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Career Adaptability of Higher Vocational College Students under Home-School Collaboration in China

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Abstract. Despite growing interest in family influences on career development, little is known about how parental involvement shapes career adaptability among Chinese higher vocational college students and through what psychological mechanisms. This study examines the effect of students' perception of parental involvement on career adaptability, with self-leadership as a mediator. Survey data were collected from 939 students in several higher vocational institutions in China. Reliability and validity were assessed using SPSS and AMOS, and hypotheses were tested using regression-based mediation analysis with bootstrapping. Perception of parental involvement positively predicted self-leadership ($\beta = .320, p < .001$) and career adaptability ($\beta = .340, p < .001$), and self-leadership positively predicted career adaptability ($\beta = .474, p < .001$). Bootstrapping results indicated a significant partial mediating effect of self-leadership. These findings suggest that students who perceive higher levels of parental involvement are more likely to develop stronger self-leadership skills, which in turn enhance their ability to cope with career-related challenges and transitions. These findings advance understanding of the mechanisms linking family factors to students' career development in Chinese higher vocational education, and offer practical implications for parents, higher vocational colleges, and policymakers to develop coordinated home-school career interventions that cultivate students' self-leadership and ultimately strengthen their career adaptability.

Keywords: Higher vocational college students; Home-school collaboration; Perception of parental involvement; Self-leadership; Career adaptability

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1. Introduction

1.1 Research Background

With the continuous deepening of social reforms and the increasing diversification of family structures, a relationship of cooperation, coordination, and support has gradually been established between families and schools, which together constitute two indispensable environments for students' learning and development (Hu et al., 2024). In recent years, China has issued a series of policies and legal instruments to promote home-school collaborative education. Specifically, the Central Committee of the Communist Party of China and the State Council (2004) issued the "Opinions on Further Strengthening and Improving Ideological and Political Education for College Students", encouraging universities to establish communication and cooperation mechanisms with students' families.

The Ministry of Education of the People's Republic of China (2021) enacted the "Law of the People's Republic of China on Family Education Promotion", which incorporated family education into the national legal framework and clarified families' educational responsibilities. Building on these efforts, the Ministry of Education of the People's Republic of China (2023) released the "Opinions on Improving the Collaborative Education Mechanism Among Schools, Families, and Society", further specifying stakeholder roles and coordination mechanisms. However, despite the institutionalisation of home-school collaboration through national policies, empirical evidence regarding its effectiveness in promoting higher vocational students' career-related developmental outcomes remains limited. Through effective home-school collaboration, parents can gain a deeper understanding of school instruction and provide additional learning resources, thereby stimulating students' learning motivation and improving their academic performance (Rosales, 2023).

School-family-community collaboration plays a crucial role in students' development, and establishing systematic partnerships among these three domains is widely recognised as an important pathway to improving educational quality (Epstein, 2018). Seginer (2006) argues that the concept of parental involvement originates from sustained concern for educational development, emphasising parents' active engagement in their children's education through a range of behaviours and inputs across the family, school and community contexts. The core principle of home-school collaboration lies in close cooperation between schools and families, enabling the sharing of resources and information to enhance students' learning motivation and academic achievement.

This principle is grounded in ecological systems theory, which posits that student development is shaped by multi-level and interacting environments, with family, school and community functioning as interconnected systems that jointly influence students' academic performance and social adaptation (Blandin, 2017). While this theoretical framework has been widely applied in compulsory and general higher education contexts, its relevance and functioning within higher vocational education remain underexplored. In the context of higher vocational education, however, parental involvement has become markedly weaker than in

compulsory education, and its functional role within the higher vocational system has increasingly lost clarity. As a result, family education struggles to provide the foundational support it is expected to offer (Wang & Zhang, 2024).

In the early stages of individual development, the family, as the first social environment encountered, plays a fundamental role in shaping psychological traits, behavioural patterns and cognitive styles. In recent years, growing attention paid to adolescents' autonomy, self-efficacy and leadership qualities has brought self-leadership to the forefront of research in educational psychology and organisational behaviour. Self-leadership refers to the cognitive and behavioural strategies through which individuals guide and regulate their own goals, motivation and actions (Neck & Houghton, 2006). Although extensive research has examined the role of educational institutions and individual factors in the development of self-leadership, studies focusing on the family dimension remain comparatively limited.

In particular, the mechanisms through which parental involvement, family educational investment and the emotional climate of the home environment influence self-directed behaviours have yet to be systematically established. Existing evidence suggests that parents' active educational involvement, supportive communication and empowering parenting styles are positively associated with the development of strategies such as self-regulation, self-reinforcement and self-observation (Wen et al., 2020). Byeon and Oak (2012) further emphasise the link between family functioning and adolescents' self-leadership, demonstrating that cohesive and well-functioning family environments foster stronger self-efficacy and more goal-directed behaviour.

