed the concept of career decision-making self-efficacy (CDSE),

especially indicating the confidence that one can perform well in a career decision-making process. Previous research has demonstrated that CDSE served as a crucial indicator for personal pursuits and employability factors such as job satisfaction [9–11], intrinsic satisfaction [10,12], career choice commitment [13], and career exploration [14], ensuring the development of sustainable careers.

Given that CDSE has been empirically proven to be a significant predictor of vocational outcomes, both academic researchers and career counselors have begun to more closely investigate the causes of CDSE, not only to extend the career development literature, but also to provide better career interventions. A great number of studies were focused on the effect of Big Five traits on CDSE [13,15–17]. Proactive personality, referring to "a relatively stable tendency to effect environmental change that differentiates people based on the extent to which they take action to influence their environments" [18] (p. 103), was shown to provide extra explanations for job satisfaction in addition to the Big Five traits [19]. The positive link between proactive personality and CDSE has also been empirically tested [11,20,21]. However, the intervening mechanism underlying this relationship is not clear yet. Therefore, this study develops and tests a moderated mediation model that posits increases in CDSE as the result of proactive personality, aiming to develop theoretical and empirical foundations of CDSE and career sustainability.

Drawing on social cognitive career theory [22], the current research focused on the mediation role of the clarity of career cognition. Career success criteria, used by individuals to evaluate their own career achievements, are viewed as a cognitive schema based on personal values, traits, and self-relevant information [23,24]. Proactive employees observe career role models on their own initiative, think about their goals, and consider what they value the most in their career lives. As their career success criteria become clearer, they feel more confident making career decisions. Given this, this research will examine the mediation effect of career success criteria clarity (CSCC) in the relationship between proactive personality and CDSE.

The sustainable career perspective is different from other career paradigms due to its precise and strong focus on both individual and contextual factors related to career development [25]. Therefore, from a sustainable career perspective, we will also investigate the role of family socioeconomic status (SES) in determining an employee's CDSE in addition to personality differences and cognitive influences. According to social cognitive career theory, a higher level of family socioeconomic status provides individuals with more vocational resources, opportunities, and role models, thereby helping to increase self-efficacy beliefs. However, there is a degree of inconsistency between theoretical reasoning and empirical results, which indicates that there is no significant link between family socioeconomic status and vocational self-efficacy [26,27]. Despite this, recent research shows that family socioeconomic status has a positive impact on CDSE [20]. After reviewing 47 relevant studies, Flores and colleagues [28] advocate for further research to discover the moderating effect of family socioeconomic status. Therefore, this research attempts to examine whether family socioeconomic status plays a moderation role in the relationship between CSCC and CDSE.

To sum up, this study tries to provide a more comprehensive understanding using an integrated conceptual framework. To be specific, the current research had three goals: the first goal was to test if proactive personality contributes to CDSE; the second one was to reveal the underlying mechanism between proactive personality and CDSE; the third one was to explore contextual factors that may moderate the relationship between CSCC and CDSE. To this end, present research established a moderated mediation model to examine the mediating effect of CSCC in the relationship between proactive personality and career decision making self-efficacy, as well as the moderating effect of family socioeconomic status (see Figure 1).

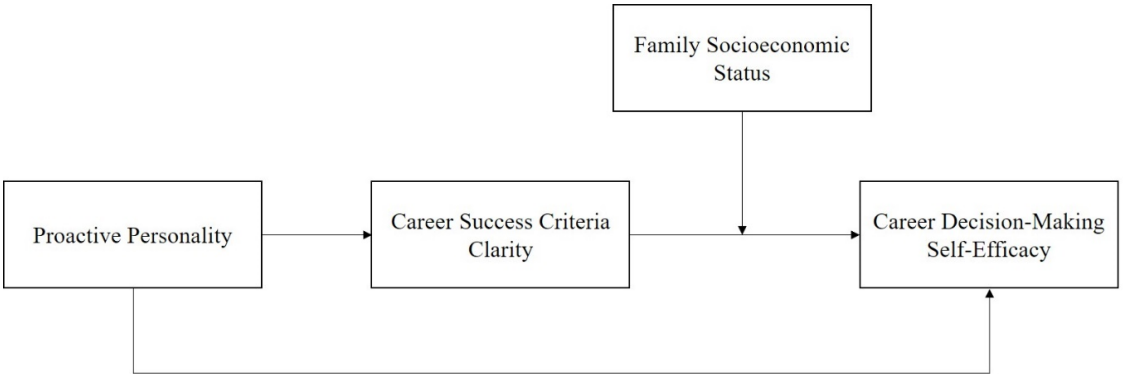

Figure 1. The research model.

