Vocational Students' Employability Skills and Career Success: Exploring the Moderating Impact of Geographic Location

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Abstract

Purpose- To enhance career readiness and promote equitable school-to-work transition, this study examines how the development of employability skills influences vocational school students' career success during internship, assessed through both subjective (perceived job success) and objective (job mobility and pay) indicators. The research further investigates the moderating role of geographic location (urban vs. rural) in shaping these relationships.

Design/methodology/approach-This study adopts a longitudinal survey design to examine the influence of employability skills on vocational students' career success, with a specific focus on the moderating role of geographic location. Data were collected from vocational school students in rural (Sichuan) and urban (Shanghai) China at two time points—prior to their internships (T1) and near the completion of their placements (T2). This design enables an assessment of regional differences and investigates how both the initial endowment and subsequent development of employability skills shape career success within a culturally diverse and contextually distinct setting.

Findings-The path modeling analysis shows that both the initial endowment and the development of employability skills significantly predict perceived job success among vocational school students. The endowment of employability skills is less important for objective criteria, while an increase in employability skills is related with greater job mobility, suggesting internships contribute to building human capital, particularly among underrepresented groups. Geographic location moderates only the relationship

between employability skills and perceived success, indicating that rural students can offset contextual disadvantages through skill development. These findings offer empirical support that internships provide a relevant context for individuals to develop their employability skills and respond to calls for cross-cultural, longitudinal career research.

Research limitations/implications-This research was conducted across vocational schools in both rural and urban regions of China, with measurement instruments specifically designed to assess the general employability skills of vocational school students.

Practical Implications- The findings highlight the vital role of employability skill development during internships, especially for students from rural or socially disadvantaged backgrounds. As career paths become increasingly nonlinear and mobility-driven, educators and policymakers must promote equitable access to high-quality internships that intentionally cultivate employability skills to enhance students' perceived job success and career mobility. Vocational institutions can address geographic disparities by embedding soft and technical skill-building strategies into their curricula, thereby enabling students to better navigate the school-to-work transition and ensuring that graduates are equipped with the competencies necessary for sustainable career success in an evolving and competitive labor market.

Originality/Value-This paper makes an original contribution by empirically examining the dynamic interaction between individual employability skills and contextual factors through two-wave longitudinal data. It offers nuanced insights into how both the initial endowment and subsequent development of employability skills during internships predict subjective and objective career outcomes. Situated within the context of China's urban–rural divide, the findings demonstrate that students from rural areas can mitigate

structural disadvantages through targeted skill cultivation. Moreover, the study underscores the role of internships as vital platforms for developing employability competencies. These insights advance career theory, inform education policy, and guide the design of more equitable vocational curricula.

Keywords: Employability skills, career success, geographic location, job success, pay, job mobility, internship, China

Paper Type: Research Paper

1. Introduction

The economic slowdown since the COVID-19 outbreak, coupled with uneven recoveries, has directly and indirectly impacted young job seekers worldwide (Borgschulte & Chen, 2022). Study has indicated that young adults experience a mismatch between their skills and the demands of their jobs to varying degrees over the course of their careers (DeLoach et al., 2022; Takase et al., 2012), to better prepare students for successful employment, employability skills need to be taught by schools (Kholifah et al., 2025).

Employability skills refer to general and nontechnical competencies necessary for performing jobs across all types and levels (Ju et al., 2012). The literature has shown that employers seek to recruit graduates who possess not only technical skills, but also non-technical skills, such as effective communication, teamwork, and problem-solving abilities (Tan & Laswad, 2015). These nontechnical competencies, frequently referred to as employability skills, are essential for achieving success in the workplace (Akkermans & Tims, 2017; O'Connell et al., 2015; Watty et al., 2012) and have been argued to increase work-related outcomes and assist people adapt to changes and improve career opportunities in the workplace (Mohd et al., 2012). Recent research highlights that soft skills including communication, teamwork, leadership, and problem-solving are essential for facilitating transitions between educational programs and the labour market in China's Higher Vocational Education and Training (HVET) (Liu, 2025). Similarly, Germany's dual vocational education and training system emphasizes the cultivation of reflective, civic, and transversal competencies that complement workplace learning and enhance adaptability (Haasler, 2020). Studies in Indonesia further identify digital communication and collaboration as key mediating factors in promoting digital creativity and production among vocational graduates

(Kholifah et al., 2025).

It can be reasonably inferred that employability skills play a pivotal role in equipping graduates for dynamic work environments and may positively influence their career success. To examine the relationship of employability skills to career success, the data was collected from 464 secondary vocational school students from urban and rural China at two time points (before and after their internships) to test our hypotheses. As internship can support a successful school-to-work transition and improve graduates' employment outcomes (Lo Presti et al., 2023). It's a relevant context to enable individuals to develop skills, enhance human capital and acquire workplace experiences (Guile & Lahiff, 2013; Haasler, 2020).

The main contributions of this study are as the follows. First, scholars argued that employability is inherently contextual (Forrier et al, 2018), and further investigation is needed to understand the complex interaction between individual and context (Lent & Brown, 2017). Our findings indicate that the endowment and development of employability skills of vocational school students have a substantial influence on perceived job success, while an increase in employability skills is associated with greater job mobility during the internship. The human capital can be built through internship experience (Forrier et al.,2009; Kholifah et al., 2025) and this was observed in a sample of socially underrepresented secondary vocational school students.

Second, according to the Conservation of Resources theory, resources can be interacted, sustained, and reinforced one another. This explanation may be useful in understanding that geographic location only moderates the relationship between employability skills and perceived job success. Vocational students who gain resources during their internship experiences will be better positioned to perceive their employability skills, regardless of their urban or rural school background. Students

from rural schools can overcome the geographical disadvantages they face and achieve greater career success if they possess higher employability skills during the internship.