According to the 2024 National Statistical Bulletin on Educational Development issued by the Ministry of Education of the People's Republic of China (2024), the 3,074 higher education institutions nationwide, including 1,562 higher vocational (specialist) colleges, produce millions of graduates each year. The rapid expansion of higher vocational education means that an increasingly large cohort of students must transition from school to work within a highly competitive and fast-changing labour market, making career adaptability a particularly critical resource for managing career tasks, role transitions, and employment uncertainty.

Within this expanding landscape of vocational institutions, the quality of vocational education has become a central issue that demands attention. However, the traditional limitations of higher vocational education – particularly constraints in cultivating practical competence – often leave students inadequately prepared for labour market changes. As a result, many experience uncertainty in career planning, a lack of clarity in self-identity, and exhibit low motivation towards employment (Heng, 2025).

Savickas (2002) argues that career adaptability embodies the psychological resources individuals draw upon to cope with current and future career-related tasks, role transitions and life setbacks and can be understood as a form of readiness. As a core capability for achieving long-term success in one's career,

career adaptability plays a vital role in enabling individuals to secure high-quality employment, manage career transitions effectively and navigate their career development smoothly (Savickas & Porfeli, 2012). Drawing on previous research, Zhao and Guo (2010) propose that career adaptability demonstrates three key characteristics: first, it is a cultivable quality that becomes particularly evident when individuals face career challenges or crises; second, it serves as a driving force that supports continuous personal growth; and third, it is shaped by the reciprocal interaction between the individual and their environment. Schroedel and Carnahan (2019) highlight that parents perform dual roles – as advocates and educators – in their children’s career development.

However, evidence from studies focusing on Chinese higher vocational students suggests that parental involvement is often academically oriented, focussed primarily on academic matters and educational decision-making, whereas explicit parental guidance for career development is less frequently reported (Huang & Liu, 2025; Hu et al., 2024). Taken together, how home-school collaboration influences higher vocational students’ career adaptability through individual psychological mechanisms such as self-leadership remains an open and underexplored question.

1.2 Research Gaps

Although home-school collaboration has received increasing attention in China, policy discussions and empirical research have largely centred on compulsory education, with comparatively limited evidence from higher vocational settings. In the higher vocational context, parental attention to students’ school performance tends to prioritise grades and examination outcomes, whereas value development, career planning and post-graduation employment trajectories are less frequently emphasised (Hu et al., 2024).

Meanwhile, higher vocational students are navigating developmental demands that extend beyond academic attainment and include career preparation and the school-to-work transition. Against this backdrop, it remains unclear whether students’ perception of parental involvement is linked to career adaptability and what processes may explain this association. In particular, the mediating role of self-leadership in this association has not been examined in a sufficiently systematic manner. Addressing these gaps requires research that clarifies how parental involvement may support vocational students’ career development.

1.3 Research Objectives

The primary objective of this study is to examine the relationships among perception of parental involvement, self-leadership, and career adaptability among higher vocational college students in China. Gender, grade level, only-child status, and place of origin (urban-rural) are included as demographic control variables. Specifically, this study aims to achieve the following objectives:

1. To examine the effect of perception of parental involvement on self-leadership among higher vocational college students in China.
2. To investigate the effect of self-leadership on career adaptability among higher vocational college students in China.

3. To determine the effect of perception of parental involvement on career adaptability among higher vocational college students in China.
4. To examine the mediating role of self-leadership in the relationship between perception of parental involvement and career adaptability among higher vocational college students in China.

1.4 Research Contributions

Previous research on parental involvement has predominantly examined students in compulsory education, leaving higher vocational college students relatively under-represented. This study addresses this gap by focusing on this population and by specifying a mechanism through which family factors may relate to career outcomes. Specifically, it tests a mediation model in which self-leadership links perception of parental involvement to career adaptability, thereby extending the evidence base on how parental involvement may support students' career development during the school-to-work transition. The study also provides empirical survey evidence that can inform home-school collaboration practices and student-support initiatives in higher vocational education.

2. Research Model and Hypotheses

2.1 Research Model

Career Construction Theory (CCT) conceptualises career development as an active adaptive process in which individuals construct their careers through narrative self-making, highlighting the interaction between adaptability resources and environmental conditions (Savickas, 2013). Drawing on CCT, the present research model proposes that students' perception of parental involvement, as an external source of social support, influences their self-leadership, which in turn affects their career adaptability. The research model is presented in Figure 1. Based on this conceptualisation, a set of hypotheses is proposed to examine the direct and indirect relationships among these variables. Demographic variables, including gender, grade level, only-child status, and place of origin (urban-rural) were included as control variables in the subsequent analyses.