2. Theoretical Background and Hypotheses Development

2.1. Proactive Personality and Career Decision-Making Self-Efficacy

Social cognitive career theory has been developed to provide a unifying framework for a better understanding of how people generate vocational interests, make relevant choices, and pursue career success [22]. Self-efficacy is an important component in the social cognitive career theory model, as it affects academic and work performance [29]. It refers to one's confidence in his or her abilities to accomplish one single task or a series of tasks. Generalized self-efficacy can be distinguished from more domain-specific self-efficacy which may have a stronger relationship with domain-specific variables [30]. Lots of research has demonstrated that CDSE served as an important indicator of individuals' vocational behaviors and outcomes [15,31,32]. CDSE refers to individuals' belief that they can successfully make career decisions, compassing five dimensions: self-appraisal, occupational information, goal selection, planning, and problem solving [33]. It is viewed as a crucial cognitive variable that influences career development [34].

Social cognitive career theory posits that personality traits primarily influence workers' self-efficacy beliefs and further affect workplace performance and career development [29]. Among various personality traits, being proactive is a key competitive character in career development, especially when facing a dramatically changing labor market [35]. A proactive personality, first proposed by Bateman and Crant [18], refers to a trait where individuals are more likely to take the initiative to influence their surroundings. It has been proved that proactive people are likely to experience high self-efficacy [36]. Lin and his colleagues [37] found a direct relationship between a proactive personality and academic self-efficacy. Using a survey of 352 teachers, Li et al. [11] found that proactive personality is positively related to self-efficacy. Compared with passive persons, proactive individuals are more self-initiated, change oriented, and future focused, pursuing better performance and attempting to improve their competencies, as well as collecting necessary information to make better decisions [35]. Proactive individuals are more likely to create conditions in career development and more active in pursuing career success. Such positive characteristics of proactive personality are considered as critical sense of self-efficacy, which in turn contribute to better occupational outcomes [20].

In addition, previous research has revealed the link between Big Five traits and CDSE. Of the five traits, extraversion, conscientiousness, and openness were found to be positively correlated with CDSE, while neuroticism was shown to be a negative predictor of CDSE [14–16]. According to the meta-analysis conducted by Fuller and Marler [38], a proactive personality was positively associated with conscientiousness, extraversion, and openness, and negatively related to neuroticism. Therefore, we assume that a proactive personality would positively affect CDSE. Hsieh and Huang [20], as well as Kim and Park [21], have provided empirical evidence supporting this assumption. On the basis of theoretical reasoning and practical results, we propose that:

Hypothesis 1 (H1). *Proactive personality positively predicts CDSE.*

2.2. The Mediation Impact of Career Success Criteria Clarity

Career success criteria, representing one's attitude, cognition, and values about career success, consist of three dimensions: fulfillment of intrinsic psychological needs, balance between work and non-work lives, and extrinsic rewards [24]. With clear career success criteria, individuals have a well-developed cognition both of themselves and their vocational goals, and therefore can generate more accurate self-appraisal and acquire occupational information more effectively. They would be more confident to select goals and plan for the future, and more capable dealing with challenges and solving hard problems, further enhancing career and life success. As mentioned above, CDSE consists of five dimensions, including self-appraisal, occupational information, goal selection, planning, and problem solving [33]. Hence, we argue that clarity is a key characteristic that is likely to make career success criteria effective in promoting CDSE. Meanwhile, as a domain-specific variable, it would serve as a better indicator than general variables when predicting domain-specific outcomes [39,40]. Theoretically, CSCC would be positively associated with CDSE.

The clarity of career success criteria develops over time as individuals think about goals and aspirations for their careers, observe role models, and consider what they value most in career lives. Proactive workers more readily take initiative in a broad range of activities and situations [41]. Numerous studies have revealed the influence of proactive personality on career-relevant variables, such as career adaptability, job performance, and affective commitment [42]. Apart from direct impacts, a proactive personality relates positively to organizational citizenship and job satisfaction through high level of leader-member exchange [43]. Hunter, Laursen, and Seymour [44] noticed that proactive individuals tend to plan for their career and continually make progress towards their goals, during which their vocational cognitions would be constructed. From a social cognitive perspective, proactivity is essential in cognitive development [45]. Therefore, we expect that a proactive personality has a positive effect on CSCC. Overall, the current study sought to examine the mediating effect of CSCC in the relationship between a proactive personality and CDSE. Consequently, we propose the following hypothesis:

Hypothesis 2 (H2). *CSCC mediates the relationship between proactive personality and CDSE.*

