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The impact of education type on employability and wages in China

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Abstract The objective of this paper is to investigate the impact of China's recent education policy on the labor market performance (i.e., employability and wages) of both general and vocational education graduates. The policy requires 50% of junior high school graduates to pursue secondary vocational education. The policy received public complaints because, in many parts of the world, students are free to decide on their future education. This paper measures the impacts of education type on labor market performance for both general and vocational education graduates, seeking to uncover the differing perspectives between Chinese authorities and the public. The study utilizes secondary survey data from the Chinese Social Survey 2021 (CSS2021) and employs the Mincer earnings function to analyze several main factors, such as years of education (yoe), years of work (yow), education type (et), interaction between edt and yoe and yow, and gender. The results highlight the significant role of education in enhancing both employability and wages—indicating that increased years of education positively correlate with improved employment prospects and higher wages. Regarding the relationship between wages and gender across both education types, males generally receive higher wages, while the dynamics in the relationship between employment and gender differ, with females exhibiting a greater likelihood of employment. The impact of education type on employability is slightly complicated. Employers do not prefer employing general education graduates. However, when we combined education type with years of experience, the findings revealed a preference among employers for hiring general education graduates with extensive work experience. This study has policy implications for the Chinese government in fostering the balanced development of vocational and general education, benefiting both individuals and society.

Keywords: vocational education, general education, wages, employment, mincer function

1. Introduction

In the Chinese education system, every student has had to complete nine years of compulsory education since 1986, beginning with the issuance of the Compulsory Education Law, which includes 6 years of primary education and 3 years of junior education. After completing their compulsory education, students in Year 9 take the high school entrance exam (HSEE). Patients were determined to be enrolled in general high school or secondary vocational school according to their scores on the HSEE. Generally, general high schools prepare students to take part in the University Entrance Examination (UEE) in Year 12, while vocational schools cultivate skilled talent mainly for the manufacturing industry. Vocational students can also use the UEE to reach higher vocational colleges, and the required score for vocational school students is usually lower than that for general high school students. Higher vocational education typically spans three years. Students have the option to pursue a bachelor's degree at a general university by passing a college-to-university exam and dedicating an additional two years. Subsequently, the educational pathways for vocational and general education align until the pursuit of a Ph.D. Figure 1 illustrates the flowchart of China's education system.

Vocational education has been highly valued by the Chinese government, with various policies introduced at different stages to promote its development based on the changing needs of economic and social progress. During the planned economy period in China (1949–1978), skill training took place in large work units, and graduates of vocational schools were automatically assigned lifelong job positions, which was known as the 'iron rice bowl' system (Unger, 1982; Thøgersen, 1990). The Third Plenary Session of the Eleventh Central Committee and government reports in 1979 and 1980 emphasized the need for planned secondary vocational education to address employment and social development issues. This marked the beginning of the restoration and development of vocational education in China. By 1990, the proportion of students in various types of secondary vocational and technical schools had risen from 32.3% to 45.7%. The 1996 Vocational Education Law marked a milestone in promoting legal and scientifically managed vocational education. Consequently, during this period, vocational education held a high status and received significant respect in society (Unger, 1982).

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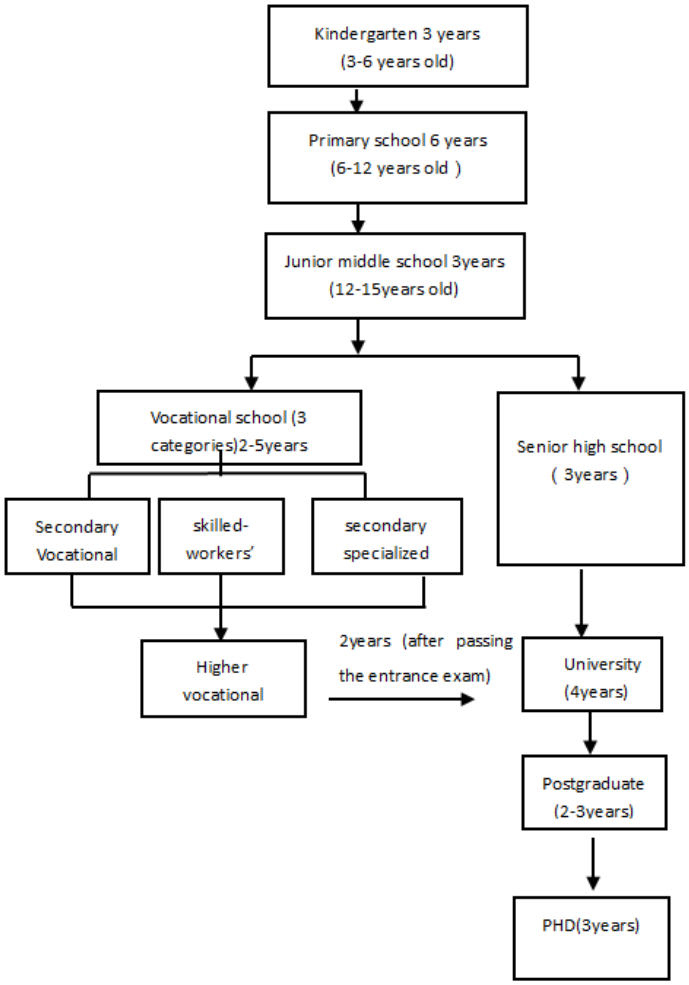


Figure 1 The education system in China.