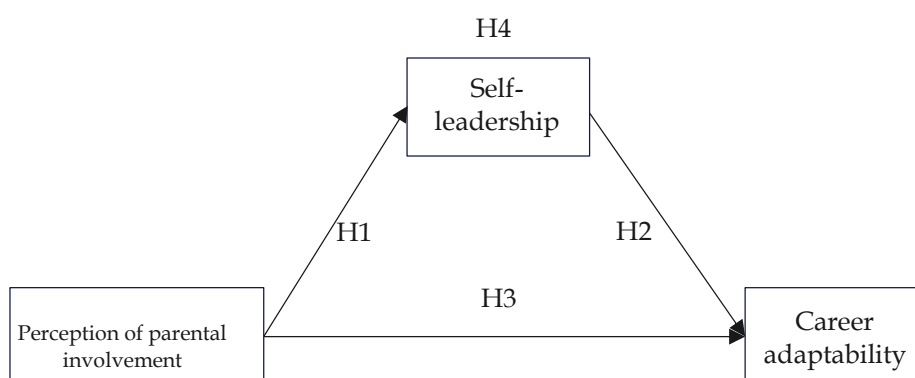


Figure 1: Research Model Diagram

2.2 Research Hypotheses

2.2.1 *The Relationship between Perception of Parental Involvement and Self-Leadership*

Self-leadership is a form of self-regulation and self-management (Houghton & Neck, 2002). Prior research has shown that positive parenting practices exert a significant and beneficial influence on adolescents' self-leadership (Hasanah et al., 2025). Similarly, Dilber et al. (2022) emphasise that a supportive family environment and positive early-life experiences play an important role in shaping individuals' future self-management capabilities. Geduld (2024) further notes that parental involvement in homework or learning support can foster students' self-regulated learning strategies—such as planning, monitoring and reflection—which represent concrete manifestations of self-leadership within academic contexts. Accordingly, the present study hypothesizes that the perception of parental involvement has a significant positive effect on self-leadership among Chinese higher vocational college students.

2.2.2 *The Relationship between Self-Leadership and Career Adaptability*

Self-leadership not only facilitates the development of organisations and teams but also plays a positive role in individuals' personal growth and development (Neck & Houghton, 2006). Existing research further indicates that strong self-leadership contributes to career development and career success (Megheirkouni, 2018). Self-leadership is essential for the development of career adaptability, particularly for students and early-career individuals, as it can significantly enhance the quality of career decision-making and adaptability (Park & Cho, 2020). Previous studies have confirmed the significant effect of self-leadership on career adaptability (Bao et al., 2024), thus the present study hypothesizes that self-leadership has a significant, positive effect on career adaptability among Chinese higher vocational college students.

2.2.3 *The Relationship between Perception of Parental Involvement and Career Adaptability*

Parental involvement plays a foundational role in young people's career construction (Cai et al., 2025). By offering career-related information and encouraging exploratory behaviours, parents help individuals cope more effectively with uncertainties in career development, thereby enhancing their career decision-making abilities and adaptive behaviours such as exploration, planning and confidence (Dietrich & Kracke, 2009). The family environment and children's relationships, particularly their relationship with parents, are important factors influencing adolescents' career expectations and development (Duck et al., 2013). From a family perspective, providing autonomy-supportive parenting has been shown to improve university students' career adaptability (You, 2024), hence, the present study hypothesizes that the perception of parental involvement has a significant, positive effect on career adaptability among Chinese higher vocational college students.

2.2.4 *The Relationship of Perception of Parental Involvement, Self-leadership and Career Adaptability*

Although self-leadership has not been extensively tested as a mediator between parental involvement and career adaptability, Career Construction Theory (CCT) provides a strong rationale for this pathway. The theory conceptualises career

development as an adaptive process shaped by the interaction between environmental conditions and individuals' adaptability resources (Savickas, 2013). In this view, parental involvement serves as a contextual resource whose benefits depend on students' self-regulatory internalisation of external support. Self-leadership, defined as self-regulatory strategies that direct one's goals, motivation, and behaviour (Neck & Houghton, 2006), captures this internal conversion process and may therefore link perception of parental involvement to career adaptability.

Su and Dong (2015) reported that positive parental involvement indirectly enhances university students' career adaptability through increased achievement motivation, and Şahin and Gülşen (2022) found that self-leadership mediates the relationship between basic psychological need satisfaction and career adaptability among Turkish university students. Accordingly, the present study hypothesizes that self-leadership serves as a mediator linking perception of parental involvement to career adaptability among Chinese higher vocational college students.

3. Research Methods

3.1 Research Design

This study employed a quantitative, survey-based cross-sectional design to examine the relationships among Chinese higher vocational college students' perception of parental involvement, self-leadership, and career adaptability, and to test the proposed mediation mechanism. A cross-sectional questionnaire design was appropriate because the research questions focus on associations of key constructs within a specific student population. Data were collected at one time-point using standardised self-report measures.

Prior to hypothesis testing, the measurement properties of the questionnaires were evaluated through reliability and validity analyses. Internal consistency reliability was assessed using Cronbach's alpha, and construct validity was examined using confirmatory factor analysis (CFA) in AMOS, with additional indices such as composite reliability (CR) and average variance extracted (AVE) reported where applicable. Hypotheses were tested in SPSS using a three-step mediation approach, and the significance of the indirect effect was further examined with bootstrap resampling.