Lastly, researchers have emphasized the need to examine the antecedents and outcomes of objective and subjective career success, particularly the conditions under which they align or diverge (Spurk et al., 2018). Yet, few studies have tracked short-term changes in career success or clarified how internships foster learning and skill development during the school-to-work transition (Gao-Urhahn et al., 2016; Lo Presti et al., 2023). The present findings advance career theory by highlighting how vocational education systems, within distinct institutional and cultural contexts, cultivate transferable competencies that enhance career readiness and success in an increasingly dynamic labour market (Liu, 2025; Mayrhofer et al., 2016)

2. Theory and hypotheses

2.1 Quasi-employment internship as a context

Scholars have recently advocated for a more nuanced understanding of employability, recognizing the individual (i.e, agency) and the context (i.e. structure) both play a role in shaping perceptions of employability (Delva et al., 2021; Fugate et al., 2004). Based on this consideration, this study examines how perceived employability skills of secondary vocational school students may influence their subjective career success (perceived job success) and objective ones (job mobility and pay) during a one-year quasi-employment internship.

In China, historically, vocational Education and Training (VET) has been viewed as having lower status and being inferior to general education institutions (Hao & Pilz, 2021; Woronov, 2011; Wu, 1996). The "National Vocational Education Reform Implementation Plan" has ushered in a new phase characterized by a clear professional orientation and a systematic structure (State Council, 2019). Rural vocational education

and training (VET) has been integrated into China's rural revitalization strategy to reduce urban–rural disparities in employment and income (Wang et al., 2023). Vocational school graduates are regarded as a major workforce to meet labor demand in China, internships are regarded as an essential part of vocational education (Hou et al., 2020) and more than half of the vocational school students in China have participated in a quasi-employment internship (Chan, 2017; Chen, 2018).

This structure can be categorized into two types: secondary vocational education and training, as well as higher vocational education and training. Vocational students typically attend three types of internships: observing, participatory, and quasi-employment. Studies indicate that internships can serve as a mechanism to support a successful transition from school to work and may influence graduates' long-term career success (Abele, & Spurk, 2009; Callanan & Benzing, 2004; Helyer & Lee, 2014; Steiner et al., 2021) and employment outcomes (Lo Presti et al., 2023; Rose, 2013; Wan et al., 2012). In the first two types, students merely observe or partially participate in production under the guidance of skilled workers.

However, quasi-employment internships require China's vocational students to perform independent and employee-like roles with workloads and responsibility while retaining their student identity (Hou et al., 2020; Ministry of Education of China, 2016). Cross-national studies have demonstrated that internships significantly strengthen the school-to-work transition by cultivating practical skills and career adaptability. In Germany's dual VET system, internships are tightly integrated into curricula to foster transferable and reflective competencies (Haasler, 2020). The design of on-the-job tasks and structured workplace learning contribute to human capital accumulation and early career success (Busse & Maué, 2025; Friedrich, 2021; Guile & Lahiff, 2013). In Japan, vocational secondary education is empirically linked to better entry-level job outcomes

compared to general high school graduates (Ogawa, 2025). Comparative evidence underscores that internships constitute a core component of vocational education and training (VET) and serve as transitional mechanisms.

2.2 Employability skills, career success and geographic location of school

Human capital can be defined as knowledge, information, ideas and skills of individuals (Becker, 2002) and a major potential impact on career success (Bagdadli & Gianecchini, 2019; Ng et al., 2005; Spurk et al., 2018). At the individual level, human capital represents the accumulation of a person's skills, abilities, and knowledge, which have a significant impact on individual job satisfaction, job success, salary, promotion and mobility (Hanushek &Woessmann, 2008; Metz &Tharenou, 2001; Ng et al., 2005; Rode et al., 2008).

In this study, human capital is defined as the accumulation of abilities, knowledge, and skills that individuals develop over time to enhance career attainment and success (Eby et al., 2003). It is conceptualized as a set of employability skills, which are essential for securing employment opportunities (Abas & Imam, 2016) and driving career development and success in the contemporary labour market (Barnett, 2006; De Vos et al., 2011; Hogan et al., 2013; Katharina, 2012). Recent research reflects a shift from traditional skill sets such as communication, teamwork, and problem-solving toward future-oriented competencies that emphasize digital literacy, adaptability, and self-leadership (Ehlers, 2024). Some scholars caution against marginalizing enduring soft skills, which remain foundational for interpersonal effectiveness (Peretz & Nakash, 2025). Additionally, emerging frameworks stress the importance of localizing skills to align with regional labor demands and cultural contexts, and challenge one size fits all models (Lee & Nie, 2024).

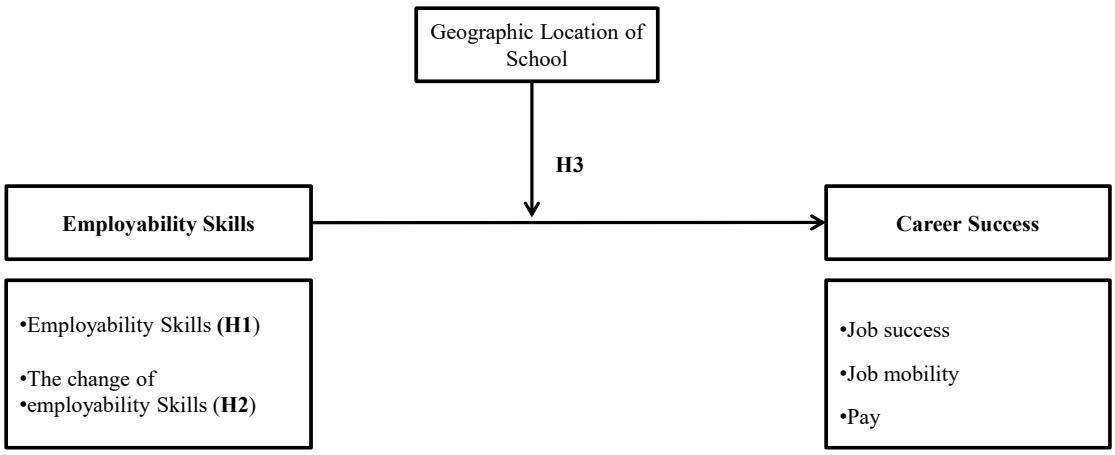
The value of human capital is influenced by institutional and social contexts,

which shape individuals' decisions and actions. Evidence shows that internships enhance human capital by developing skills and sense-making abilities essential for effective labor market participation (Guile & Lahiff, 2013; Helyer & Lee, 2014; Lo Presti et al., 2023). According to social cognitive career theory, individuals form career perceptions through shared social standards (Lent & Brown, 2017). Vocational students' engagement with workplace and social contexts contributes to human capital formation, and subsequent their career success.