In 1999, the Chinese government introduced "marketization" to the higher education system and increased its enrollment capacity. These measures predominantly impact the vocational education system, resulting in significant alterations in the structure and size of vocational education. These changes are reflected in the varying numbers of schools, students, and enrollments across different types of vocational education from 2001 to 2021, as shown in Table 1. With industrial progress and improved education during this period, higher vocational education institutions and enrollments grew annually. Secondary vocational education, comprising 60% of the total, saw growth in both schools and students, while elementary vocational education declined.

The breakdown of the 'iron rice bowl' system and the significant shift in the mode of skill formation led people to believe that being a worker or technician offered no job security and a lower social status (Zhang, 2008). Simultaneously, educational background has been increasingly used as a tool to differentiate job applicants in increasingly competitive markets (Hansen and Woronov, 2013). In addition, educational aspirations in China have consistently increased (Kipnis, 2011). These further encouraged Chinese parents to steer their only child (the one-child policy) toward general education rather than vocational education (Stewart, 2015).

In the new historical period marked by the continuous development of Industry 4.0 and high-tech advancements, China's latest Vocational Education Law revised in 2022 states that vocational education is as important as general education is. This revision was made due to the Chinese government's aspiration that vocational education is key to national development, in which it could nurture more talent in technology, enhance workforce technical skills, and create job opportunities (Vocational Education Law, 2022). Due to such hopes, the government has introduced a series of policies that aim to strengthen vocational education, including the National Medium- and Long-terms Education Reform and Development Plan introduced in 2010. Quite recently, in 2021, the government introduced the Notice on Enrollment of Secondary Vocational Schools, which requires 50% of junior high school graduates to enrol in vocational education. Selection for the program is made based on students' high school entrance examination (HSEE) scores. In provinces with a total HSEE score of 750 points, 600 or more points typically secure admission to key high schools, whereas approximately 480 points is needed for admission to general high schools. In 2022, over 49,000 out of 100,900 students in Beijing scored 600 or above in the

HSEE. Despite this, due to the 50% vocational education policy, even a score above 600 may not guarantee admission to general high schools.

Table 1 Vocational Education Statistics from 2001 to 2011.

Year	Higher Vocational Education			Secondary Vocational Education			Elementary Vocational Education		
	The number of colleges	The number of students in colleges (million)	The number of enrollment (million)	The number of schools	The number of students at schools (million)	The number of enrollment (million)	The number of schools	The number of students at schools (million)	The number of enrollment (million)
2001	628	1.47	0.67	17,580	11.65	3.99	1,065	0.83	0.3
2002	767	1.93	0.89	15,919	11.91	4.74	984	0.83	0.29
2003	908	4.79	1.99	14,682	12.57	5.16	1,019	0.72	0.25
2004	1,047	5.96	2.37	14,454	14.09	5.66	679	0.53	0.16
2005	1,091	7.13	2.68	14,466	16	6.56	601	0.43	0.11
2006	1,147	7.96	2.93	14,693	18.1	7.48	335	0.21	0.06
2007	1,168	8.61	2.84	14,832	19.87	8.1	275	0.15	0.05
2008	1,184	9.17	3.11	14,847	20.87	8.12	213	0.11	0.03
2009	1,215	9.65	3.13	14,401	21.95	8.69	153	0.07	0.02
2010	1,246	9.66	3.12	13,872	22.39	8.7	67	0.03	0.01
2011	1,280	9.56	3.25	13,093	22.05	8.14	54	0.02	0.007
2012	1,297	9.64	3.15	12,663	21.14	7.54	49	0.019	0.005
2013	1,321	9.74	3.18	12,262	19.23	6.75	40	0.011	0.004
2014	1,327	10.07	3.38	11,878	17.55	6.2	26	0.008	0.002
2015	1,341	10.49	3.48	11,202	16.57	6.01	22	0.005	0.002
2016	1,359	10.83	3.43	10,893	15.99	5.93	16	0.004	0.001
2017	1,388	11.05	3.51	10,671	15.93	5.82	15	0.003	0.001
2018	1,418	11.34	3.69	10,229	15.55	5.57	11	0.019	0.0005
2019	1,423	12.81	4.84	10,078	15.77	6.00	11	0.011	0.0004
2020	1,468	14.60	5.24	9,896	16.63	6.45	10	0.008	0.0002
2021	1,486	15.90	5.52	7,294	13.12	4.89	9	0.007	0.0002

Source: Chinese Statistical Yearbook 2000-2022.