3.2 Respondents and Sampling Method

Data were collected via an online questionnaire which examined the relationships among higher vocational college students' perception of parental involvement, self-leadership and career adaptability. Participants were recruited using convenience sampling from several higher vocational institutions in China. This approach was adopted because a complete sampling frame across institutions was not accessible and probability sampling was constrained by administrative feasibility and access permission. To reduce potential sampling bias, the survey was distributed across multiple institutions and disseminated through class-based channels to reach students across different grades and backgrounds. Following the guideline proposed by Wu and Tu (2014), the minimum

recommended sample size is five to ten times the total number of questionnaire items. Importantly, this guideline indicates a minimum rather than an upper bound. Given the planned CFA and mediation analyses, and to allow for possible invalid or incomplete responses and subgroup comparisons, a larger target sample was set, and 950 questionnaires were distributed. A total of 939 valid responses were returned, yielding a valid response rate of 98.84%. Participants' demographic characteristics are summarised in Table 1.

Table 1: Demographic Characteristics of the Sample

Background Variable	Category	N	%
Gender	Male	429	45.690
	Female	510	54.310
Year Level	First year	336	35.782
	Second year	358	38.126
	Third year	245	26.092
Only-child status	Yes	354	37.700
	No	585	62.300
Place of origin	Urban	587	62.510
	Rural	352	37.490

3.3 Research Instruments

This empirical study adopted a quantitative research approach and collected questionnaire data for analysis. The questionnaire items were adapted from established theories and prior research findings and were reviewed by experts to ensure content validity. A five-point Likert scale was used in the distributed questionnaire, with 1 indicating strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree. After data collection, reliability and validity analyses were conducted to examine whether the structure of the questionnaire met the required psychometric standards. Finally, the research model was tested.

3.3.1 Perception of Parental Involvement

In this study, the Perception of Parental Involvement scale was adapted from the University Student Parental Involvement Questionnaire developed by Daleure et al. (2014). As the original instrument was developed in English and had not been fully validated within the Chinese educational context, a standardised translation procedure was adopted. The scale was first translated into Chinese by a bilingual translator with expertise in educational research. To ensure linguistic accuracy and cultural equivalence, the translated version was subsequently reviewed and refined by a panel of experts in vocational education and educational psychology for content validity assessment.

A panel of seven experts from five higher vocational colleges in China was invited to evaluate the relevance, clarity, and appropriateness of the scale items. All experts held senior academic positions, including associate professor and professor ranks, and possessed extensive experience in vocational education, educational psychology, career development, and student development, ensuring both theoretical and practical relevance to the constructs under investigation. The adapted scale comprises 23 items and is structured into three subdimensions:

Value, Attitude, and Belief Shaping; Financial and Logistical Support; and Interaction and Participation.

3.3.2 Self-leadership

The Self-Leadership scale used in this study was adapted from the Self-Leadership Questionnaire revised by Yang et al. (2018), which has demonstrated good applicability in the Chinese context. After expert review for content validity, the adapted scale included 33 items organised into nine sub-dimensions: Successful Performance Visualization, Self-Goal Setting, Self-Talk, Self-Reward, Evaluation of Beliefs and Assumptions, Self-Punishment, Self-Observation, Natural Reward Strategies, and Self-Cueing.

3.3.3 Career Adaptability

The Career Adaptability scale used in this study was adapted from the Career Adaptability Questionnaire developed by Zhao et al. (2015), which demonstrated good applicability in the Chinese context. After expert review for content validity, the adapted scale included 34 items and was organised into six sub-dimensions: Career Concern, Career Control, Career Curiosity, Career Confidence, Career Interpersonal Competence, and Career Adjustment.

3.4 Data Gathering Procedure

Data were analysed using SPSS and AMOS. Descriptive statistics and correlations were computed in SPSS, and internal consistency was assessed using Cronbach's alpha. Construct validity was evaluated in AMOS using confirmatory factor analysis (CFA), with model fit assessed via χ^2/df , RMR, SRMR, RMSEA, GFI, AGFI, CFI, TLI, and IFI, and convergent validity examined using CR and AVE. Hypotheses were tested in SPSS using a three-step mediation procedure, and the indirect effect was further assessed with bootstrap resampling (5,000 samples); mediation was considered significant when the 95% confidence interval did not include zero.

3.5 Data Analysis

3.5.1 Reliability Analysis

Across the constructs, the Cronbach's alpha for perception of parental involvement was .899, while the Cronbach's alpha values for self-leadership and career adaptability were .923 and .922 respectively. All coefficients exceeded the recommended threshold of .700, indicating good reliability. These results demonstrate that the measurement scales possess high internal consistency and stability. Details are presented in Table 2.