An individual's human capital is shaped by the institutional and social environments in which they make decisions. Contextual factors such as labor market conditions, wage structures, and institutional support influence the relationship between human capital development and individual returns (Crook et al., 2011; Klees, 2016). Research further identifies migration status and city's institutional capital as moderators of human capital's impact on career success (Guo & Baruch, 2021). Geographic location also affects education and employment through disparities in socioeconomic resources, job opportunities, and training access (Anyon, 2003; Graves et al., 2014; Newell & Looser, 2018; Paredes & Rodriguez, 2021). Thus, Examining the role of geographic location is critical to understanding variations in human capital and career outcomes.

The conceptual model was developed based on human capital and career theory and assessed how secondary vocational school students' employability skills including social skills, resource management skills, basic skills, and future work self salience (FWSS) and how these skill changes are associated with their perceived job success, job mobility, and pay during their quasi-employment internship. An overview of the expected relationships is shown as Figure 1-1, and our hypotheses are introduced in subsequent sections.

Figure 1-1: Conceptual model of the relationships between employability skills, career success and geographic location of the school



Source: Author's own work

2.3 Employability skills and career success

Career success can be measured by subjective criteria, including psychological feelings or work-related experiences such as job satisfaction (Dries et al., 2008), and objective criteria, including work-related outcomes such as pay, job mobility, employment position and promotion (Stumpf & Tymon, 2012). The framework of employability skills refers to the basic skills necessary for employment, including communications, teamwork, problem solving, self-management, and so forth (DEST, 2002). Studies have highlighted that more generalist and transferable skills can increase employability and lead to more fulfilling careers (Ademiluyi, 2019). Most students from secondary vocational schools are likely to be employed as blue-collar and entry-level workers during their quasi-employment internships. For them, the more elementary skills, including social skills, resource management skills, basic skills and future work self salience (FWSS) as a proactive cognitive ability, are essential employability skills in the context of China (Froese & Hong, 2022).

Prior research shows that human capital positively influences career success, the skill development linked to greater career satisfaction and perceived marketability (De

Vos et al., 2011; Eby et al., 2003; Kuijpers et al., 2006; Metz & Tharenou, 2001; Van Dierendonck & Van der Gaast, 2013). The career-resources model further posits that work experience enhances human, social, and psychological capital, which in turn drives perceived employability and skills (Ebner et al., 2021; Hirschi, 2012). For vocational students, internships provide experiential learning and foster skill growth and human capital accumulation (Guile & Lahiff, 2013; Helyer & Lee, 2014). Expanding multiple skill domains can increase job satisfaction and career prospects (Stone et al., 2021). Consistent with human capital and career theories (Arthur et al., 2005; Becker, 2002), individuals' varying efforts to develop their competencies are differentially rewarded in the labor market through outcomes such as higher pay and career mobility (Baruch & Lavi-Steiner, 2015; Connelly et al., 2016; Ng et al., 2005). Following this rationale, the employability skills that individuals develop and acquire during their internship experiences are associated with their career success during their internship. This leads to the following hypotheses:

Hypothesis 1a–c: Employability skills will be positively associated with interns' a) job success, b) job mobility, and c) pay.

Hypothesis 2a-c: Changes in employability skills will be positively associated with interns' a) job success, b) job mobility, and c) pay.

2.3 The role of geographic location of school

Differences between rural and urban school location are not limited to population size but also include factors such as socioeconomic status, demographics, beliefs, and values (Newell & Looser, 2018). The difference in location characteristics is an important source of wage variation (Moretti, 2008), employee satisfaction, and job mobility (Cho et al, 2014; Sung-Hyun et al., 2014). Studies indicate that there is a different demand for occupations between border and non-border cities, and there are disparate economic

characteristics and needs in terms of the jobs available and the required employability skills (Paredes & Rodriguez, 2021).

Previous research has shown how the interplay among social surroundings, environment, and an individual's knowledge, skills, and competencies can affect career success. The geographic location of schools or districts influences on socioeconomic disparity, availability of resources, education outcomes, curriculum choices and employment (Anyon, 2003; Paredes & Rodriguez, 2021; Safer-Lichtenstein et al., 2020; Yao et al., 2019). However, most career studies are conducted from Western perspectives; thus, researchers have called for empirical examinations of career success in different cultural contexts (Mayrhofer et al., 2016; Sullivan & Baruch, 2009) and have investigated the role of time and geographical locations in career success (Tams & Arthur, 2007; Yao et al., 2019).

According to Conservation of Resources (COR) theory, individuals are motivated to acquire, maintain, and accumulate resources for prospective use (Hobfoll, 1989, 2011). Those with greater access to resources are better positioned to gain additional ones, whereas those with fewer are more vulnerable to loss (Hobfoll, 2011). Individuals also actively seek environments that support further resource development. In China, disparities between urban and rural regions extend beyond educational quality and resources (Zhang, 2017), but also unequal employment opportunities and human capital accumulation.

Cities and skills are entwined (Glaeser & Maré, 2001), urban areas with higher levels of human capital tend to exhibit stronger employment and productivity growth (Shapiro, 2006). Larger and more skilled cities offer richer learning environments, enabling workers to acquire greater competencies and contributing to faster regional development (Glaeser & Resseger, 2009). Urban areas thus provide broader access to

knowledge, employment, and internship opportunities than rural regions. Consequently, students in urban vocational schools benefit from more diverse and higher-quality internship options. Those with stronger employability skills are better positioned to leverage these environments and enhance their learning experiences to secure higher paying and better-fitting internships.