However, the perception and acceptance of ordinary Chinese in vocational education are not congruent with the government's aspirations. Previous studies (Ling, 2015; Yang, 2004; Yi et al., 2018) have shown that pursuing vocational education is the second-best option and is usually associated with lower academic achievements and limited financial resources. A recent 2021 survey conducted by the People's Daily showed that the most significant reason why the public refuses to pursue vocational education is social recognition and the status associated with vocational careers. In addition, the public perceives vocational education as poor quality, unconducive and challenging working conditions, and requiring fewer graduates.

Examining the impact of education type on labor market performance is crucial for the following reasons: (1) understanding the relationship between education type and labor market outcomes helps identify potential skill mismatches (Autor, 2010); (2) policymakers require insights into diverse educational pathways' effectiveness in workforce preparation to formulate policies aligning with evolving industry needs (Hanushek & Woessmann, 2015); and (3) analyzing the impact of general and vocational education provides insights into how education contributes to economic productivity and growth (Hulten and Isaksson, 2007). In addition, at the micro level, individuals often pursue their education based on their aspirations for a rewarding career and improved job prospects. It is important to understand the difference in labor market performance between general and vocational education. Although various studies have focused on wages and education types, specifically on general and vocational education (i.e., Björklund and Kjellström, 2002; Heckman et al., (2003); Hall, 2016; Bolli-Kemper et al., 2021), few studies have explored the types of education available to compare their impacts on labor market performance.

In contrast to previous studies, this study aimed to investigate the difference in labor market performance between general education and vocational education graduates. This study has two objectives—(1) to understand the effect of education type on employment and (2) to understand the effect of education type on wages. The findings of this study will offer valuable insights to government authorities, policymakers, and individuals. On the government side, this study underscores the significance of formulating and enacting well-balanced policies that promote the harmonious development of both general and vocational education. Such policies can play a pivotal role in fostering societal and economic advancement. For individuals, one of the paramount considerations when deciding to pursue vocational or general education is the return on their future employment prospects. By delving into the impact of education type on employment and wages, this research will provide essential guidance for individuals in making informed choices regarding their educational pursuits.

This article consists of five sections. The next section, a literature review, explains related theories and previous studies performed on the topic. In section three, the methodology, data sources and regression analysis are explained. In section four, the results and analysis are presented, as are the socioeconomic information and findings of this study. The final section presents the conclusions and recommendations drawn from the study.

2. Literature Review

The human capital theory, coined by Adam Smith in 1776, emphasizes how education increases the productivity and efficiency of workers. Such increases can be achieved by increasing workers' abilities and skills. Later, Schultz (1971) supported the idea by saying that a country with a robust stock of human capital tends to exhibit higher per capita output and accelerated economic growth. Becker (1964) asserted that human capital can be grouped into two categories, namely, general and special. General human capital has broader utility and mobility across various contexts than special human capital. Researchers (i.e., Gibbons & Waldman, 2003; Hatch & Dyer, 2004) have further explained the differences between general and specialized human capital. They emphasized that while specialized human capital aligns skills with specific jobs, generalized human capital offers adaptability in dynamic cross-firm reallocation or changing job requirements. Researchers such as Von Thunen (1968) and Gibbons & Waldman (2003) further refined the categories into three categories: general human capital, task-specific human capital, and firm-specific human capital. General human capital possesses several characteristics, such as being acquired through general education, providing versatile interdisciplinary knowledge, and enabling individuals to work across diverse job types and industries. Task-specific human capital is often obtained through vocational education or corporate training. Education equips individuals with skills tailored to specific occupations or industries, thus making them less transferable. Finally, firm-specific human capital refers to the skills and knowledge that are specific to a particular firm or organization. Human capital theory has revolutionized economic thought by shifting the focus from land and physical capital to human productivity capacity. This finding underscores the profound impact of human capital on economic development and personal income growth, surpassing the influence of physical capital.

Vocational education in Germany is widely considered one of the world's most successful education models. Scholars have consistently explored the impact of vocational education on labor market outcomes in Germany. For instance, Aboukhsaiwan et al. (2020) examined labor market outcomes for 4,053 individuals. Of these, 3,269 individuals (81%) held a general maturity certificate and composed the control group, while the others composed the treatment group. The study's findings revealed three key points—(1) Contrary to common belief, vocational education does not confer often promoted employment advantages. (2) Gender disparities are observed in the labor experiences of vocational certificate holders. (3) The treatment group, particularly after the 2007-2008 economic recession, faces increased job insecurity, reflected in higher probabilities and durations of unemployment. Moreover, the study emphasized the importance of addressing early-age streaming in the education system, as researchers believe that premature and excessive streaming might impede equal opportunities (Meier & Schütz, 2007).

The scientific relationship analysis between wage income and education type was first conducted by Mincer (1958), and later, the technique was known as the Mincer earnings function. A single equation is used to investigate the effects of education type and working experience on wage income. This equation has undergone extensive scrutiny across various datasets and has become a commonly employed tool in empirical economics. Many studies have been conducted using the Mincer earnings function. For example, a study by Björklund and Kjellström (2002) in Sweden evaluated the returns on educational investments. The authors found that the Mincer earnings function is a suitable model for investigating the relationship between wages and education duration. The study suggested that the Mincer model may not be suitable for accurately representing the earnings-education relationship for different worker groups.