2.3. The Moderation Role of Family Socioeconomic Status

According to social cognitive career theory, both personal input and contextual factors affect career expectations and decisions [29]. As a contextual predictor, family socioeconomic status has received attention from a large number of scholars in career studies [46]. Specifically, family socioeconomic status has been proved to be positively related to career goals, self-efficacy, and career expectations [47]. Theoretically, high socioeconomic status families could provide individuals with more educational opportunities and social capital [48], ensuring better results in career choices. In contrast, families with a low family socioeconomic status lack useful resources, and even give rise to psychological stress because of poverty, hindering career success by family members [49]. Although theorists have proposed a link between family socioeconomic status and occupational outcomes, empirical studies have found inconsistent results regarding the relationship between family socioeconomic status and self-efficacy. Aguayo and colleague [47] found a positive relation between family socioeconomic status and self-efficacy. Metheny and McWhirter [46] reported that family socioeconomic status was positively associated with CDSE. However, Gonzalez, Stein, and Hua [50], as well as Tenenbaum, Byrne, and Dahling [51], indicated that there was no significant linkage between family socioeconomic status and self-efficacy. Scholars argue that a possible reason of the inconsistent results might be the measure used for family socioeconomic status [20]. It seems that perceived family socioeconomic

status has a positive impact on self-efficacy, while objective family socioeconomic status has no effect, which indicates a possibility of common method bias. Moreover, some of the research samples were low-income samples [28], which might have attenuated the effect of family socioeconomic status. To improve the accuracy of the findings, in this study, we measured objective family socioeconomic status, including family income and parents' educational and occupational level, with a sample that covers a wide range of family income.

In addition, most efforts to understand the role of family socioeconomic status in career development have mainly focused on its direct impact, resulting in a lack of examination on its moderating effect. Following a review of 47 studies that have tested socioeconomic status variables using the social cognitive career theory framework over the past 22 years, Flores and her colleagues [28] proposed that family socioeconomic status should be taken into account as environmental factors that may enhance or hinder individuals' career development, and advocated that family income and wealth disparities should be further investigated from the social cognitive career theory perspective as a moderating variable. Based on trait activation theory, contextual factors could moderate the effect of personal differences on behaviors [52]. Trait activation theory proposes that situations could be divided into strong ones and weak ones. Strong situations refer to those with salient requirements or expectations in which people with different personalities may behave similarly. In contrast, people in weak situations behave differently on the basis of personal traits, which means that personal traits are activated. For example, with a positive work climate as a strong situation, employees show more positive vocational behaviors, even with low levels of agreeableness and responsibility [53]. We propose high family socioeconomic status as a strong situation in which individuals with either clear or unclear career success criteria would have confidence in making career decisions since their parents provide sufficient resources. However, for people who are raised in families with low family socioeconomic status, CDSE largely depends on whether the individual has a clear cognition of themselves as well as career goals. Consequently, we propose the following hypothesis:

Hypothesis 3 (H3). *Family socioeconomic status negatively moderates the relationship between proactive personality and CDSE through the mediation role of CSCC: Proactive personality is more strongly related to CDSE through CSCC when family socioeconomic status is lower.*

According to Flores and colleagues [24], family socioeconomic status is always measured with a combination of family income, parents' educational level, and parents' occupational level. To provide more specific and differentiated explanations, we further developed Hypothesis 3 into the following hypotheses:

Hypothesis 3a (H3a). *Family income negatively moderates the relationship between proactive personality and CDSE through the mediation role of CSCC: Proactive personality is more strongly related to CDSE through CSCC when family income is lower.*

Hypothesis 3b (H3b). *Father's educational level negatively moderates the relationship between proactive personality and CDSE through the mediation role of CSCC: Proactive personality is more strongly related to CDSE through CSCC when father's educational level is lower.*

Hypothesis 3c (H3c). *Mother's educational level negatively moderates the relationship between proactive personality and CDSE through the mediation role of CSCC: Proactive personality is more strongly related to CDSE through CSCC when mother's educational level is lower.*

Hypothesis 3d (H3d). *Father's occupational level negatively moderates the relationship between proactive personality and CDSE through the mediation role of CSCC: Proactive personality is more strongly related to CDSE through CSCC when father's occupational level is lower.*

Hypothesis 3e (H3e). *Mother's occupational level negatively moderates the relationship between proactive personality and CDSE through the mediation role of CSCC: Proactive personality is more strongly related to CDSE through CSCC when mother's occupational level is lower.*

3. Methods

3.1. Data and Sample

Data was collected from undergraduates in school-to-work transition, mainly based on the following reasons. First, people in their twenties are in a career exploratory stage, during which they form work values and develop career-related cognition gradually [54]. Second, the destabilization of the global economy and rapid changes in employment patterns have created more challenges for the young in career development [55]. Numerous studies have shown that school-work transition will influence future career development and vocational outcomes [56]. Specifically, participants in this study were graduating students from several universities in Beijing and Taiyuan, China. Diversification requirements were met since participants came from different cities.