It is more beneficial for the endowment of employability skills of students from urban vocational schools. In contrast, less human capital and fewer options are offered for rural vocational schools' students to access resources, and they need to take what is being offered. The dissimilarities between school location characteristics may lead to different levels of internship success between rural and urban vocational students. Thus, the geographic location of the school might sway the relationship between students' employability skills and internship success.

Hypothesis 3a–c: Geographic location of school moderates the relationship between interns' employability skills and a) perceived job success, b) job mobility, and c) pay. For interns from urban vocational schools, their employability skills will have a stronger impact on their a) perceived job success, b) job mobility, and c) pay than it will for those from rural vocational schools.

Hypothesis 4a–c: Geographic location of school moderates the relationship between changes in interns' employability skills and a) perceived job success, b) job mobility, and c) pay. For interns from urban vocational schools, the changes in their employability skills will have a stronger impact on their a) perceived job success, b) job mobility, and c) pay than it will for those from rural vocational schools.

3. Methods

3.1 Participants and procedures

This study was reviewed and approved by the principal and the committee of the participating vocational schools. All participants provided informed consent prior to participation. The research was conducted in accordance with the ethical standards of the institutional and national research committees. Permission was obtained to enter classrooms accompanied by the class teacher to inform students about the study and distribute consent forms and paper-based surveys. Additional permission was obtained from the participants' schools and internship organizations to facilitate data collection.

Students at the end of their second year of study were invited to participate in our survey (T1). Because it is compulsory in vocational schools in China, these students were assigned to participate in one year of an internship in their third year of schooling. During their quasi-employment internships, most students from secondary vocational schools are employed as entry-level workers. They are expected to complete basic tasks and provide administrative services at companies. I invited the same students to take surveys again approximately one year later (T2) toward the end of their internship experience.

The paper-based surveys were collected at schools, factories and organizations, and then were paired T1 and T2 surveys based on QQ ID, a common communication software in China. At T1, with the endorsement of the headmaster of vocational schools, the schoolteachers distributed a total of 1268 surveys during classes. 1262 surveys were received (response rate of 99.52%) and retained 1146 complete and valid responses. The hierarchical culture in China and survey distribution during class hours explains the high response rate. Of these respondents, 306 (26.7%) were female, and the average age was 20.55 years (SD=.977). The same respondents were contacted for T2, received

548 valid responses (48.8% response rate), and retained 464 valid responses. Of these respondents, 326 (70.3%) were male and 138 (29.7%) were female, and the average age was 20.64 years (SD=.806). The response rate was low because it was difficult to reach all students, as they were interning at a wide range of companies, factories, and organizations. Among the respondents, 157 (33.8%) completed their internships at state-owned enterprises, 165 (35.5%) at Chinese private companies, and 142 (30.7%) at Sino-foreign joint ventures or wholly foreign-owned enterprises.

The comparison of employability skills of the T1 and T2 respondents via t-tests and found that there is a statistical difference on the level of social skills, basic skills and future work self-salience (FWSS) at T1, and a statistical difference between the level of social skills and basic skills at T2 between males and females.

3.2. Measures

Drawing from prior research, the original survey was established in English, and then two bilinguals translated it into Simplified Chinese using a back-translation procedure (Schaffer & Riordan, 2003). The two bilingual individuals are professional translators who specialize in social science and management studies.

3.3. Dependent variables

Perceived job success was measured using the scale of subjective career success by Gattiker and Larwood (1986). Six items were included from the original scale: “I have enough responsibility on my job,” “I am fully backed by my managers in my work,” “I am in a job which offers me the chance to learn new skills,” “I am happiest when I am at work,” “I am dedicated to my work,” “I am in a position to do mostly work that I really like,” Responses were captured using a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), on which higher scores indicated higher job success. The reliability of the scale was high, with a Cronbach’s alpha of 0.927.

Job mobility is defined as a change of employer (Groot &Verberne, 1997; Lam et al., 2012). In China, vocational school students are typically assigned to internship placements by their schools. Highly capable students are often able to find and switch to other employers. Thus, in this context, job mobility was considered an objective criterion of success. To measure job mobility, the respondents were asked, "How many times have you changed your job to different employers during this year's internship?" Job mobility was measured as follows: 0 =zero, 1= once, 2 = twice or more.

Pay was accessed using each respondent's monthly contracted pay and measured across three categories (1 = below 1,999 RMB per month; 2 = 2,000 RMB to 3,000 RMB per month; and 3 = 3,001 RMB or more per month).

3.4. Independent variables

The scale of employability skills includes social skills, resource management skills, basic skills, and FWSS (Froese & Hong, 2022). Please refer to Table 3-1 for the results of Confirmatory Factor Analysis (CFA) for Measurement Model based on the T1 sample (n_1 = 300). It shows that the factor loading for all items exceeded the recommended level of .50 (Hair et al., 2006). The resulting alpha value was .88 for each skill (social skills, resource management skills, basic skills, and FWSS), which was well above the acceptable threshold of .70 suggested by Babbie (1992). Convergent validity was assessed based on the factor loadings, composite reliability, and variances extracted (Hair et al., 2006). To strengthen the credibility and robustness of the findings, another confirmatory factor analysis (CFA) was conducted using the T2 sample (n = 464). The results indicate that the measurement model remained stable across samples, as presented in Appendix 1 and Appendix 1-1.

Geographic location of school was measured by a dummy variable (0 = adolescents from vocational school in Sichuan region, 1 = adolescents from vocational

school in Shanghai city).

