

# **A Study on the Factors Influencing the Effectiveness of University Labor Education: An Empirical Analysis Using a Binary Logistic Model**

**Shaohua Fan<sup>1,\*</sup>, Yujing Song<sup>2</sup>**

<sup>1</sup>*School of Business Administration, Chongqing Technology and Business University, Chongqing, China*

<sup>2</sup>*Wealth Management School, Chongqing Finance and Economics College, Chongqing, China*

*\*Corresponding Author*

**Abstract:** Labor education in universities is essential for the comprehensive modernization of the nation and the all-around development of students. This study aims to evaluate the current effectiveness of labor education in universities and identify the key factors that influence this effectiveness. Using survey data from Chongqing Technology and Business University, a binary logistic model was employed for empirical analysis. The findings reveal that six factors significantly impact students' willingness to participate in labor activities: enrollment in labor education courses, the effectiveness of theoretical labor instruction, the effectiveness of professional internships and practical training, the influence of social practice, the campus environment surrounding labor education, and the attitudes of family members towards labor. Based on these insights, the paper recommends four strategies to improve the effectiveness of labor education in universities: the introduction of compulsory labor courses, the prioritization of professional internships and hands-on training, the development of a campus culture that values labor, and the cultivation of a positive family perspective on labor.

**Keywords:** University Students; Labor Education; Logistic Regression Model

## **1. Introduction**

In 2020, the Chinese government issued the Opinions on Comprehensively Strengthening Labor Education in the New Era for Primary, Secondary, and Higher Education (hereinafter referred to as the Opinions). The Opinions clearly state that the overarching goal of labor education is to instill in students the belief that

labor is the most honorable, noble, and magnificent endeavor, and to emphasize the integration of labor education throughout the entire process of talent cultivation [1]. Following this directive, labor education has been widely implemented across Chinese primary, secondary, and higher education institutions. For China to achieve high-quality economic and social development, it is essential to accelerate the cultivation of well-rounded talents with moral, intellectual, physical, aesthetic, and labor education. Labor education is a crucial means of promoting comprehensive human development and is an inevitable requirement for nurturing a new generation equipped for the demands of the era [2]. In this context, universities bear the significant responsibility of preparing talent for national rejuvenation. Whether contemporary university students possess the correct values and strong work ethic directly impacts the nation's ability to achieve high-quality development in the future. Therefore, exploring the primary factors that influence labor education in universities, identifying issues, and uncovering the principles of labor education in higher education institutions is of great value and significance [3].

## **2. Model Construction**

Logistic regression analysis is a probabilistic model widely employed in regression models where the dependent variable is a binary categorical variable. The fundamental assumption of this study is that university students' willingness to engage in labor is a binary choice problem. Binary typically refers to "two possibilities", such as "yes" or "no" in logic, hence a binary logistic regression model can be used for analysis [4]. In this study, the willingness of university students to participate

in labor is coded as 1 and 0, where the dependent variable  $Y = 1$  indicates that the student is willing to participate, and  $Y = 0$  indicates that the student is unwilling to participate [5]. Assuming that there are  $j$  factors influencing the value of the dependent variable  $Y$ , denoted as  $X_1, X_2, X_3, \dots, X_j$ , the following Logistic regression model can be established:

$$\text{logit } p = \ln \frac{p}{1-p} = \ln [e^{f(x)}] = f(x)$$

$$= \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_j x_j + \mu$$

Where,  $\beta_0, \beta_1, \beta_2, \dots, \beta_j$  are the regression coefficients, and  $\mu$  is the random error term. Additionally, the results of the logistic regression analysis typically include standard error (S.E.), Wald statistic, degrees of freedom (df), significance level (Sig), and odds ratio (OR) values [6].

### 3. Selection and Description of Explanatory Variables

To assess the effectiveness of labor education in higher education institutions in the new era and to understand university students' willingness to engage in labor, this study conducted a survey from June to August 2023. The survey

employed both online (WeChat collection forms) and offline methods, targeting students in the second, third, and fourth years across four major disciplines—Management, Economics, Engineering, and Arts—at Chongqing Technology and Business University. A total of 600 questionnaires were distributed, with 578 valid responses collected, yielding an effective response rate of 96.33% [7].