In some studies, the whole survey was completed by the same person, resulting in common method bias. To minimize common method bias, this study adopted a two-wave survey to collect data in two different time points with a time lag [57]. We measured proactive personality and family socioeconomic status at Time 1. Three months later, at Time 2, we delivered a second questionnaire, measuring CSCC and CDSE. We received a total of 600 responses at T1, of which 413 were valid. At T2, we received 220 responses with an effective rate of 53.27%. Participants came from 38 majors, 66.4% of whom were female, and the average age was 21.82 (Standard deviation = 1.83).

3.2. Measures

3.2.1. Proactive Personality

The original 17-item proactive personality scale (PPS) was developed by Bateman and Crant [18], who also put forward the concept of proactive personality. In this study, we used a Chinese version of the proactive personality scale developed by Shang and Gan [58]. The scale contained 11 items, one sample of which was "If I believe in an idea, no obstacle will prevent me from making it happen". The Chinese version of the proactive personality scale has been tested and validated by previous empirical studies [58]. The Cronbach's alpha was 0.89.

3.2.2. Career Success Criteria Clarity

Zhou et al. [24] developed a 21-item career success criteria scale. Pan and Zhou [59] shortened the scale to a 10-item version. To assess CSCC, we asked participants to rate the extent to which they were clear and confident while making judgement on each item of the shortened scale of career success criteria. This scale has been tested and validated by previous empirical studies [60]. A sample item was: "I am clear and confident regarding my views on whether achieving power over an organization represents career success". The Cronbach's alpha was 0.94.

3.2.3. Career Decision-Making Self-Efficacy

Betz, Klein, and Taylor [33] developed the 25-item Career Decision-Making Self-Efficacy Scale (CDMSE). This scale was used widely and had good reliability as well as validity [20]. The Chinese version of this scale was tested and validated by previous research [61]. To assess self-efficacy in career decision-making, the Chinese version of the Career Decision-Making Self-Efficacy Scale was used in this study. The Cronbach's alpha was 0.97.

3.2.4. Family Socioeconomic Status

Previous studies indicated that family socioeconomic status was usually measured by family income, parents' educational level, and occupational level [62–65]. Conger and Donnellan [63] explained that this was because each aspect of socioeconomic status may have an important independent influence on individuals. In this study, we used family income, parents' educational level and parents' occupational level to measure one's family socioeconomic status in accordance with previous studies (Bradley and Corwyn, 2007; Conger and Donnellan, 2007; Ensminger and Fothergill, 2003). Participants were asked to choose one option which was consistent with their real situation out of several options. For parents' educational level, the options were 1 = junior high school and below, 2 = high school, 3 = undergraduate or junior college, 4 = postgraduate and above. For parents' occupational level, the options were 1 = staff person, 2 = first-line manager, 3 = middle-level manager, 4 = senior manager. For family income, the options were 1 = low, 2 = relatively low, 3 = medium, 4 = relatively high, 5 = high.

Family income was not measured with accurate figure for two reasons. One was the privacy considerations and limitations in obtaining the precise income level of one's parents [20]. The other was the special social environment in China. Due to a vast territory and diverse economic situations, regional income gaps exist all around China. As a result, objective data of income may not reflect the socioeconomic status of a family in a particular region. Based on these considerations, we measured family income with participants' perception of their family income status comparing to other families within the same area.

3.2.5. Control Variables

As CDSE is a kind of personal ability [66], demographic characteristics could have an influence on it. So this study controlled for the effects of gender and age. When we conducted data analysis using a single element of family socioeconomic status, other elements of family socioeconomic status were also controlled.

Except for family socioeconomic status and control variables, participants were asked to rate variables using a 7-point Likert scale.

3.2.6. Data Analysis

We used SPSS 22.0 (IBM Corp., New York, NY, USA) to conduct descriptive statistics and correlation analysis. Before testing the hypotheses, we used Mplus 7.0 (Muthén & Muthén, Los Angeles, CA, USA) to conduct confirmatory factor analysis (CFA) according to Anderson and Gerbing [67]. CFA was used to test the model fit of measurement model.

In order to test indirect effects and moderated mediation model, Preacher and Hayes [68] recommended a method called bootstrapping and a tool called Process. We employed Model 4 and Model 14 of a Process bootstrapping approach to test an indirect and moderated mediation model. The Bootstrap sample size was 5000 and all variables were standardized in analysis.