Table 3-1: Results of Confirmatory Factor Analysis (CFA) for Measurement Model (T1: Sample Size: 300)

				Convergent validity	
Construct	Item	Internal reliability Cronbach alpha	Factor loading	Composite reliability	Average variance extracted
Social Skills	I can understand the working document on how work should be done through interaction with others.	.88	.82	.88	.65
	I can interpret the questions and respond with suitable answers.		.87		
	I can pay attention to other's reactions and support others with responses and feedback.		.81		
	I can adjust thoughts and responses to others' actions and advice.		.72		
Resource management Skills (Allocate time)	I can perform my tasks in a specified order within time limits	.88	.83	.88	.72
	I can coordinate time for different activities across projects or processes.		.89		
	I can establish deadlines for a project or process and follow the task schedules.		.83		
Basic Skills	I can organize related ideas and present them in an articulate and compelling fashion in writing.	.88	.83	.89	.72
	I can write professional reports and proposals with appropriate wordings and expression.		.87		
	I can write tasks report with correct grammar and professional language suitable to the context.		.86		
Future Work Self Salience	I can easily imagine my future.	.88	.64	.87	.63
	The mental picture of the future is very clear.		.83		
	The future is very easy for me to imagine.		.88		
	I am very clear about who and what I want to become in my future work.		.82		

Note: n=300. I asked respondents to self-assess the extent of their employability skills. For each item, respondents had to select between seven options ranging from 1 = very strongly disagree to 7 = very strongly agree.

Source: Froese & Hong, 2022 and Author's own work

3.5. Control variables

Several known predictors of career success, including gender (Gutman & Schoon, 2012), number of working hours (Ganzeboom & Treiman, 1996), and age (Van Der Heijden et al., 2009) were controlled. Previous studies have found that work hours affect career success (Lee et al., 2015). The type of company in T2 was controlled, since wage dispersion varies across different industries (Hibbs & Locking, 2000; Montgomery, 1991) and is influenced by the type and the size of companies (Brown & Medoff, 1989). The type of company was measured in three levels (1= state-owned enterprise, 2 = Chinese private companies, 3 = Sino-joint ventures and wholly owned foreign companies). Gender was measured by a dummy variable (0 = male, 1 = female), age was measured in years, and work hours were measured by total daily working hours.

4. Results

4.1 Data and descriptive statistics

Table 4-1 provides a descriptive overview of our data and shows the correlation between each variable.

Table 4-1: Means, standard deviations (SD), and correlations of study variables

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Age	20.64	0.8																
2	Gender dummy	0.3	0.45	.04															
3	Work Hour	8.77	2	-.02	.06														
4	Company type	1.97	0.8	.01	-.06	-.13**													
5	Geographic location	0.92	0.26	.14**	.12*	-.17**	-.12**												
6	Perceived job success	5.46	1.23	.01	-.13**	-.10*	.08	.19**											
7	Pay	1.90	0.71	.06	-.07	.22**	-.01	.03	-.02										
8	Job mobility	1.44	0.72	.05	.09	-.04	.10*	.11*	.10*	.01									
9	Social skills (T2)	5.47	1.31	-.05	-.13**	-.03	-.06	.16**	.18**	-.03	-.01								
10	Resource management skills (T2)	5.52	1.28	-.00	.01	-.03	-.08	.12*	.15**	-.04	-.03	.65**							
11	Basic skills (T2)	5.17	1.43	-.03	-.11*	-.02	-.12*	.20**	.16**	.04	-.07	.58**	.57**						
12	Future work self salience (T2)	5	1.39	-.01	-.15**	-.03	-.10*	.08	.07	-.01	-.09*	.41**	.44**	.48**					
13	Social skills (T2-T1)	-0.03	1.52	.06	.01	-.04	.11*	-.03	.39**	.01	.10*	-.54**	-.35**	-.24**	-.26**				
14	Resource management skills (T2-T1)	0.01	1.56	.04	-.07	-.02	.11*	.04	.45**	.04	.12**	-.35**	-.59**	-.29**	-.27**	.68**			
15	Basic skills (T2-T1)	0.56	1.68	.05	-.01	-.05	.14**	.06	.42**	.02	.13**	-.31**	-.33**	-.59**	-.31**	.57**	.66**		
16	Future work self salience (T2-T1)	0.18	1.64	.07	.05	-.01	.09*	.15**	.43**	.13**	.15**	-.23**	-.22**	-.21**	-.57**	.46**	.48**	.48**	

Notes: n= 464, *P< 0.05, **P< 0.01

Source: Author's own work

The path modeling was conducted by using the AMOS software package (version 24.0) and applied the maximum likelihood (ML) estimator, bootstrap confidence interval, to test our hypotheses (Table 4-2). *Hypothesis 1a* proposed that adolescent's employability skills at T2 would be positively associated with perceived job success. Indeed, the results indicated that social skills (β = .573, p = .001, R^2 = .391, 95% CI = .448, .693), resource management skills (β = .658, p = .001, R^2 = .480, 95% CI = .554, .754), basic skills (β = .637, p = .001, R^2 = .445, 95% CI = .529, .738), and FWSS (β = .547, p = .001, R^2 = .350, 95% CI = .434, .655) contributed to perceived job success among adolescents.

Hypothesis 1b proposed that adolescent's employability skills at T2 would be positively associated with job mobility. The results indicated that only social skills (β = .089, p = .042, R^2 = .044, 95% CI = .002, .171) and resource management skills (β = .110, p = .008, R^2 = .044, 95% CI = .027, .194) contribute to job mobility. Thus, H1b was partly supported.

Hypothesis 1c proposed that adolescent's employability skills at T2 would be positively associated with pay. The results indicated that only FWSS contributed to pay (β = .135, p = .003, R^2 = .092, 95% CI = .045, .231). Thus, H1c was partly supported.

Hypothesis 2a proposed that the change in adolescent's employability skills (T2–T1) would be positively associated with perceived job success. Indeed, the results indicated that social skills (β = .395, p = .001, R^2 = .233, 95% CI = .292, .501), resource management skills (β = .430, p = .001, R^2 = .248, 95% CI = .330, .534), basic skills (β = .404, p = .001, R^2 = .235, 95% CI = .310, .499), and FWSS (β = .417, p = .001, R^2 = .249, 95% CI = .319, .511) contributed to perceived job success among adolescents. Thus, H2a was supported.