In the logistic regression model analyzing factors influencing university students' willingness to engage in labor, it is first necessary to identify the variables, i.e., the specific factors influencing this willingness. Based on an extensive review of literature on labor education among university students, six independent variables were selected as influencing factors. These include enrollment in labor education courses, the effectiveness of labor theory instruction, the effectiveness of professional internships and trainings, the impact of social practice, the atmosphere of labor education on campus, and the attitudes of family members toward labor [8]. The range and assignment of values for each independent variable are detailed in Table 1.

**Table 1. Range of Variable Values and Content Assignments**

	Variables	Range of Values	Content Assignment and Explanation	Mean	Standard Deviation
Dependent Variable	Willingness of University Students to Participate in Labor	0~1	0 = Unwilling; 1 = Willing	0.781	0.256
	Enrollment in Labor Education Courses	0~1	0 = No; 1 = Yes	0.682	0.403
	Effectiveness of Labor Theory Instruction	0~1	0 = Ineffective; 1 = Effective (Acquired some labor theory knowledge, deepened labor value concepts)	0.583	0.276
Independent Variables	Effectiveness of Professional Internships and Training	1~3	1 = Did not participate, no effect; 2 = Participated minimally, little gain; 3 = Participated earnestly, significant gain	1.773	0.417
	Effectiveness of Labor Practice Activities	1~3	1 = Did not participate, no effect; 2 = Participated minimally, little gain; 3 = Participated earnestly, significant gain	1.376	0.421
	Effectiveness of Campus Labor Culture Construction	1~3	1 = No development, no effect; 2 = Few labor education activities, weak atmosphere; 3 = Many labor education activities, strong atmosphere	1.596	0.287
	Attitudes of Family Members Toward University Students Participating in Labor	1~3	1 = Oppose participation; 2 = Neither support nor oppose; 3 = Advocate for active participation	1.653	0.431

### 4. Analysis of Regression Results

The statistical data of the six independent variable groups from the survey were entered into the SPSS 17.0 software system and

analyzed using the binary logistic regression model. The results of the regression analysis are presented in Table 2.

From Table 2, the following can be observed:

1) The Irreplaceable Role of Labor Education

Courses in University Students' Labor Education: As shown in Table 2, enrolling in labor education courses allows students to systematically learn labor theory, deepen their understanding of labor, and establish correct labor values. Consequently, university students

who elect labor education courses have a significantly positive impact on the effectiveness of labor education, underscoring the irreplaceable role of labor courses in university labor education [9].

**Table 2. Results of the Binary Logistic Model**

Variables	Regression Coefficient	S.E	Sig.	OR Value
Enrollment in Labor Education Courses	2.081	0.215	1.78	3.273
Effectiveness of Labor Theory Instruction	1.053	0.336	0.707	2.017
Effectiveness of Professional Internships and Trainings	0.491	0.427	0.087	1.605
Effectiveness of Labor Practice Activities	0.375	0.319	0.041	1.276
Campus Labor Culture Construction	1.543	0.531	0.135	1.575
Attitudes of Family Members Toward University Students Participating in Labor	1.371	0.511	8.773	1.809
Constant	3.767	1.239	0.121	33.77

2) Significant Positive Impact of Labor Theory Instruction on the Effectiveness of University Students' Labor Education: Only through diligent study of labor theory can students develop a profound understanding of labor, which in turn fosters intrinsic labor motivation. Therefore, labor theory instruction is a critical factor influencing the effectiveness of labor education and the source of intrinsic labor drive [10].

3) The Indispensable Role of Professional Internships, Training, and Labor Practice Activities in Labor Education: As illustrated in Table 2, compared to the reference group "did not participate, no effect", the independent variable "participated earnestly, significant gain" has a positive and significant impact on the dependent variable. Integrating labor education with professional education, guiding students to apply professional knowledge and skills in labor practice, helps achieve the dual objectives of practical teaching and labor education. This finding also indicates that university students who do not participate or rarely participate in professional internships and social practice activities often lack a profound understanding of labor, fail to gain the expected outcomes from labor practice activities, and thus undermine the effectiveness of labor education. Therefore, university labor education should not only deepen labor understanding but also integrate with professional education to help students master and apply the skills they rely on for livelihood. This integrated approach reflects the shared value implication of labor education and professional education [11].