4. Results

4.1. Description Statistics and Correlations

The mean, standard deviation and correlations of main variables were presented in Table 1. As shown in Table 1, proactive personality was positively related to CSCC ($r = 0.51$, $p < 0.001$) and CDSE ($r = 0.68$, $p < 0.001$). Thus, Hypothesis 1 was supported. CSCC was also positively related to CDSE ($r = 0.48$, $p < 0.001$). In addition, within five dimensions of family socioeconomic status, only family income had a positive relationship with CDSE ($r = 0.17$, $p < 0.05$).

Table 1. Descriptive Statistics and Correlations (N = 220).

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	PP	5.40	0.98	—									
2	CSCC	5.40	1.42	0.51 ***	—								
3	FSES	1.75	0.61	−0.09	−0.04	—							
4	FI	2.48	0.93	−0.02	−0.12	0.70 ***	—						
5	FOL	1.45	0.80	−0.12	−0.01	0.80 ***	0.45 ***	—					
6	FEL	1.69	0.77	−0.04	0.01	0.77 ***	0.37 ***	0.50 ***	—				
7	MOL	1.43	0.82	−0.12	−0.03	0.78 ***	0.40 ***	0.64 ***	0.44 ***	—			
8	MEL	1.67	0.74	−0.04	0.03	0.75 ***	0.35 ***	0.42 ***	0.65 ***	0.47 ***	—		
9	CDSE	5.08	1.12	0.68 ***	0.48 ***	0.10	0.17 *	0.03	0.08	0.05	0.04	—	
10	Gender	1.65	0.48	0.00	−0.05	−0.10	0.03	−0.05	−0.13	−0.11	−0.12	−0.09	—
11	Age	21.82	1.83	−0.10	−0.02	0.26 ***	0.25 ***	0.23 **	0.19 **	0.14 *	0.17 *	0.06	−0.25 ***

Notes. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. N = sample size. SD = standard deviation. PP = proactive personality. CSCC = career success criteria clarity. FSES = family socioeconomic status. FI = family income. FOL = father's occupational level. FEL = father's educational level. MOL = mother's occupational level. MEL = mother's educational level. CDSE = career decision-making self-efficacy.

4.2. Confirmatory Factor Analysis

In this study, we used confirmatory factor analysis (CFA) to test discriminant validity of the multi-dimension scale (proactive personality, CSCC, family socioeconomic status and CDSE). Before CFA, we conducted the KMO (Kaiser-Meyer-Olkin) test and the Bartlett's test of sphericity. The KMO value of 0.93 and the result of Bartlett's test sphericity ($p < 0.001$) indicated that the sample was suitable for factor analysis [69].

In this paper, we paired items when conducting CFA in order to make sure that the dataset was more normally distributed and more stable [70,71]. We used various fit indices of χ^2/df (χ^2 means chi-square, df means degree of freedom, χ^2/df means the value of chi square divided by degree of freedom), SRMR (standardized root-mean-square residual), CFI (comparative fit index), TLI (Tucker-Lewis index), and RMSEA (root mean square error of approximation) to evaluate the fit of the model according to the recommendation of Byrne [72], Hu and Bentler [73].

Table 2 showed the results of CFA in this study. It is noticeable that the four-factor model fit with data best, as compared with three other models. This result suggested that the hypothesized model of four factors was better than the others. Distinctiveness of all scales used in this study was ensured.

Table 2. Confirmatory factor analysis (CFA) of the Items (N = 220).

Measurement Models	χ^2	df	χ^2/df	SRMR	CFI	TLI	RMSEA
Four-factor model	535.08	318	1.68	0.04	0.95	0.94	0.06
Three-factor model	951.37	321	2.96	0.12	0.84	0.83	0.09
Two-factor model	1173.23	323	3.63	0.14	0.79	0.77	0.11
One-factor model	1652.57	324	5.10	0.12	0.67	0.64	0.14

Notes. N = sample size. χ^2 = chi square. Df = degree of freedom. χ^2/df = the value of chi square divided by degree of freedom. SRMR = standardized root-mean-square residual. CFI = comparative fit index. TLI = Tucker-Lewis index. RMSEA = root mean square error of approximation.

4.3. Test of Hypotheses

Table 3 showed the result of indirect effect of CSCC. Stage 1 in Table 3 showed the results of the total effect model. Stage 2 and 3 showed the results of indirect effect of CSCC. In all three stages, we controlled for the effects of gender and age.

As stage 1 in Table 3 showed, proactive personality had a significantly positive effect on CSCC ($\beta = 0.69$, $p < 0.001$), which provided further support for Hypothesis 1. In stage 2 and 3, the effects of proactive personality and CSCC on CDSE were both significant ($\beta = 0.51$, $p < 0.001$ and $\beta = 0.60$, $p < 0.001$, respectively). CSCC can also positively predict CDSE ($\beta = 0.18$, $p < 0.01$). This result indicated that CSCC partly mediated the relationship between proactive personality and CDSE. Thus, Hypothesis 2 was supported.