Another study that applied the Mincer model was carried out by Heckman et al. (2003). The researchers analyzed the returns (i.e., wages) to education in the U.S. by utilizing data from the National Longitudinal Survey of Youth. They found that returns to education are greater for women than for men. Liu & Zhang (2019) investigated returns to education in China by analyzing data from the China Family Panel Studies. The results show that returns to education are more significant for urban residents than for rural residents, and there is a substantial gender gap in returns to education.

Studies have also been conducted on labor market outcomes, with a specific emphasis on certain levels of vocational and general education. Hall (2016) examined whether pursuing general education lowers the likelihood of future unemployment. The study focused on educational reforms in Sweden that extended vocational programs in upper secondary schools and substantially increased their general content. The findings showed that no significant evidence supported the idea that attending an extended and more generalized program reduced the risk of unemployment. Bolli-Kemper et al. (2021) used regression discontinuity design (RDD) in Egypt to compare the impact of general and vocational upper secondary education on job outcomes. RDD reveals treatment effects based on a clear cutoff point—in this case, the minimum score required for enrollment in general upper secondary school. Their study, using data from the Egyptian Labor Market Survey, showed that general education graduates had better employment prospects. They were more likely to land formal jobs, keep steady work, and work for larger companies. In Indonesia, Choi et al. (2023) studied labor market outcomes for upper-secondary vocational education that emphasized the decent work (DW) component. DW is a concept introduced by the

International Labor Organization (ILO) that refers to productive employment with fair income, workplace security, social protection, personal development, social integration, freedom of expression and decision-making, and equal opportunities for all genders. They found that vocational education did not lead to higher wages or better employment conditions compared to general education. However, vocational graduates have an advantage in workplace training and pensions, especially in cities.

3. Methodology

3.1. Source of Data

The Chinese Social Survey (CSS) has been a significant research project conducted in China since 2006. It was initiated by the Institute of Sociology of the Chinese Academy of Social Sciences (CASS). The CSS aims to collect comprehensive and representative data on various aspects of Chinese society through large-scale nationwide surveys. The survey was conducted biennially and utilized probability sampling techniques for household interviews. All 31 provinces, autonomous regions, and municipalities directly under the central government, including a diverse range of districts, cities, and counties, were surveyed. Each survey cycle involved a substantial number of households, typically ranging from 7,000 to 10,000, ensuring a representative sample for analysis. The CSS was constructed eight times since its inception in 2006, with the latest study occurring in 2021. The survey covered various sections that examined different aspects of social life and human development, including household characteristics, employment and wage information, residents' economic status, living conditions, social security, political participation, etc.

The CSS in 2021 included 10,136 individuals from 592 villages in 30 provinces/municipalities/autonomous regions. The data were selected by removing student, retiree and nonresponse data from the CSS2021 database; ultimately, 3,322 observations were used to conduct the Mincer earnings analysis. This study primarily investigated education type, years of education, and years of work as independent variables, while employment status and the logarithm of average monthly salary served as the dependent variables.

3.2. Econometric Modeling

This section examines how education types influence employment and wage income. This study aims to provide insight into how obtaining general or vocational education affects the possibility of obtaining employment and wages. The Mincer earnings function developed by Jacob Mincer (1962) is a well-established tool in labor economics that allows the review of the relationship between human capital (e.g., education and experience) and earnings. This function has been applied by many researchers, such as Neuman and Ziderman (1991), Arum and Shavit (1995), Björklund and Kjellström (2002), Heckman et al. (2003), and Liu and Zhang (2019).

The mincer earnings function will be used to obtain the objectives of this article:

Objective 1: Review the effect of education type on employment.

Equation 1 shows the regression model used to analyze the influence of education type on employment:

$$emp=\alpha+\beta1*yoe+\beta2*\ yow\ +\beta3*edt+\delta*X+\varepsilon \quad (1)$$

where:

emp is a dummy variable where 1 refers to employed and 0 means unemployed.

α refers to the intercept or constant term that captures the average earnings when all the other variables are zero.

yoe refers to the number of years of formal education (often referred to as schooling or education level).

yow denotes years of work experience, which captures the effect of accumulated work-related skills and knowledge.

edt is a dummy variable where 1 refers to general education and 0 to vocational education.

β1, β2, and β3 are coefficients that quantify the relationship between earnings and other respective variables.

X refers to a vector of additional explanatory variables that can influence earnings.

δ refers to the coefficients associated with additional explanatory variables.

ε refers to the error term, capturing unobserved factors that affect earnings but are not accounted for in the model.

To better reveal intricate relationships and gain a deeper understanding of how education type interacts with years of education and work experience to impact employment outcomes, the interactions "edt*yoe" and "edt*yow" are considered. Therefore, the regression equation is expressed as follows:

$$emp=\alpha+\beta1*\ yoe\ +\beta2*\ yow+\beta3*\ edt\ +\beta4*\ Gender\ +\ edt*yoe+\ edt*yow+\varepsilon \quad (2)$$

Additionally, since the dependent variable "emp" is binary and multiple independent variables are considered, a logistic regression model is employed in this study. Logistic regression, initially proposed by Joseph Berkson in 1944, is a statistical method used to model the relationship between a binary dependent variable and one or more independent

variables. It estimates the probability of the dependent variable taking a specific value based on the values of the independent variables.

