



The Relationship Between Career Exploration and Career Maturity Among University Students in the Guangdong-Hong Kong-Macao Greater Bay Area: A Moderated Mediation Model

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Abstract. Grounded in Social Cognitive Career Theory, this research probes the psychological pathway from career exploration to career maturity in undergraduates studying within the Guangdong-Hong Kong-Macao Greater Bay Area. The study tests a model in which commitment to one's academic major serves as a mediator and career decision-making self-efficacy (CDMSE) acts as a moderator. Using convenience sampling, questionnaires were sent to 650 students at 13 higher education institutions in Guangdong, and 595 valid answers were collected. Key results showed that: (1) career exploration positively forecasts career maturity; (2) career exploration positively predicts major commitment; (3) major commitment promotes career maturity; (4) major commitment partially mediates the link between career exploration and career maturity; (5) CDMSE strengthens the effect of major commitment on career maturity, thereby also amplifying the indirect channel "Career Exploration → Major Commitment → Career Maturity." These findings illuminate the underlying logic of university students' career growth and offer practical insights for career guidance in higher education.

Keywords: University Students; Career Exploration; Career Maturity; Mediation Model; Social Cognitive Career Theory

1 Introduction

With the persistent expansion of China's tertiary education system, the quantity of graduates has repeatedly reached unprecedented levels, worsening the structural mismatch between labor supply and demand. Phenomena like "postponed employment" and "poor job fit" have drawn wide attention. In reaction, policy directives have underscored the necessity of strengthening career counseling and employment assistance, with the goal of elevating students' career planning abilities and employability. The quality of career-related psychological assets directly shapes the rationality of occupational choices and the long-term viability of career paths^[1]. A high degree of career maturity not only forecasts more favorable immediate job selection outcomes but also

greater resilience over the career lifespan^[2]. Therefore, identifying the antecedents, mechanisms, and boundary conditions that account for students' career maturity is highly valuable for both extending career education theory and informing practice.

Career exploration encompasses the activities through which people establish career aims and chart developmental trajectories by appraising their own traits and gathering external occupational information. Following Super's stage model of career development, young people's exploratory conduct is a prerequisite for boosting career maturity; by systematically examining internal attributes (e.g., interests, values) and external contingencies (e.g., industry trends, job requirements), students can gradually narrow the divide between ideal and realistic careers. Prior work indicates that undergraduates who proactively pursue career exploration tend to possess clearer occupational orientation and greater confidence in decision-making, corresponding to elevated career maturity^[3]. Yet the psychological conversion process through which exploration becomes internalized into maturity remains insufficiently addressed. One may argue that a key mediating variable exists that transforms outward probing actions into steady internal career capabilities.

Major commitment is conceptualized as a student's favorable attitude and behavioral tendency to identify with and invest effort in their chosen discipline. The current study proposes that major commitment serves as a critical mediator in this transformative chain. According to Social Cognitive Career Theory (SCCT), learning experiences and proactive behavioral involvement reconstruct an individual's self-efficacy beliefs and outcome expectations. On one hand, deeper career exploration increases students' appreciation of their discipline's practical worth and instrumentality for future employment, thus fostering emotional ties to and behavioral engagement with their major^[4]. On the other hand, this strengthened commitment further motivates students to allocate more resources to developing disciplinary expertise and collecting career-relevant information, ultimately manifesting as higher career maturity. Consequently, we advance Hypothesis 1 (H1): Commitment to one's major mediates the effect of career exploration on career maturity among university students.

Moreover, the magnitude of this indirect pathway may fluctuate according to individual differences in decision-making self-belief. Career decision-making self-efficacy (CDMSE) is defined as the confidence a person holds in successfully undertaking tasks related to occupational decision-making. SCCT places self-efficacy as a central factor molding career behaviors and developmental courses. Specifically, when confronted with ambiguous career contexts, individuals high in CDMSE can draw upon their judgment-related conviction to convert disciplinary knowledge into systematic career planning actions^[5]. Conversely, people lacking such efficacy beliefs may falter at key decision points and find it difficult to leverage their disciplinary strengths, even if they show high commitment to their major. Thus, Hypothesis 2 (H2) is suggested: CDMSE moderates the effect of major commitment on career maturity, establishing a moderated mediation framework.

Guangdong Province is positioned at the vanguard of China's reform and opening-up, and the progress of the Guangdong-Hong Kong-Macao Greater Bay Area provides a distinct context where higher education and industrial advancement are thoroughly interwoven. Exploring the career psychology processes of undergraduates in this region

is representative for comprehending the career growth features of youth in economically vibrant settings. Hence, utilizing a sample of university students in Guangdong, this paper constructs a moderated mediation model to scrutinize the complex relationships among career exploration, major commitment, CDMSE, and career maturity.