Table 3. Test of the Indirect Effect of CSCC.

Variables and Statistics	Stage 1. Outcome: CDSE			Stage 2. Outcome: CSCC			Stage 3. Outcome: CDSE		
	β	SE	t	β	SE	t	β	SE	t
PP	0.69 ***	0.05	14.11	0.51 ***	0.06	8.71	0.60 ***	0.06	10.77
CSCC							0.18 **	0.06	3.17
Gender	−0.06	0.05	−1.24	−0.04	0.06	−0.71	−0.06	0.05	−1.11
Age	0.11 *	0.05	2.20	0.02	0.06	0.32	0.11 *	0.05	2.18
R^2	0.48			0.26			0.51		
F	67.72			25.65			55.43		

Notes. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. β= standardized coefficient. SE = standard error. T = t value. PP = proactive personality. CSCC = career success criteria clarity. R^2 = R square. F = F value.

Tables 4 and 5 depicted the results of moderated mediation model in which the moderator was family socioeconomic status. As in Table 4, the interaction variable (CSCC × FSES) was significantly related to CDSE (β = −0.14, $p < 0.01$). Table 5 illustrated that when family socioeconomic status was at a high or low level (one standard deviation above or below the mean), the results of the indirect effect of CSCC were different (β = 0.01, 95% confidence interval = (−0.01, 0.14); β = 0.15, 95% confidence interval = (0.05, 0.27), respectively). But the confidence interval of the index of the moderated mediation model was (−0.16, 0.01), including zero. As a result, Hypothesis 3 was not supported.

Table 4. Test of the Moderated Mediation Model When the Moderator Was the Family Socioeconomic Status.

Variables and Statistics	Stage 1. Outcome: CSCC			Stage 2. Outcome: CDSE		
	B	SE	t	β	SE	t
PP	0.51	0.06	8.71 ***	0.64	0.06	11.55 ***
CSCC				0.15	0.05	2.79 **
FSES				0.15	0.05	3.11 **
CSCC*FSES				−0.14	0.05	−2.63 **
Gender	−0.04	0.06	−0.71	−0.05	0.05	−0.97
Age	0.02	0.06	0.32	0.07	0.05	1.35
R^2	0.26			0.54		
F	25.65			41.82		

Notes. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. β = standardized coefficient. SE = standard error. T = t value. PP = proactive personality. CSCC = career success criteria clarity. FSES = family socioeconomic status. CSCC*FSES = interaction of CSCC and family socioeconomic status. R^2 = R square. F = F value.

Table 5. Conditional Indirect Effect of Family Socioeconomic Status at Different Levels of Values.

Value of Family Socioeconomic Status	Effect	Boot SE	Boot LLCI	Boot ULCI
−1 standard deviation	0.15	0.06	0.05	0.27
0.00	0.08	0.04	0.01	0.17
+1 standard deviation	0.01	0.06	−0.11	0.14

Notes. Boot SE = boot standard error. Boot LLCI = boot lower limit confidence interval. Boot ULCI = boot upper limit confidence interval.

We conducted the same analysis when the moderators were father's occupational level, mother's occupational level, father's educational level, and mother's educational level. The results were almost the same that those moderated mediation models were not supported, as seen in Table 6. But the interactions of CSCC and father's occupational level and mother's occupational level were significant (β = −0.14, $p < 0.05$, 95% confidence interval = (−0.25, −0.03); β = −0.13, $p < 0.01$, 95% confidence interval = (−0.23, −0.03), respectively). Thus, Hypothesis 3b, 3c, 3d, and 3e were not supported.

Table 6. Results of Moderated Mediation Models.

Moderators	Index	Boot SE	Boot LLCI	Boot ULCI
Father's Occupational Level	−0.07	0.05	−0.17	0.02
Mother's Occupational Level	−0.07	0.04	−0.15	0.01
Father's Educational Level	−0.02	0.04	−0.11	0.06
Mother's Educational Level	0.00	0.04	−0.07	0.08

Notes. Boot SE = boot standard error. Boot LLCI = boot lower limit confidence interval. Boot ULCI = boot upper limit confidence interval.

Tables 7 and 8 showed the results when the moderator was family income. As in Table 7, the interaction variable (CSCC × FI) was significantly related to CDSE (β = −0.18, $p < 0.001$). Table 8 illustrated that when family income was at a high level (one standard deviation above the mean), indirect effect of CSCC was not significant (β = 0.05, 95% confidence interval = (−0.08, 0.18)). While family income was in low level (one standard deviation below the mean), indirect effect of CSCC was significant (β = 0.42, 95% confidence interval = (0.27, 0.57)). Thus, the results in this study supported Hypothesis 3a.