Table 2: Reliability Analysis

Dimension	Cronbach's alpha
Perception of parental involvement	.899
Self-leadership	.923
Career adaptability	.922

3.5.2 Model Fit Indices

According to Hair et al. (2010), confirmatory factor analysis (CFA) was conducted to evaluate the measurement model. Model fit was assessed using SRMR, NNFI, IFI, RFI, CFI, RMSEA, AGFI, GFI, and χ^2/df , following commonly used cut-off criteria (Hu & Bentler, 1999): RMSEA and SRMR < .080; NNFI, IFI, RFI, and CFI > .900; AGFI > .800; GFI > .850; and χ^2/df < 5. The CFA fit indices for perception of parental involvement, self-leadership, and career adaptability are reported in Table 3.

Table 3: Model Fit Indices for the Measurement Models

Model fit index	Reference standard	Perception of parental involvement	Self-leadership	Career adaptability
χ^2/df	< 5	4.500	3.519	2.932
RMR	< .080	.060	.048	.042
SRMSR	< .080	.048	.039	.035
RMSEA	< .080	.061	.052	.045
GFI	> .850	.926	.903	.914
CFI	> .900	.948	.925	.936
TLI	> .900	.940	.913	.930
AGFI	> .800	.906	.881	.900
IFI	> .900	.948	.925	.930

Note. The χ^2/df value for Perception of parental involvement (4.500) approaches the cut-off (< 5). Given the sample-size sensitivity of χ^2 statistics, fit was interpreted alongside RMR, RMSEA, SRMSR, CFI, TLI, GFI, AGFI, and IFI.

3.5.3 Construct Reliability and Validity Analysis

This study conducted validity analyses for the three core variables: perception of parental involvement, self-leadership, and career adaptability. The results indicated strong internal consistency and convergent validity across all constructs. The CR for Perception of parental involvement was .962 with an AVE of .572; the CR for Self-leadership was .979 with an AVE of .591; and the CR for Career adaptability was .976 with an AVE of .558. All values exceeded the criteria proposed by Fornell and Larcker (1981) (CR \geq .700, AVE \geq .500), demonstrating structural stability and the reliability of the measurement scales.

In terms of descriptive statistics, perception of parental involvement ($M=3.932$, $SD=0.660$) recorded the highest score, indicating that most respondents perceived a relatively high level of parental support during their learning and development. Career adaptability ($M = 3.719$, $SD = 0.575$) showed a moderate level, suggesting that students possess a reasonable capacity for career planning and coping with challenges. Self-leadership ($M = 3.671$, $SD = 0.602$) was slightly lower, implying that students' abilities in self-regulated learning and goal attainment still have room for improvement. Details are presented in Table 4.

Table 4: Construct Reliability and Convergent Validity of the Measurement Models

Dimension	M	SD	FL	CR	AVE
Perception of parental involvement	3.932	0.660	.531-.883	.962	.572
Self-leadership	3.671	0.602	.664-.839	.979	.591
Career adaptability	3.719	0.575	.650-.827	.976	.558

3.5.4 Correlation Analysis

According to the results presented in Table 5, the Pearson correlation coefficients among perception of parental involvement, career adaptability and self-leadership were all statistically significant ($p < .010$), ranging from .431 to .576. As all coefficients were below .700, no multicollinearity issues were observed among the dimensions. Moreover, the square roots of AVE were greater than the corresponding inter-construct correlations, meeting the measurement criteria proposed by Fornell and Larcker (1981), and indicating good discriminant validity among the scales.

Table 5: Correlation Matrix and Square Roots of AVE

Dimension	Perception of parental involvement	Self-leadership	Career adaptability
Perception of parental involvement	.756		
Self-leadership	.431**	.769	
Career adaptability	.451**	.576**	.747

Note: The diagonal elements represent the square root of AVE for each dimension, and the values below the diagonal represent the Pearson correlation coefficients.

** $p < .010$.

3.6 Ethical Consideration

This study complied with the requirements set out in the National Policy and Guidelines for Human Research 2015, issued by the National Research Council of Thailand (NRCT). The research was conducted in accordance with Sections 3.6.3 (1) and 3.2.3 (20) of the guidelines. Throughout the research process, the principles of respect, justice and beneficence were strictly observed.

4. Research Results

4.1 Influence of Perception of Parental Involvement on Self-leadership

After controlling for gender, year level, place of origin (urban-rural), and only-child status, the perception of parental involvement among Chinese higher vocational college students had a significant positive effect on self-leadership ($\beta = .320$, $p < .001$). This indicates that higher levels of perception of parental involvement are associated with stronger self-leadership among students in Chinese higher vocational institutions. Therefore, Hypothesis H1 is supported, as shown in Model 2 of Table 6.

4.2 Influence of Self-Leadership on Career Adaptability

After controlling for gender, year level, place of origin (urban-rural), and only-child status, self-leadership among Chinese higher vocational college students had a significant positive effect on career adaptability ($\beta = .474, p < .001$). This indicates that higher levels of self-leadership are associated with stronger career adaptability among students in Chinese higher vocational institutions. Therefore, Hypothesis H2 is supported, as shown in Model 3 of Table 6.