2 Methods

2.1 Participants and Procedure

Using a convenience sampling approach, both electronic and paper-based questionnaires were administered to students at 13 higher education institutions in Guangdong Province between January and March 2026. To bolster regional representativeness, the sampling frame encompassed the core Pearl River Delta area (6 institutions), Eastern Guangdong (3 institutions), Western Guangdong (2 institutions), and Northern Guangdong (2 institutions). A total of 650 questionnaires were disseminated. Following the elimination of invalid responses—those with unduly short completion times, apparent systematic response patterns, or wrong answers to attention-check items—595 usable responses were retained, giving an effective response rate of 91.54%.

The sample composition was as follows: 162 males (27.23%) and 433 females (72.77%); 59 freshmen (9.92%), 103 sophomores (17.31%), 138 juniors (23.19%), and 295 seniors (49.58%); as for academic fields, 127 students were in Sciences (21.34%), 201 in Humanities and Social Sciences (33.78%), 192 in Engineering (32.27%), and 75 in Arts (12.61%). All subjects gave informed consent before the survey, and anonymity protocols were rigorously maintained.

2.2 Measures

Career Exploration Scale. An 11-item Chinese adaptation of the Career Exploration Survey was employed, covering environmental exploration and self-exploration. Items are answered on a 5-point Likert scale (1 = very little, 5 = very often); higher scores reflect greater exploratory initiative. In the present sample, Cronbach's α reached .92.

Career Maturity Scale. The Career Maturity Inventory, revised for Chinese student populations, was administered. It contains 18 items spread across three dimensions: Concern, Curiosity, and Confidence. Participants respond on a 5-point scale (1 = strongly disagree, 5 = strongly agree); higher total scores indicate greater career maturity. Cronbach's α here was .86.

Professional Commitment Scale. Students' dedication to their academic major was measured with a 15-item instrument encompassing affective, economic, normative, and continuance commitment. Responses are captured on a 5-point Likert format (1 = strongly disagree, 5 = strongly agree), where higher scores signal a tighter bond with the major. Scale reliability (Cronbach's α) in this study was .87.

Career Decision-Making Self-Efficacy Scale. The abbreviated Career Decision-Making Self-Efficacy Scale (CDMSE-SF), validated with Chinese undergraduates, was used. It consists of 25 items; respondents rate their confidence in executing career decision-making tasks on a 5-point scale (1 = no confidence at all, 5 = complete confidence). Elevated total scores denote stronger CDMSE. The Cronbach's α was .89 in this investigation.

3 Results

3.1 Common Method Bias and Validity Checks

Procedural measures such as anonymous responding and reversed items were used to reduce common method variance. Harman's single-factor test extracted six factors with eigenvalues above 1; the first factor explained 35.6% of the total variance, well under the 50% benchmark, indicating that common method bias was not a major concern. A confirmatory factor analysis showed that the hypothesized four-factor model fitted the data adequately ($\chi^2/df < 5$, RMSEA $< .08$, CFI $> .90$, TLI $> .90$, SRMR $< .08$) and clearly outperformed a single-factor model, supporting discriminant validity among the constructs.

3.2 Descriptive Statistics and Correlations

Table 1 presents the means, standard deviations, and intercorrelations of all variables. Career exploration showed a significant positive correlation with career maturity ($r = .263$, $p < .001$). Professional commitment was positively correlated with career exploration ($r = .432$, $p < .001$) and with career maturity ($r = .661$, $p < .001$). CDMSE correlated positively with career exploration ($r = .314$, $p < .001$), career maturity ($r = .676$, $p < .001$), and professional commitment ($r = .524$, $p < .001$). All correlation coefficients fell below .80, ruling out severe multicollinearity.

Table 1. Means, Standard Deviations, and Intercorrelations Among Variables

Variable	M	SD	1	2	3	4
Career Exploration	2.860	.710	—			
Career Maturity	3.040	.720	.263***	—		
Professional Commitment	3.320	.560	.432***	.661***	—	
CDMSE	3.280	.650	.314***	.676***	.524***	—

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

3.3 Mediation Analysis

After controlling for gender, grade level, and major discipline, mediation was tested with Model 4 of the PROCESS macro (Hayes, 2022)^[6]. The total effect of career exploration on career maturity was significant ($B = .265, p < .001$), and its impact on major commitment was also significant ($B = .360, p < .001$). When major commitment was introduced into the equation, the direct effect of career exploration on career maturity decreased but stayed significant ($B = .144, p < .001$), while the effect of major commitment on career maturity was significant ($B = .329, p < .001$). This pattern confirms partial mediation.

The significance of the indirect effect was assessed through 5,000 bias-corrected bootstrap samples. As shown in Table 2, the direct effect equaled .144 (95% CI [.135, .313]), and the indirect effect through professional commitment was .121 (95% CI [.116, .151]). Neither confidence interval included zero, pointing to significant direct and indirect paths. The mediated portion accounted for 45.66% of the total effect. Hypothesis 1 was supported.

Table 2. Bootstrap Estimates for Direct, Indirect, and Total Effects

Path	Effect	S.E.	<i>P</i>	Confidence Interval (95%) [Lower, Upper]
Direct Effect	.144	.045	.001	[0.135, 0.313]
Indirect Effect	.121	.012	.001	[0.116, 0.151]
Gross Effect	.265	.048	.001	[0.166, 0.355]

Note: Bootstrap samples = 5000. Indirect effect path: Career Exploration → Major Commitment → Career Maturity.