Hypothesis 2b proposed that a change in adolescent's employability skills (T2–T1) would be positively associated with job mobility. Indeed, the results indicated that social skills (β = .086, p = .049, R^2 = .037, 95% CI = .001, .171), resource management skills (β = .111, p = .012, R^2 = .042, 95% CI = .033, .196), basic skills (β = .107, p = .017, R^2 = .042, 95% CI = .022, .198), and FWSS (β = .117, p = .031, R^2 = .042, 95% CI = .011, .211) contributed to adolescent job mobility. Thus, H2b was supported.

Hypothesis 2c proposed that the change in adolescent's employability skills (T2–T1) would be positively associated with pay. The results indicated that only the increase in FWSS contributed to pay (β = .122, p = .006, R^2 = .099, 95% CI = .041, .206). Thus, H2c was partly supported.

Table 4-2: The result of bootstrap confidence interval for the relationship between adolescent's employability skills and career success

			Predictor of Internship Success											
			Perceived Job Success				Job Mobility				Pay			
Independent Variables	Means ±SD		β	R^2	95% CI	P	β	R^2	95% CI	P	β	R^2	95% CI	P
	Time 2	Time 2-Time1												
Social skills	5.47 ±1.31		.573	.391	〔.448, .693〕	0.001**	.089	.044	〔.002, .171〕	0.042*	-.025	.076	〔-.113, .071〕	0.629
Resource management skills	5.52 ±1.28		.658	.480	〔.554, .754〕	0.001**	.110	.044	〔.027, .194〕	0.008*	.003	.077	〔-.095, .094〕	0.975
Basic skills	5.17 ±1.43		.637	.445	〔.529, .738〕	0.001**	.066	.036	〔-.030, .157〕	0.222	.053	.078	〔-.045, .152〕	0.310
Future work self salience	5.00 ±1.39		.547	.350	〔.434, .655〕	0.001**	.072	.037	〔-.032, .166〕	0.164	.135	.092	〔.045, .231〕	0.003*
Change of social skills		-0.03 ±1.52	.395	.233	〔.292, .501〕	0.001**	.086	.037	〔.001, .171〕	0.049*	-.012	.076	〔-.079, .101〕	0.814
Change of resource management skills		0.18 ±1.56	.430	.248	〔.330, .534〕	0.001**	.111	.042	〔.033, .196〕	0.012*	.029	.075	〔-.066, .124〕	0.531
Change of basic skills		0.56 ±1.68	.404	.235	〔.310, .499〕	0.001**	.107	.042	〔.022, .198〕	0.017*	.014	.042	〔-.080, .113〕	0.780
Change of future work self salience		0.18 ±1.64	.417	.249	〔.319, .511〕	0.001**	.117	.042	〔.011, .211〕	0.031*	.122	.099	〔.041, .206〕	0.006*

Notes: n= 464, CI=confidence interval, *P< 0.05, **P< 0.01

Source: Author's own work

The result of the moderation effect is shown in Table 4-3. Hypothesis 3a proposed that geographic location of the school would moderate the relationship between adolescents' employability skills and internship success. For interns from urban vocational schools, employability skills tended to have a stronger impact on internship success than they did for students from rural vocational schools. The results indicated that geographic location of the school only moderated the relationship between resource management skills (β = .057, p = .033, 95% CI =.004, .118), basic skills (β = .128, p = .001, 95% CI = .050, .203), FWSS (β = .078, p = .038, 95% CI = .003, .156), and perceived job success, whereas it had no moderating effect on social skills and perceived job success. Thus, H3a was partly supported.

Hypothesis *3b* proposed that the geographic location of the school would moderate the relationship between the change in intern's employability skills and internship success. For interns from urban vocational schools, the change of their employability skills tended to have a stronger impact on internship success than they did for students from rural vocational schools. The results indicated that the geographic location of the school only moderated the relationship between the change of FWSS (β = .122, p = .001, 95% CI = .049, .183) and pay. Thus, H3b was partly supported.

Table 4-3: The result of bootstrap confidence interval for the moderating effect of the geographic location of the school between adolescent's employability skill and career success

			Predictor of Internship Success								
			Perceived Job Success			Job Mobility			Pay		
Independent Variables	Means ±SD		β	95% CI	P	β	95% CI	P	β	95% CI	P
	Time 2	Time 2-Time1									
Social skills*Geographic location	5.47 ±1.31		.019	〔-.072, .132〕	0.670	.045	〔-.096, .159〕	0.510	.037	〔-.059, .133〕	0.422
Resource management skills*Geographic location	5.52 ±1.28		.057	〔.004, .118〕	0.033*	.034	〔-.011, .082〕	0.140	.061	〔-.020 .125〕	0.114
Basic skills*Geographic location	5.17 ±1.43		.128	〔.050, .203〕	0.001**	.002	〔-.070, .070〕	0.935	-.016	〔-.108, .075〕	0.748
Future work self salience*Geographic location	5.00 ±1.39		.078	〔.003, .156〕	0.038*	-.005	〔-.092, .055〕	0.850	.070	〔-.010, .140〕	0.089
Change of social skills*Geographic location		- 0.03 ±1.52	.001	〔-.086, .085〕	0.985	.010	〔-.078, .1701〕	0.784	.050	〔-.009, .153〕	0.101
Change of resource management skills*Geographic location		0.18 ±1.56	.004	〔-.054, .084〕	0.926	.015	〔-.072, .103〕	0.729	.024	〔-.089, .102〕	0.604
Change of basic skills*Geographic location		0.56 ±1.68	.034	〔-.024, .114〕	0.288	.052	〔-.009, .134〕	0.082	.067	〔-.022, .139〕	0.118
Change of future work self salience*Geographic location		0.18 ±1.64	-.022	〔-.066, .072〕	0.989	.038	〔-.010, .097〕	0.122	.122	〔.049, .183〕	0.001*