4.3 Influence of Perception of Parental Involvement on Career Adaptability

After controlling for gender, year level, place of origin (urban-rural), and only-child status, the perception of parental involvement among Chinese higher vocational college students had a significant positive effect on career adaptability ($\beta = .340, p < .001$). This indicates that higher levels of perception of parental involvement are associated with stronger career adaptability among students in Chinese higher vocational institutions. Therefore, Hypothesis H3 is supported, as shown in Model 1 of Table 6.

4.4 Mediating Role of Self-Leadership

This study employed hierarchical regression analysis to examine the mediating effect of self-leadership on the relationship between the perception of parental involvement and career adaptability among Chinese higher vocational college students. The results are presented in Table 6.

After controlling for gender, year level, place of origin (urban-rural), and only-child status, Model 1 showed that the perception of parental involvement had a significant positive predictive effect on career adaptability ($\beta = .340, p < .001$).

In Model 2, the perception of parental involvement significantly and positively predicted self-leadership ($\beta = .320, p < .001$), indicating that parental involvement contributes to higher levels of self-leadership.

In Model 4, after adding the mediating variable self-leadership, the direct effect of the perception of parental involvement on career adaptability decreased ($\beta = .211, p < .001$) but remained significant. Meanwhile, self-leadership continued to significantly predict career adaptability ($\beta = .404, p < .001$).

In this study, partial mediation means that the mediating pathway through self-leadership explains part of the association between the perception of parental involvement and career adaptability, while a statistically significant direct effect of the perception of parental involvement on career adaptability still remains after self-leadership is included in the model. Therefore, these results indicate that self-leadership plays a partial mediating role in the relationship between the perception of parental involvement and career adaptability.

Table 6: Hierarchical Regression Analysis Results

Dimension	Model1		Model2		Model3		Model4		VIF
	Career adaptability		Self-leadership		Career adaptability		Career adaptability		
	β	<i>t</i>	β	<i>t</i>	β	<i>t</i>	β	<i>t</i>	
Female	-.037	-1.336	-.038	-1.346	-.001	-0.039	-.022	-8.59	1.039
Year level	-.030	-1.100	.001	0.036	-.033	-1.260	-.031	-1.221	1.005
Place of origin	.225	7.660**	.236	7.898	.174	6.264**	.130	4.694	1.218
Only-child status	.201	7.080**	.181	6.256**	.148	5.450**	.128	4.849***	1.113
Perception of parental involvement	.340	11.358**	.320	10.534**			.211	7.295***	1.321
Self-leadership					.474	16.557**	.404	13.706**	1.375
R^2	.294		.273		.379		.412		-
F	77.610***		69.889***		113.719***		108.940***		-

Note: The control variable uses males as the reference group. *** $p < .001$.

The significance of the mediating effect was further examined using Bootstrap analysis. Preacher and Hayes (2008) argue that, within mediation models, the Bootstrap method provides a more robust significance test than the traditional Sobel test and typically recommend a resampling size of 5,000 or more. Based on 5,000 Bootstrap samples, the direct effect of perception of parental involvement on career adaptability was .184, with a 95% confidence interval ranging from .134 to .233. The indirect effect was .112, with a 95% confidence interval ranging from .078 to .163, and the confidence interval did not include zero, indicating a significant mediating effect. The total effect was .296, with a 95% confidence interval of .245 to .347 (see Table 7).

Taken together, these results indicate that self-leadership exerts a significant partial mediating effect between perception of parental involvement and the career adaptability of higher vocational college students. Therefore, Hypothesis H4 is supported.

Table 7: Bootstrap Estimates of Direct, Indirect and Total Effects

Path Relationship	Estimate	95% CI	
		Lower	Upper
Direct Effect	.184	.134	.233
Indirect Effect	.112	.078	.163
Total Effect	.296	.245	.347

5. Discussion

5.1 Relationship between Perception of Parental Involvement and Self-leadership

This study found that Chinese higher vocational college students' perception of parental involvement has a significant positive effect on their self-leadership. The result indicates that parents, as external environmental factors, play a crucial role in the construction of students' psychological competence. Active parental involvement not only provides emotional support and value guidance but also shapes students' self-perception and self-regulation, thereby facilitating the development of self-leadership. Previous research has consistently emphasized the importance of family factors in the growth of individual self-leadership. For example, a favourable family environment is associated with higher levels of self-leadership among students (Maulana & Susilowati, 2025).

Family functioning, which reflects the organisation, communication, and adaptability of the household (Lewandowski et al., 2010), has been regarded as a key factor in the development of adolescents' self-control abilities (Richards et al., 2019). Since self-leadership theory draws extensively from self-management theory and its focus on self-control strategies (Mahoney & Arnkoff, 1978), effective family functioning can substantially promote adolescents' self-leadership formation (Byeon & Oak, 2012). Moreover, parents' emotional support has profound implications for the shaping of essential psychological traits. Sun et al. (2017) found that individuals who perceive higher levels of parental emotional and career support exhibit stronger career decision-making self-efficacy and are more likely to achieve career success.