Objective 2: Review the effect of education type on wages.

This second objective investigates the effect of education type on wages. Equation 3 shows the regression model used to analyze this objective.

$$\ln \text{wages} = \alpha + \beta 1 * \text{yoe} + \beta 2 * \text{yow} + \beta 3 * \text{edt} + \beta 4 * \text{Gender} + \text{edt} * \text{yoe} + \text{edt} * \text{yow} + \varepsilon \quad (3)$$

In the formula, “ln wages” refers to the logarithm of wages. α refers to the intercept or constant term that captures the average earnings when all the other variables are zero. The definitions for the other variables are the same as those in Equation 1.

4. Results and Analysis

4.1. Socioeconomic Information

Before applying the Mincer earning function to statistically explore the connection between independent variables such as education type, years of education, and years of work and the dependent variables (employment status and wages), it is crucial to grasp the participants' general socioeconomic information. This approach helps researchers gain a more comprehensive understanding of how education type distinctly influences labor market performance. In this study, the data are primarily selected based on two criteria: employment status and age. For male participants, the age range was restricted to those born between 1961 and 2003, aligning with the Chinese legal retirement age of 60 years for men. For female participants, the age range was limited to those born between 1966 and 2003, corresponding to the Chinese legal retirement age of 55 years for women (Labor Law of the People's Republic of China). These age ranges were calculated with reference to 2021.

After the selection, 3,322 observations (1,842 males and 1,480 females) were used for the Mincer earnings analysis. The participants had a diverse range of education levels, spanning from having no formal education to having a graduate degree. Specifically, 47 respondents (1.41%) had not received any formal education, the majority of the sample or 1,026 respondents (30.89%) had completed middle school, 730 respondents (21.97%) had attained secondary education, and 1,080 respondents (32.51%) had finished higher education. The survey showed that the monthly average wage increases in tandem with the level of education. Those with an undergraduate education received the highest average monthly wages, amounting to 15,919.75 CNY (The USD-CNY exchange rate in October 2023 was 1.00-7.17.) All the details are shown in Figure 2.

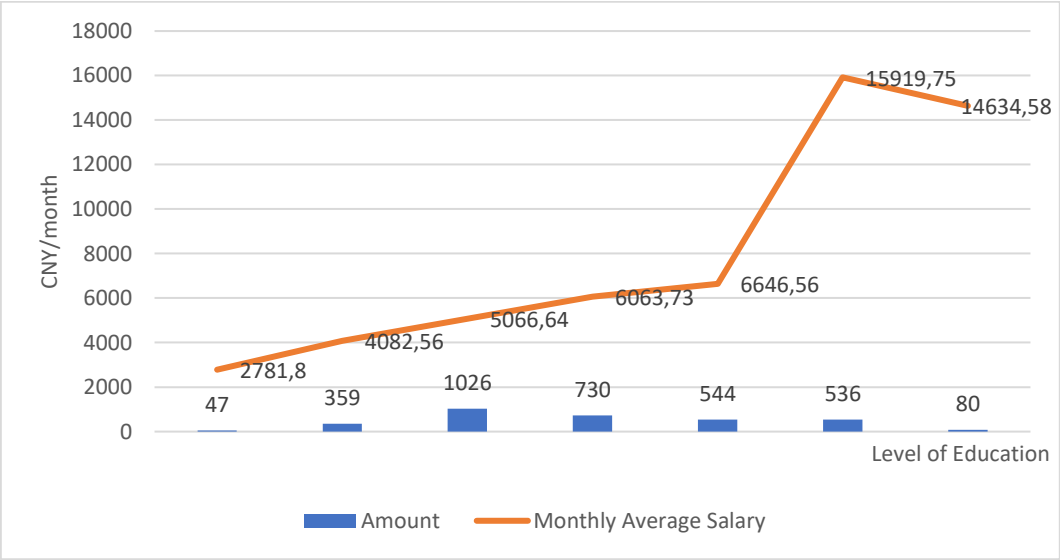


Figure 2 Distribution of educational level and average monthly salary.

The wages and education levels are shown in Figure 3. For the secondary education category, the monthly salary for vocational education (6345.88 CNY) is slightly greater than that for general education (5839.80 CNY). However, for the tertiary education category, the monthly salary for general education (15,919.75 CNY) is significantly greater than that for vocational education (6,646.56 CNY). While the monthly salary for vocational education surpasses that for general education in secondary education, both vocational and general tertiary education yield higher monthly salaries than secondary education. This discrepancy in average monthly salary between secondary and tertiary education implies that a higher level of education is associated with increased earning potential. On the whole, people choosing general education tend to earn more

than do those with vocational education, despite vocational education boasting a slightly higher salary than does general education at the secondary level.