Table 7. Test of Moderated Mediation Model When the Moderator Was Family Income.

Variables and Statistics	Stage 1. Outcome: CSCC			Stage 2. Outcome: CDSE		
	β	SE	t	β	SE	t
PP	0.52	0.06	8.65 ***	0.57	0.05	10.55 ***
CSCC				0.23	0.05	4.35 ***
FI				0.23	0.05	4.18 ***
CSCC*FI				−0.18	0.05	−3.78 ***
Gender	−0.04	0.06	−0.68	−0.08	0.05	−1.72
Age	0.01	0.06	0.13	0.06	0.05	1.22
FOL	0.04	0.08	0.53	−0.04	0.06	−0.62
FEL	−0.02	0.08	−0.30	0.05	0.06	0.83
MOL	−0.01	0.08	−0.12	0.07	0.06	1.07
MEL	0.05	0.08	0.59	−0.10	0.06	−1.54
R^2	0.27			0.58		
F	10.96			28.48		

Notes. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. β = standardized coefficient. SE = standard error. T = t value. PP = proactive personality. CSCC = career success criteria clarity. FI = family income. CSCC*FI = interaction of CSCC and FI. FOL = father's occupational level. FEL = father's educational level. MOL = mother's occupational level. MEL = mother's educational level. CDSE = career decision-making self-efficacy. R^2 = R square. F = F value.

Table 8. Conditional Indirect Effect of Family Income at Different Levels of Values.

Value of Family Income	Effect	Boot SE	Boot LLCI	Boot ULCI
−1 standard deviation	0.42	0.08	0.27	0.57
0.00	0.23	0.05	0.13	0.34
+1 standard deviation	0.05	0.07	−0.08	0.18

Notes. Boot SE = boot standard error. Boot LLCI = boot lower limit confidence interval. Boot ULCI = boot upper limit confidence interval.

To show the moderating effect of family income visually, we conducted a simple slope test. As seen in Figure 2, the two lines had an obvious tendency to cross, which indicated that the moderating effect of family income was significant.

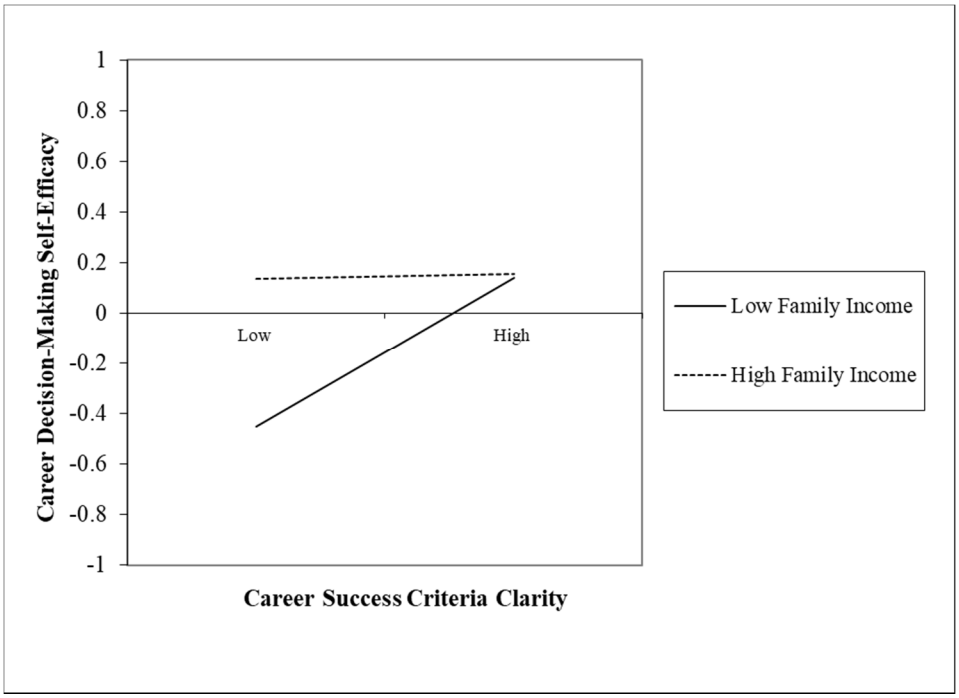

Figure 2. Moderating Effect of Family Income on the Relationship between CSCC and CDSE.