Similarly, Wen et al. (2020) noted that the joint influence of family and school environments is indispensable in cultivating students' self-leadership; parental emotional support and behavioural guidance can significantly enhance students' self-leadership levels. Fulfilment of these needs activates intrinsic motivation and self-regulatory tendencies, thereby strengthening self-leadership behaviours. In other words, when students perceive understanding, encouragement, and trust from their parents, their sense of autonomy and intrinsic motivation increases, enabling them to engage more actively in goal setting, self-motivation, and self-reflection, ultimately fostering self-directed growth.

5.2 Relationship between Self-Leadership and Career Adaptability

This study found that Chinese higher vocational college students' self-leadership has a significant positive effect on their career adaptability, indicating that students with higher levels of self-leadership demonstrate greater adaptability when facing career decisions, uncertainty, and environmental changes. The finding suggests that self-leadership is not only an internal self-regulatory mechanism but also an essential psychological resource that facilitates individuals' career goal attainment and enhances their adaptability in the career development process.

Previous studies support this conclusion. Chang and Zang (2019) found that self-leadership exerts a significant direct effect on career adaptability. Park and Cho

(2020) further demonstrated that self-leadership plays a crucial role in the development of career adaptability, especially for students and early-career workers as it enhances the quality of career decision-making and flexibility in responding to change. Similarly, Bao et al. (2024) reported that self-leadership indirectly influences the formation of career adaptability through various personality-related factors. Bang (2021) also noted that self-leadership significantly strengthens academic self-efficacy, which, in turn, facilitates career exploration and thus promotes higher levels of career adaptability.

Consistent with these findings, the present study reaffirms the central role of self-leadership in the development of career adaptability among higher vocational students. Students with higher levels of self-leadership are more capable of self-motivation and self-guidance, actively engaging in goal setting, self-reflection, and strategy adjustment. As a result, they display greater psychological resilience and adaptive behaviours when facing uncertainties in their career development.

From the perspective of Career Construction Theory (Savickas, 2013), self-leadership serves as an internal psychological resource that facilitates the integration of self-concept and goal realization in the process of career development. Individuals with higher levels of self-leadership are more likely to form a positive vocational identity during the process of career construction and exhibit flexible adaptive responses to environmental changes, thereby enhancing their overall career adaptability.

5.3 Relationship between Perception of Parental Involvement and Career Adaptability

This study found that among higher vocational college students, perception of parental involvement had a significant positive effect on their career adaptability, suggesting that parental engagement serves as an important external resource supporting students' career development. When students perceive their parents as actively involved in academic and vocational matters, they are more likely to form positive career cognition and clearer career goals, enhancing adaptability to career decisions and environmental change. Previous studies support this result. Dietrich and Kracke (2009) showed that parental encouragement and information help adolescents cope with career uncertainty. Keller and Whiston (2008) demonstrated that emotionally supportive, rather than controlling, parental involvement fosters greater adaptability by encouraging autonomy and exploration.

These findings are relevant to the Chinese context, where family involvement is widely regarded as an important resource in students' educational and career development. Zeng et al. (2023) found that frequent parent-child discussions on career planning enhance students' career concern, control, curiosity, and confidence. Likewise, Xie et al. (2024) confirmed that positive family functioning strengthens vocational goal clarity and students' initiative and confidence. Consistent with these findings, the present study shows that students who perceive higher levels of parental support tend to internalize it as intrinsic motivation and self-leadership, developing stronger resilience and career identity. Based on Career Construction Theory (Savickas, 2013), parental involvement acts

as a key social context that supports students' meaning-making and self-directed growth, ultimately enhancing their career adaptability in a changing vocational labour market.

5.4 Self-Leadership as Mediating Variable

This study found that among higher vocational college students, self-leadership played a significant partial mediating role between perception of parental involvement and career adaptability. This result indicates that parents' active involvement not only directly enhances students' career adaptability but also indirectly promotes it by strengthening their self-management and self-regulation abilities. In other words, parents, as an external supportive environment, provide emotional and informational resources that foster students' internal psychological resources, enabling them to adapt more effectively to career exploration and changing environments.

Previous research supports this finding. Su and Dong (2015) found that parental rearing styles significantly influence college students' career adaptability, with positive parental involvement indirectly enhancing adaptability through increased achievement motivation. According to Self-Determination Theory (Ryan & Deci, 2000), intrinsic motivation is closely related to autonomy, competence, and self-regulation – key components that drive proactive behaviour. When students perceive understanding, encouragement, and trust from their parents, their psychological needs for autonomy, competence, and relatedness are fulfilled, thereby strengthening intrinsic motivation and promoting higher levels of self-leadership.

Family support can affect adolescents' career adaptability directly or indirectly through career decision-making self-efficacy (Wang et al., 2024). Self-efficacy, as a foundational element of self-regulatory behaviour, is a core driver of self-leadership development and can predict individuals' goal setting, self-motivation, and strategy use (Prussia et al., 1998; Byeon & Oak, 2012). Thus, active parental involvement enhances students' psychological autonomy and self-efficacy, which further promotes the development of self-leadership – an internal psychological resource that mediates the link between external parental support and career adaptability.