Notes: n= 464, CI=confidence interval, *P< 0.05, **P< 0.01

Source: Author's own work

5. Discussion

These results indicate that all dimensions of employability skills contribute significantly to adolescents' perceived job success, while only two out of four dimensions (social skills and resource management skills) are positively associated with job mobility, and only one dimension (FWSS) is positively associated with pay. Taken together, the endowment of adolescents' employability skills has a more substantial influence on perceived job success and is less important for objective criteria such as pay. This pattern suggests that perceived success depends more on self-evaluated competencies than on externally regulated outcomes such as wages. Comparable evidence from Germany shows that structured apprenticeship tasks enhance initiative and responsibility (Friedrich, 2021) and that civic and transversal skills underpin adaptability (Haasler, 2020), both aligning with stronger subjective career outcomes. In Japan, vocational pathways yield early employment advantages but limited wage differentiation (Ogawa, 2025). Similarly, China's regulated wage system for interns and low entry-level pay structures may constrain objective career rewards despite skill gains. Thus, the findings reveal that while employability skills foster perceived competence and mobility, institutional wage mechanisms temper their immediate financial returns in China's vocational labor market.

As for changes in employability skills, these results indicate that the development of employability skills contributes significantly to adolescents' perceived job success and job mobility, yet only the change in FWSS is positively associated with pay. Part of our findings align with prior research showing that human capital accumulation positively predicts career success and that employability skills enhance subjective career outcomes (Metz & Tharenou, 2001). Similarly, recent evidence from Swiss VET apprenticeships indicates that that proactive personality is directly associated with

better job fit and work satisfaction (Zambelli et al., 2024), reinforcing the role of individual agency in shaping employability and career development (De Vos & Soens, 2008). The positive link between vocational students' FWSS and pay corresponds with prior findings that proactive personality traits are associated with salary (Seibert et al., 1999, 2001; Zhang et al., 2022).

The results of our moderating analysis provide only limited support for the influence of geographic location, pointing out the gap for VET and internship contexts. The findings of the moderating effect at T2 indicate that urban and rural school locations only moderate the relationship between adolescents' employability skills and perceived job success. Regarding interns from urban vocational schools, their employability skills have a stronger impact on their perceived job success than do those of students from rural schools. However, the geographic location of the school has little relevance for objective internship success. The findings indicate that students from secondary vocational schools can tap into resources available in their internship environments and obtain and accumulate resources for their future prospects, such as job mobility and pay.

5.1 Theoretical Contributions

This study makes three main contributions. Career studies in the Chinese context is a limited area but one that is fast developing (Guo & Baruch, 2021) with an emphasis on career choice and generational differences. Study recommends systematically examining the antecedents and outcomes of objective and subjective career success, particularly the contextual conditions under which they converge or diverge (Spurk et al., 2018). From an agentic perspective, individuals can proactively self-direct their careers to enhance employability (Crisp & Powell, 2017; Seibert et al., 2006). The findings indicate that, in the Chinese context, the endowment and development of

employability skills have a substantial influence on perceived job success, while an increase of employability skills is related with greater job mobility. This study advances career and human capital theory by clarifying how vocational students' employability skill development differentially influences subjective and objective career success.

Second, this study contributes to career theory by extending research across diverse cultural contexts (Tams & Arthur, 2007) and supporting resource gain and loss cycles, wherein individuals with greater resources more readily accumulate additional ones, while those with fewer are more vulnerable to depletion (Hobfoll, 2011). Since China is a non-Western context with a significant rural–urban divide, researchers have indicated the importance of exploring the role that cities themselves may play in their inhabitants' careers (Guo & Baruch, 2021). This study examines the employability skills and career success of vocational school students from urban (Shanghai) and rural (Sichuan) regions and explores the moderating effect of school location on this relationship. Our findings reveal that urban and rural disparities influence only perceived job success and pay, suggesting that skill accumulation during internships can offset contextual disadvantages. Despite persistent geographic inequalities (Altonji et al., 2014; Anyon, 2003; Safer-Lichtenstein et al., 2020), vocational students who actively develop employability skills are better positioned to achieve career success regardless of their urban or rural background.

Third, there are a few internship studies that focus on undergraduate students (Gault et al., 2000), and most career theories and concepts have been developed around urban occupations (Guo & Baruch, 2021). Only a few existing studies have analyzed short-term changes in career success and its relationship over time (Judge et al., 2010; Wang et al., 2012; Zacher, 2015). This study examines how individuals form their career perceptions by using two-wave survey data. The empirical evidence shows that

vocational school students as individual agents interact with their internship environment, this may lead them to experience gains and losses that consequently shape their career success. Both the endowment and development of employability skills influence their subjective and objective career success over time, which sheds light on the career development between urban and rural young workforces in culturally different contexts.

5.2 Practical Implications

Frist, the findings underscore the critical role of employability skills development during internships, particularly for students from rural or socially disadvantaged backgrounds. These findings highlight the need for targeted interventions that ensure equitable access to high quality internships. Empirical evidence reveals persistent inequities in internship arrangements, where vocational students are often assigned repetitive factory tasks and positioned within lower-status tracks (Brown & DeCant, 2014; Xia, 2019). In China, the Labor Contract Law does not apply to student interns (Chan et al., 2015). Vocational Education Law (2022) has established a legal framework to improve internship quality and status. Similarly, Germany's Vocational Training Act (BBiG) mandates standardized training content and contractual protection (Haasler, 2020). As career trajectories become increasingly nonlinear and mobility-driven, empowering vocational students through equitable access to high-quality internships can enhance their skill development and employability.

Second, the endowment of employability skills is less important for objective criteria, whereas the increase in adolescents' FWSS contributed to pay. This suggests that aspirations toward a work-based identity play a significant role in earnings and that China's internship wage system extends beyond individual competencies. In Germany, Vocational Training Act (BBiG) establishes a legally mandated minimum training

allowance to ensure equitable compensation for apprentices (Neuber-Pohl, 2021). It underscores the need for stronger governance to promote equitable and transparent internship compensation.