5. Discussion

5.1. Theoretical Implications

Drawing on social cognitive career theory, we constructed a conceptual model to test the predicting effect of proactive personality on CDSE through the mediating role of CSCC with family socioeconomic status as a moderator. Consistent with Hsieh and Huang [20], as well as Kim and Park [21], proactive personality was found to be positively related to CDSE. As expected, the mediating role of CSCC in the association between proactive personality and CDSE was proved in present study, which is in accordance with Bateman and Crant's [18] opinion that proactive personality will trigger active, motivated behaviors to clarify one's career goals. The results further confirmed that proactive personality has a positive relationship with CSCC, supporting social cognitive career theory in that personality will affect the construction of personal career goals. With the development of boundaryless and protean careers, both the vocational environment and personal interests, goals, and values are changing continually [74,75]. Therefore, individuals need to remain proactive to develop their careers with clear career success criteria. The results also showed that CSCC was positively associated with CDSE, which enriched the academic literature by proving that individuals with clear vocational goals and relevant cognition could generate more accurate self-appraisal and gain occupational information more effectively.

From the sustainable career perspective, both individual and contextual elements should be considered in career development. In terms of the contextual effect, our results found no significant linkage between family socioeconomic status and CDSE, supporting the findings of Gonzalez, Stein, and Hua [50], as well as Tenenbaum, Byrne, and Dahling's [51] studies, but being inconsistent with Hsieh and Huang's [20] findings. However, family income has been found to be positively related to CDSE, coinciding with the social cognitive career theory hypotheses that contextual factors can interact with subjective variables to affect career development [34]. Numerous scholars have provided empirical evidence of the direct effect of family income on self-efficacy, career decisions, expected career success and career development, whereas few scholars discussed the moderating effect of family income [48,49,76]. This study provides the empirical evidence that family income negatively moderates

the effect of CSCC on CDSE, supporting trait activation theory [52]. More specifically, a high family income blurs the effect of CSCC because favorable economic conditions facilitate one's self confidence. For example, a high family income allows family members to attend career training, observe career role models, and gain relevant social resources [76]. Besides, family income represents parents' career success and children will benefit from economic income, social status, and other aspects. As a result, in such a strong situation, individuals will have more confidence to make career decisions even if they are not clear enough with their career success criteria. In contrast, individuals with a lower family income are thought to be in a weak situation, where their personalities are activated. That is, CSCC has a stronger effect on CDSE.

It is interesting to find that among six moderators (family socioeconomic status, family income, parents' educational level, and parents' occupational level), only family income has a moderating effect on the relationship between CSCC and CDSE. First, there is no link between parents' educational achievements and children's CDSE. A possible reason is that parents' educational background mainly affects children's academic self-efficacy rather than career-related self-efficacy. Previous research has found that students whose parents attended college reported higher self-efficacy in making educational plans than their peers whose parents did not attend college [77,78]. Second, the reason why parents' occupational achievements were not correlated with children's CDSE is possibly due to measurement. Parents' occupational achievements were measured by their position level in organizations which vary in size, profit, and industry, lacking an objective foundation for comparison. Future work could adopt a more rigorous measurement to test the role of parents' occupational achievements in children's career development.

5.2. Practical Implications

This study offers important practical implications for both higher educators and career counselors. First, as proactive personality and CSCC positively predict CDSE, career educators and consultants could diagnose students' problems in developing CDSE by testing their proactive personality and CSCC. Proactive thinking training programs [79] and career role models could be provided to students as effective ways to facilitate the career decision-making process, ensuring a sustainable career development in the boundaryless career world. Second, higher educators should also be aware that family backgrounds may influence young adults' career decision making process. They could encourage more family involvement and guide parents to assist their children in sustainable career development. Moreover, they could organize different types of career workshops to provide vocational resources for students, especially for those with a low family socioeconomic status.

5.3. Limitations and Suggestions for Future Research

The present study is limited in several respects. First, although the two-wave design helped to reduce the common method bias, causal conclusions still cannot be drawn on the relationships between these variables in concern. Further research should adopt a more rigorous design, such as longitudinal design, to test the causal effects. Second, as the results were based on a student sample in China, whether the results could be generalized to a western cultural environment awaits future investigation. Cultural orientations may influence the relationships among these variables. For instance, in regard to making career decisions, Chinese students are more likely to take advice from significant others, compared with American students [61]. Therefore, in Western societies, the negative moderation effect of family socioeconomic status may be not as strong as that in Chinese society. Moreover, other contextual indicators could also be tested as moderators, such as organizational climate. We also advocate for further research to discover other mediators in the relationship between proactive personality and CDSE in that CSCC is only proved to be a partial mediator.

6. Conclusions

Despite these limitations, this research makes contributions to current literature by proving that the construction of career success criteria is crucial, since it represents the cognition and values regarding career goals, which results in high CDSE. Proactive personality is the basis for forming career success criteria, further influencing CDSE. Interplayed with CSCC, family income is a significant contextual factor in developing self-efficacy. The results offer directions for advancing social cognitive career theory and sustainable career theories with attention to how personality affects CDSE.

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