4) The Impact of Campus Labor Culture Construction on the Effectiveness of Labor

Education: As shown in Table 2, "numerous labor education-themed activities, strong atmosphere" has a positive impact on the effectiveness of university students' labor education. It is evident that a lack of campus labor culture weakens the internal motivation for labor education among university students, while fostering a campus labor culture atmosphere stimulates students' enthusiasm, initiative, and creativity in participating in labor education activities [12].

5) The Significant Positive Impact of Family Members' Attitudes toward University Students' Willingness to Participate in Labor: Currently, many parents have a skewed understanding of the value of labor, which hampers their children from developing a positive attitude toward labor. Some parents hold a mistaken prejudice against labor, viewing it as a means of livelihood for lower-class people and thus devaluing it. This family-based labor education impedes the formation and development of students' labor values, resulting in weak labor awareness, incomplete labor values, and low willingness to participate in labor among many university students [13].

## 5. Discussion and Recommendations

To enhance the effectiveness of labor education for university students, cultivate correct labor values, and foster good labor qualities, along with voluntary and conscious participation in labor, the following recommendations are proposed:

1) Introduce Mandatory Labor Courses and Strengthen Labor Theory Education: The *Opinions* state that "ordinary higher education institutions must clearly define that labor

education primarily relies on courses, with no less than 32 credit hours at the undergraduate level”. Establishing labor as a dedicated mandatory course with sufficient class hours and appropriate credits is a necessary measure to strengthen labor education and improve labor qualities. Courses are the core element of talent cultivation. University labor education, as the phase of understanding the labor science system and mastering labor knowledge, must be grounded in labor education courses. Not only should mandatory labor education courses be established, but a series of theoretical elective courses related to labor education, such as management, economics, and education, should also be offered based on students’ majors. During the theoretical study of labor education courses, students’ understanding of labor will continually deepen, aiding in their comprehension and formation of the correct labor perspectives, thus improving their overall labor theoretical quality.

2) **Emphasize Professional Internships and Practical Training to Deepen the Impact of Labor Education:** Professional internships and social practice activities are vital channels for talent cultivation in universities. Only through internships and practice can students continually explore and understand the development laws of nature and society, thereby gaining correct perceptions of objective matters. In the new era, university labor education is not solely about physical labor but rather about complex labor education that creates higher value. Labor education is distinctly characterized by practical teaching attributes. Innovative entrepreneurship, internships, social practice, and work-study programs conducted in universities can enhance students’ practical abilities, learning capabilities, and innovative skills, allowing them to acquire certain professional labor skills. This process transforms students from mere observers to active participants, enabling them to personally experience the labor process, share labor insights, and further deepen their understanding of labor theory through labor practice, thereby integrating perceptual and rational knowledge. This approach lays a foundation for adapting to future employment positions.

3) **Establish a Campus Labor Culture to Optimize the Labor Education Environment:** Campus culture reflects the spiritual outlook of a school and represents the collective values of all its students and staff. Creating a

labor-revering campus culture is conducive to improving the effectiveness of labor education. Schools should fully utilize the campus environment and media to promote labor education among students. In students’ learning and living areas, positive messages about the dedication of contemporary model workers, the craftsmanship spirit, and the professionalism of ordinary people should be prominently displayed, creating a cultural atmosphere that honors labor and respects laborers. This approach can subtly influence students’ thoughts and actions. Additionally, labor education can be promoted through activities such as speeches, essay contests, recitations, and the selection of campus labor stars.

4) **Cultivate a Good Family Labor Tradition to Foster a Culture that Honors Labor:** In contemporary society, many parents have a skewed or mistaken understanding of the value of labor, particularly in single-child families, where many parents prevent their children from participating in labor, resulting in weak labor awareness and a lack of necessary labor experience among students. This family atmosphere has a significant negative impact on students’ labor concepts. Therefore, it is crucial to cultivate a good family tradition, leveraging family education to play a foundational role, and make parents fully aware of the critical role of labor in the comprehensive development of university students and the importance of correct labor values for their growth and success. Meanwhile, society must also actively promote positive labor education. On one hand, there should be strengthened supervision and management of mass media, with a clear stance against all forms of erroneous labor concepts that promote idleness and the pursuit of pleasure. On the other hand, mainstream media should enhance positive propaganda, increase the promotion of model workers and advanced achievements, tell the stories of labor models and craftsmen, and foster a social ethos where labor is honored and innovation is celebrated.

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