Lastly, prior research shows that school geography shapes educational and employment outcomes, socioeconomic and curricular disparities (Anyon, 2003; Paredes & Rodriguez, 2021; Safer-Lichtenstein et al., 2020). However, our moderating analysis found only partial support, geographic location influenced perceived job success but not job mobility or pay. The findings indicate that rural students can mitigate geographic disadvantages by developing employability skills through education and internship. Integrating soft and technical skill development into vocational curricula offers a strategic approach for addressing regional disparities. Recent research highlights the policy evolution of school–enterprise cooperation in China's VET system, emphasizing government initiatives that foster regional collaboration and cooperative training mechanisms (Zhou & Xu, 2023). However, compared to countries with mature dual VET systems, Asian nations such as China, Japan, Singapore, and Korea demonstrate weaker education and employment linkages (Chen et al., 2024). Policymakers should strengthen these connections by developing cross-regional internship exchange programs and targeted resource-sharing mechanisms between schools and enterprises in rural areas to enhance employability and facilitate smoother school-to-work transitions.

5.3 Limitations and suggestions for future research

This study has several limitations. First, it measured internship success using perceived job success, pay, and job mobility, yet job satisfaction, employment position, and internal mobility are other common indicators of career success (Eby et al., 2003; Ng et al., 2005). Moreover, given that individuals often pursue psychological success

through voluntary mobility (Ng et al., 2005), future research should explore various forms of job mobility, including internal-upward and internal-lateral movements. Job changes within the same organization are more likely to occur when the employment relationship is of shorter rather than longer duration. The mobility experiences of an unskilled young workforce may differ from those of skilled and professional workers.

Second, our findings indicate that social, resource management, and basic skills are not associated with pay; only adolescents' FWSS is positively linked to earnings. This contrasts with prior research suggesting that individual skills are key determinants of wage variation and earnings (Combes et al., 2008; Hanushek & Woessmann, 2008). The discrepancy may reflect the influence of cultural and institutional factors shaping internship pay in China. Studies have pointed out that the lack of state legislation on and monitoring mechanisms for internships has catalyzed the pay gap and marketization of vocational education in China (Hou et al., 2020; Su, 2010; Zhang, 2015; Zhou, 2016). Future research should incorporate self-reported pay data from participants alongside employer or school-reported salary information to better contextualize these outcomes.

Third, this study focuses on adolescents aged between 18 and 23 years from secondary vocational schools in China, some of whom are from relatively lower socioeconomic backgrounds and whose parents mainly hold junior high school or high school degrees (Wang et al., 2013; Yu, 2010). The majority of students are placed in entry-level positions during their internships. The moderate effect of geographic location on adolescents' employability skills and their internship success might differ from adolescents who are enrolled in tertiary vocational education due to different educational attainments and socioeconomic backgrounds. Future studies are encouraged to explore how the geographic location of schools may affect the

relationship between internship success and employability skills of tertiary vocational school students.

6. Conclusion

The present study examined how vocational school students' employability skills, including sociability, resource management skills, basic skills, and FWSS, influence internship success, as measured by objective (pay, job mobility) and subjective (perceived job success) criteria, as well as how urban and rural school locations moderate this relationship. The findings indicate that the development of employability skills has a substantial influence on perceived job success. Additionally, the endowment of employability skills is less important for objective criteria, while an increase in employability skills is related to greater job mobility. The moderation analysis suggests that location has little relevance for objective criteria. This indicates that students, as individual agents, interact with their internship environment which may lead them to experience gains and losses that shape their levels of career success. Students in rural areas can overcome disadvantages by developing their employability skills to enhance their career success during internship experiences.

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Appendix 1: Results of Confirmatory Factor Analysis (CFA) for Measurement Model (T2: Sample Size: 464)

Fit Index	Reported Value	Interpretation
$\chi^2(71) = 256.63$, $p < .001$	–	Significant χ^2 is common for large samples; not concerning alone
Normed $\chi^2 = 3.61$	< 5.0 acceptable	Indicates acceptable model fit
CFI = .966	> .95 excellent	Excellent fit
NNFI (TLI) = .957	> .95 excellent	Excellent fit
IFI = .966	> .95 excellent	Excellent fit
RMSEA = .075	< .08 acceptable	Indicates reasonable approximation error

Source: Author's own work

Appendix 1-1: Results of Confirmatory Factor Analysis (CFA) for Measurement Model (T2: Sample Size: 464)

				Convergent validity	
Construct	Item	Internal reliability Cronbach alpha	Factor loading	Composite reliability	Average variance extracted
Social Skills	I can understand the working document on how work should be done through interaction with others.	.92	.86	.92	.74
	I can interpret the questions and respond with suitable answers.		.89		
	I can pay attention to other's reaction and support others with responses and feedbacks.		.89		
	I can adjust thoughts and responses to others' actions and advices.		.80		
Resource management Skills (Allocate time)	I can perform my tasks in a specified order within time limits	.90	.86	.89	.74
	I can coordinate time for different activities across projects or processes.		.89		
	I can establish deadlines for a project or process and follow the task schedules.		.84		
Basic Skills	I can organize the related ideas and present them in an articulate and compelling fashion in writing.	.90	.84	.90	.75
	I can write professional reports and proposals with appropriate wordings and expression.		.89		
	I can write tasks report with correct grammar and professional language suitable to the context.		.87		
Future Work Self Salience	I can easily imagine my future.	.91	.75	.91	.72
	The mental picture of the future is very clear.		.85		
	The future is very easy for me to imagine.		.93		
	I am very clear about who and what I want to become in my future work.		.86		

Note: n=464. I asked respondents to self-assess the extent of their employability skills. For each item, respondents had to select between seven options ranging from 1 = very strongly disagree to 7 = very strongly agree.

Source: Author's own work

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