3.4 Moderation and Moderated Mediation

PROCESS Model 1 was applied to examine whether CDMSE moderates the major commitment–career maturity relationship. Table 3 reveals that the interaction term between major commitment and CDMSE was a significant predictor of career maturity ($B = .117, 95\% \text{ CI } [.010, .136]$), verifying the moderation effect.

Table 3. Moderation Effect of Career Decision-Making Self-Efficacy

Variable	<i>B</i>	<i>t</i>	S.E.	Confidence interval (95%) [Lower, Upper]
Professional Commitment	.176	1.464	.120	[-.059, .411]
CDMSE	.316	3.09	.102	[.116, .516]
Professional Commitment × CDMSE	.117	1.818	.032	[.010, .136]

Note 1: *B* = unstandardized coefficient; S.E. = standard error.

Note 2: * $p < .05$, ** $p < .01$, *** $p < .001$

Simple slope tests further indicated that for students with high CDMSE (+1 SD), the predictive power of major commitment on career maturity was stronger ($B = .515$, 95% CI [.413, .628]), whereas for those with low CDMSE (−1 SD), the relationship was weaker ($B = .331$, 95% CI [.213, .429]).

PROCESS Model 14 was then utilized to examine the complete moderated mediation framework. The index of moderated mediation was .051 (95% CI [.020, .080]), excluding zero. Thus, the indirect pathway from career exploration to career maturity via major commitment is positively moderated by CDMSE: the indirect effect intensifies when CDMSE is higher. Hypothesis 2 was supported.

4 Discussion

4.1 Direct Influence of Career Exploration on Career Maturity

The outcomes affirmed that career exploration positively predicts university students' career maturity, corroborating prior scholarship. Career exploration is not merely information gathering; it also functions as a form of active psychological rehearsal that integrates self-concept with career schema. Through direct experience and observational learning, students can more precisely calibrate their self-positioning and reduce decision-making anxiety caused by information asymmetry, thereby exhibiting superior performance on career maturity assessments.

4.2 The Mediating Function of Major Commitment

This research validated that major commitment partially mediates the connection between career exploration and career maturity. This result extends the explanatory boundaries of SCCT by showing that person–environment interactions (career exploration) indirectly promote stage-specific career development outcomes by shaping individuals' identification with a specific domain (major commitment). High major commitment encourages students to invest more proactively in disciplinary learning and career planning, thereby manifesting higher maturity during the career preparation phase. This result echoes the core propositions of SCCT, suggesting that cognitive and affective investment in one's academic field acts as a key bridge linking exploratory behaviors to developmental outcomes.

4.3 The Enhancing Role of Career Decision-Making Self-Efficacy

The study further elucidates that the effective translation of major commitment into heightened career maturity is significantly contingent upon individuals' possession of firm decision-making confidence. CDMSE positively moderated the effect of major commitment on career maturity. For students with high CDMSE, their confidence in career decision-making abilities enables them to more efficiently transform major commitment into concrete career preparatory actions, thereby maximizing the beneficial impact of major commitment on career maturity. In contrast, students with low

CDMSE, even if highly committed to their major, may fail to effectively advance their career plans due to a lack of decision-making confidence. This finding emphasizes the critical “catalyst” role of CDMSE—it not only directly impacts career maturity but also bolsters the positive effects of major commitment.

4.4 Limitations and Future Directions

Despite these contributions, several limitations deserve mention. First, the cross-sectional design precludes causal inferences; the findings can only be interpreted in terms of correlational and predictive associations. Future investigations should adopt multi-wave longitudinal designs to establish causality. Second, the current sample was confined to Guangdong Province. Though deliberate efforts were made to include institutions from regions with varying levels of economic development within the province, prudence is required when extending these conclusions to other parts of China. Subsequent studies could incorporate universities from Eastern and Western China to enable cross-regional comparative analyses. Third, contextual moderators (e.g., family support, peer influence) could be integrated to construct a more holistic ecosystem model. Fourth, based on the present findings, tailored intervention programs could be designed—for instance, embedding CDMSE enhancement modules into university career guidance curricula—and their effectiveness could be evaluated via rigorous experimental research.

5 Conclusion

Drawing upon empirical data gathered from university students in Guangdong Province, the investigation reaches the following conclusions:

(1) Career exploration significantly and positively predicts career maturity among undergraduates;

(2) Major commitment partially mediates the association between career exploration and career maturity;

(3) Career decision-making self-efficacy positively moderates the connection between major commitment and career maturity, and further amplifies the indirect pathway “Career Exploration → Major Commitment → Career Maturity.”

University career guidance units should endeavor to establish an integrated “Exploration–Identification–Empowerment” support system. This involves emphasizing the cultivation of students’ career exploration awareness and skills, strengthening the integration of disciplinary teaching with career development, and focusing on enhancing students’ career decision-making self-efficacy. Through such efforts, students’ career maturity can be effectively enhanced, preparing them to face future vocational challenges with greater confidence.

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