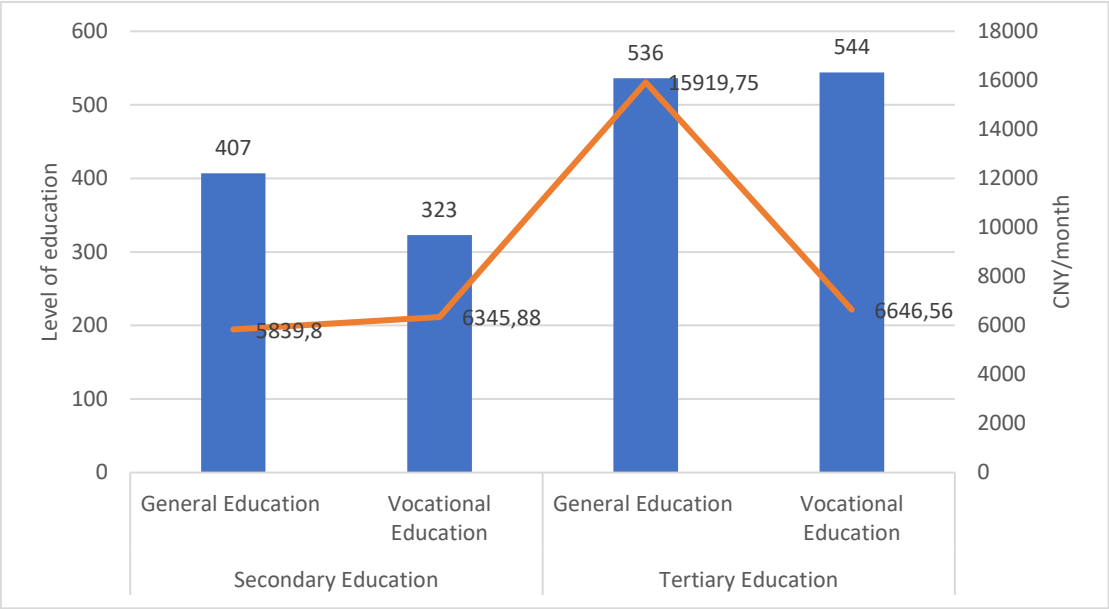


Figure 3 Distribution of educational type and monthly salary.

Based on the CSS2021 survey data, 1,810 participants received vocational education. Figure 4 shows that the ratio of vocational education to general education is approximately 1:1.09 for secondary and tertiary education levels. Specifically, participants from rural households preferred general education over vocational education for their secondary education. However, for tertiary education, rural households displayed greater preference for vocational education than did their urban counterparts.

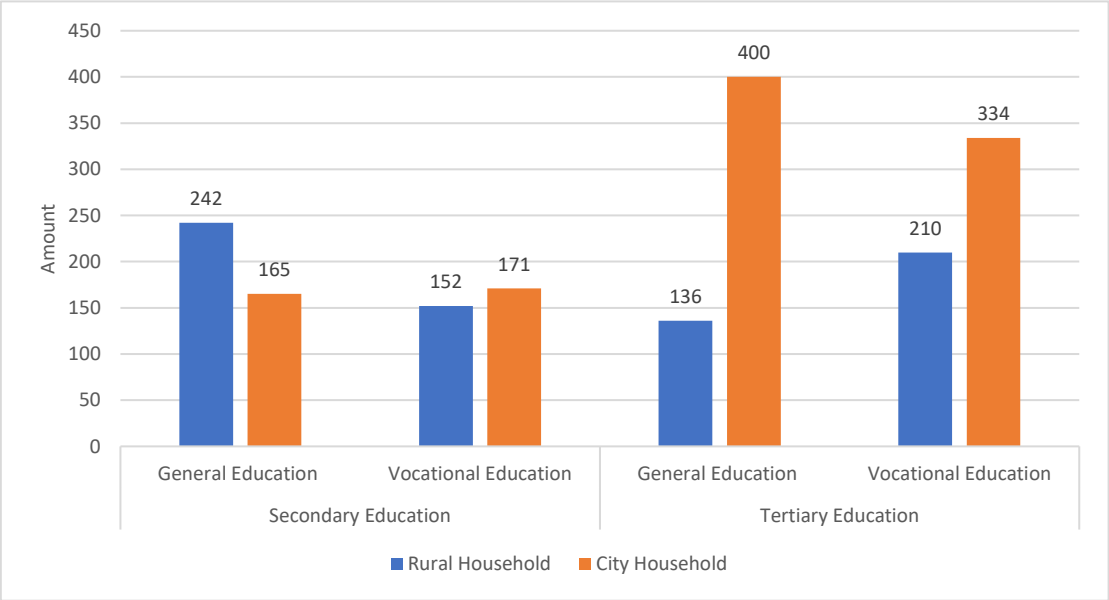


Figure 4 Distribution of educational levels and household types.

4.2. The Results of the Influence of Education Type on Employment

Due to the binary nature of the dependent variable "emp" (employment status), logistic regression is the most appropriate method for modeling such outcomes. The findings presented in Table 2 reveal the following results:

(1) The model is statistically significant, as Prob > chi2 = 0.0000.