From the perspective of Career Construction Theory (Savickas, 2013), this finding illustrates a dynamic process in which external environmental factors are transformed into internal psychological capabilities and ultimately into career adaptation outcomes. As a key socializing context, parents provide emotional support and value guidance that help students develop stable vocational identities and clear goal orientations throughout the career construction process. Self-leadership functions as a psychological bridge linking parental support with career adaptability, allowing students to engage in self-observation, self-motivation, and self-reflection, thereby exhibiting greater adaptability and initiative when encountering career uncertainty and environmental change.

6. Conclusion

This study examined the influence of Chinese higher vocational college students' perception of parental involvement on career adaptability and tested the mediating role of self-leadership. Based on questionnaire data collected from students at multiple higher vocational institutions in China and subsequent statistical analyses, the findings showed that: (1) perception of parental involvement had a significant, positive effect on self-leadership; (2) self-leadership had a significant, positive effect on career adaptability; (3) perception of parental involvement had a significant, positive effect on career adaptability; and (4) self-leadership exerted a significant mediating effect between perception of parental involvement and career adaptability.

These results clarify a pathway through which family engagement may be translated into students' self-regulatory capacities during the school-to-work transition. Practically, the findings suggest that parents and higher vocational colleges can strengthen coordinated support by promoting career-related communication and guidance and by creating opportunities that foster students' goal setting, self-monitoring, and self-motivation. Given the cross-sectional, self-report design and the non-probability sampling approach, causal interpretations and broader generalisations should be made cautiously. Future research could adopt longitudinal or multi-source designs to further validate the proposed mechanism.

7. Recommendations

7.1 Gaps and Limitations Informing the Recommendations

The cross-sectional, self-report design and the use of convenience sampling, recommend that the findings should be interpreted as evidence of associations rather than strong causal effects. In addition, the scope of the sample may limit generalisability. Therefore, the following recommendations prioritise feasible actions that can be implemented within existing institutional resources and evaluated over time.

7.2 Research Recommendations

7.2.1 *Strengthen Career-oriented Home-school Collaboration Education*

The present study found that perception of parental involvement significantly predicted career adaptability, supporting the view that parental involvement is important for vocational students' career development (Xu et al., 2025). It is recommended that educational authorities and higher vocational institutions further implement a home-school collaborative education mechanism by organizing career development seminars, parental education workshops, and parent-child career communication programmes to enhance parents' awareness and ability to support students' vocational growth.

This study verified that family involvement promotes career adaptability through the enhancement of self-leadership. Therefore, a collaborative education model should be established, centred on students, integrating family resources with institutional career guidance services. Such a synergy between families and

schools can strengthen students' adaptive competence and resilience in increasingly complex and uncertain employment environments.

7.2.2 Embed Self-Leadership Development into Career Guidance and Talent Cultivation

This study further verified that family involvement promotes career adaptability through the enhancement of self-leadership. Compared with traditional academic undergraduates, higher vocational college students tend to emphasize clearer career goals, and their learning motivation is more closely aligned with future professional development (Ye et al., 2025). As self-leadership not only directly influences career adaptability but also mediates the relationship between perception of parental involvement and career adaptability, higher vocational institutions are encouraged to systematically integrate self-leadership into their talent cultivation frameworks.

Rather than being treated merely as part of psychological quality education, self-leadership should be developed as a foundational component of professional competence and embedded within curriculum design and training systems. According to Zhao and Wang (2025), strategies such as project-based learning, cultural engagement, and interdisciplinary course integration can be used to strengthen students' self-leadership. In practice, institutions may incorporate self-leadership training modules into career guidance, personal development, entrepreneurship education and group counselling programmes, focusing on goal setting, self-observation and reflection, and self-motivation, to support students' adaptability and proactive engagement in future professional contexts.

7.3 Recommendations for Future Research

Measurement tools for assessing "Perception of parental involvement" among Chinese higher vocational college students remain relatively underdeveloped. Most existing scales target primary and secondary school or adolescent populations and therefore do not adequately capture key forms of parental involvement at the tertiary level, particularly those related to career development, such as emotional support, career guidance and resource investment. In the higher vocational context, parental influences on students' career development are often more indirect and highly contextualised, and available instruments may not effectively capture parents' specific behaviours in career education support and psychological empowerment.

Accordingly, future research should develop and validate culturally grounded, stage-specific measures that align with higher vocational students' developmental tasks and school-to-work transition needs. Scale development could begin with interviews or open-ended surveys to extract dimensions based on students' lived experiences during the school-to-work transition, followed by item construction and validation through pilot testing and factor analyses. The measurement framework is recommended to emphasise career-development-oriented parental involvement, such as career information and resource support, participation in career decision communication, emotional and stress support related to employment, provision of practical opportunities and social resources, and autonomy support and goal guidance. Such a measure would enable a more accurate assessment of how family support contributes to students' career

development capacities and would provide a stronger measurement foundation for subsequent empirical research.

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