(2) There is a significant association between years of education and employment status. This finding suggested that an increase in years of education is linked to a greater probability of being employed. Both "edt" (education type)

and the interaction term "edt_yoe" are significantly related to employment status. The coefficient for "edt" (-0.5243) implies that individuals with a general education background (edt=1) tend to have a lower likelihood of employment than do those with vocational education (edt=0). This result contradicts the findings of Bolli-Kemper et al. (2021) and Choi et al. (2023), who demonstrated that graduates with a general education background had better employment prospects.

(3) However, the positive coefficient for "edt_yoe" implies that the advantage of general education in employment becomes clearer with increased years of education (yoe). In conclusion, "yoe" is the most critical factor influencing employment.

(4) Another factor closely related to employment is "gender." The results indicate that females are more likely to be employed than males are.

The detailed results of the regression model can be found in Table 2.

Table 2 Logit estimates of education types on employment.

emp	Coefficient	Std Error	P>z	95% interval	
Yoe***	.0646093	.0061856	0.000	.0524858	.0767329
Yow	-.0003487	.0008999	0.689	-.0021124	.001415
Edt****	-.5242964	.0998356	0.000	-.7199706	-.3286222
Gender***	-.1.277613	.037482	0.000	-1.351077	-1.20415
Edt_yoe***	.0431797	.009032	0.000	.0254774	.060882
Edt_yow	.000374	.0009045	0.679	-.0013988	.0021469
Const***	2.94609	.1031843	0.000	2.743852	3.148327
Log likelihood	-10410.44				
Pseudo R2	0.0801				
Prob > chi 2	0.0000				

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

4.3. The Results of the Influence of Education Type on Wage Status

Table 3 reveals that while education type (Edt) lacks statistical significance for wages, noteworthy p values emerge for interactions with years of education (Edt_yoe) and years of work (Edt_yow), both of which are less than 0.1. This finding suggests potential impacts on wages. Specifically, Edt_yoe's coefficient is -0.0069, indicating that additional vocational education years could increase wages. Conversely, Edt_yow's coefficient is 0.0146, suggesting that more years of work with general education may enhance the likelihood of higher wages. The influence of education type on wages appears intricate, calling for further research. The results highlight that "yoe" (years of education) and "gender" are the significant factors influencing wage income. Both variables exhibit positive coefficients, accompanied by p values that nearly approach zero. This indicates that individuals with more years of education tend to earn higher wages. There is also a gender-based wage disparity where on average, males tend to earn more than females, even though females are more likely to be employed than males are. However, the relationship between "edt" (educational type) and wages, when considered in isolation, was not statistically significant. Details of these findings are shown in Table 3.

Table 3 Logit estimates of the effect of education type on wages.

Ln_wage	Coefficient	Std Error	P>z	95% interval	
Yoe***	.04039	.0074863	0.000	.0257117	.0550682
Yow	-.0035285	.0022087	0.110	-.0078591	.0008022
Edt	.1196493	.1611734	0.458	-.19636	.4356587
Gender***	.4100133	.0231012	0.000	.3647193	.4553073
Edt_yoe***	-.0069412	.0026389	0.009	-.0121152	-.0017672
Edt_yow*	.014596	.0088068	0.098	-.0026713	.0318634
Const***	7.735267	.1267197	0.000	7.48681	7.983724
Prob > F	0.0000				
R-squared	0.1891				
Adj R-squared	0.1876				

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

5. Conclusions and suggestions

The new Chinese education policy mandating that 50% of junior high school students pursue vocational secondary education has stirred uneasiness among the population. This worry stems from various factors: the low social recognition and status of vocational graduates, poor quality of vocational education, and limited employability of vocational graduates. However, it is crucial to note that these are only public perceptions, and the policy's effect on China's economy, particularly

on employability and wages, remains unknown. Therefore, this article aims to explore the impact of both general and vocational education on employability and wages.

This article presents several key findings. First, it highlights the crucial role of education in both employment and wages. Individuals with higher education levels are more likely to secure employment and earn higher wages in both vocational and general education. Specifically, the impact of education type on employment is more pronounced. Individuals with a general education background tend to have a lower likelihood of employment than do those with vocational education. However, when considering the factor of "years of education," the advantage of general education in employment becomes more evident. Furthermore, the study highlights wage gender disparities, where males tend to earn more but are less likely to be employed than females are. The relationship between education type and employment is intricate, with general education initially appearing less favorable but gaining importance with increased education.

In particular, levels and types of education have far-reaching effects on both employment and wages. This approach can diminish the initial advantage of individuals who receive vocational education and who initially earn higher wages than those with a general education. Therefore, it is crucial for the government to develop corresponding policies aimed at enhancing the overall education level of the public. The government could explore diverse approaches at the higher education level instead of mandating vocational education choices during secondary education. In addition, the government could also experiment with different policies at the higher education level. Simultaneously, the government should implement measures such as promoting equal pay for equal work initiative and formulating policies to support women in accessing higher-paying job opportunities.

At the micro level, individuals should stay informed about the latest developments in various industries. Keeping abreast of trends, advancements, and opportunities in advanced fields (e.g., neuromorphic intelligence, quantum information, genetic technology, etc.) can give individuals strategic advantage in their career paths. Furthermore, individuals should make strategic career choices that are aligned with their skills and interests.

Ethical considerations

I confirm that I have obtained all the consent required by the applicable law to publish any personal details or images of the patients, research subjects, or other individuals used. I agree to provide the Multidisciplinary Science Journal with consent or evidence that such consent has been obtained if requested.

Conflict of interest

The authors declare no conflicts of interest.

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References

Aboukhsaiwan, O., Kim, J.Y., Mano, C., Maschka, C., & Rong, L.X. (2020). Revisiting the Economics of Vocational Education: Estimating the Impact of Vocational Education on Labour Market Outcomes in Germany.

Arum, R., & Shavit, Y. (1995). Secondary vocational education and the transition from school to work. Sociology of Education, 68(3), 187-204.

Björklund, A., & Kjellström, C. (2002). Estimating the return to investments in education: how useful is the standard Mincer equation? *Economics of Education Review, 21*(3), 195–210. https://doi.org/10.1016/S0272-7757(01)00003-6

Bolli-Kemper, J. M., Mirkacc, U., & Renold, U. (2021). Evaluating the impact of general versus vocational education on labor market outcomes in Egypt by means of a regression discontinuity designCES Working Papers, 5.

Choi, S., Li, H., Ogawa, K., & Tanaka, Y. (2023). Secondary vocational education and decent work in Indonesia: Differences between urban and rural areasInternational Journal of Training Research.

Gibbons, R., & Waldman, M. (2003). Task-specific human capital. *Journal of Economic Literature, 41*(2), 351-401.

Hall, C. (2016). Does more general education reduce the risk of future unemployment? Evidence from an expansion of vocational upper secondary education. *Economics of Education Review, 52*, 251-271.

Hansen, M. H., and T. E. Woronov. 2013. “Demanding and Resisting Vocational Education: A Comparative Study of Schools in Rural and Urban China.” *Comparative Education 49* (2): 242–259. doi:10.1080/03050068.2012.733848.

Hanushek, E. A., & Woessmann, L. (2015). The Impact of International Achievement Tests on Economic Performance and Social Institutions. *Brookings Papers on Economic Activity, 2015*(2), 1–89.

Hatch, N. W., & Dyer, J. H. (2004). Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal, 25*(12), 1155-1178.

Heckman, J. J., Lochner, L. J., & Todd, P. E. (2003). Fifty years of Mincer earnings regressions (NBER Working Paper No. 9732). https://doi.org/10.3386/w9732

Hulten, C. R., & Isaksson, A. (2007). Why Development Levels Differ: The Sources of Differential Economic Growth in a Panel of High and Low-Income Countries. *Swedish Economic Policy Review, 14*(2), 23–53.

Kipnis, A. 2011. Governing Educational Desire. Chicago: The University of Chicago Press.

Ling, M. (2015). Bad students go to vocational schools! Education, social reproduction and migrant youth in urban China. *The China Journal, 73*(1), 108–131.

https://doi.org/10.1086/679271.

Liu, C., & Zhang, L. (2019). Returns to education in China: Evidence from the China Family Panel Studies. *China Economic Review, 53*, 261-275

Meier , V., Sch¨utz, G. (2007). The Economics of Tracking and Non-Tracking . No 50, Ifo Working Paper Series, Ifo Institute-Leibniz Institute for Economic Research at the University of Munich.

Mincer, J. (1958). Investment in Human Capital and Personal Income Distribution. *The Journal of Political Economy, 66*(4), 281-302.

Mincer, Jacob (1962). On-the-Job Training: Costs, Returns, and Some Implications. *Journal of Political Economy, 70*(5), 1962, pp. S50-S79.

Neuman, S., & Ziderman, A. (1991). The benefits of education: A critique of human capital theory. *Oxford Review of Education, 17*(1), 5-17. :

Stewart, V. 2015. Made in China: Challenge and Innovation in China's Vocational Education and Training System. Washington D.C.: National Center on Education and the Economy.

Thøgersen, S. 1990. Secondary Education in China after Mao: Reform and Social Conflict. Aarhus: Aarhus University Press.

Unger, J. 1982. Education under Mao: Class and Competition in Canton Schools, 1960–1980. New York: Columbia University Press.

Von Thunen, J. H. (1968). The isolated state. Oxford: Pergamon Press.

Yang, J. (2004). Education equity and vocational education. *Jiaoyu Yu Zhiye, 7*(16), 4–7.

Yi, H., Li, G., Chu, J., Loyalka, P., Loyalka, P., Shi, H., Xu, J., Shi, H., & Chu, J. (2018). Assessing the quality of upper-secondary vocational education and training: Evidence from China. *Comparative Education Review,62*(2),199–230. https://doi.org/10.1086/696920.

Zhang, N. 2008. "The Choice of Vocational and Technical Education for Senior Secondary Students in Urban China." *The International Journal of Learning 15* (4): 205–217.