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The Motivation and Predicament of Enterprise Collaborative Education Choice from the Perspective of "Cost-benefit"

Wenxiu Zheng

University of Baquio, General Luna Road. Baquio City 2600, Philippines

Abstract: The common interest demand is the common interest orientation of both production and education in terms of talents and technical skills. As a stakeholder, companies are most concerned with direct economic benefits and costs. To a large extent, the choice of industry-education synergy to educate people is closely related to cost-benefit, cost-benefit situation can reflect the efficiency of enterprise synergy, and the efficiency of enterprise synergy will be affected by cost-benefit at a certain stage. Based on the perspective of cost-benefit, this paper constructs a research framework on the influence of the comprehensive value perception of the integration of production and education in enterprises on their cooperation tendency, and uses the field survey data of enterprises to verify, and draws the following conclusions: student safety issues and student ability are the main risks of enterprises; and The cost of communication in colleges and universities and the cost of cultivating human resources are the main costs of enterprises.

Keywords: Interest demand; Integration of production and education; Cost benefit; Risk; Cost.

1. Introduction

"Several Opinions of the General Office of the State Council on Deepening the Integration of Industry and Education" (Guobanfa [2017] No. 95) pointed out that deepening the integration of industry and education, and promoting the organic connection between the education chain, talent chain and industrial chain and innovation chain, is the current promotion of human resources supply. The urgent requirement of side structural reform is of great significance for comprehensively improving the quality of education, expanding employment and entrepreneurship, promoting economic transformation and upgrading, and cultivating new momentum for economic development under the new situation. Collaborative education is a kind of education mode that improves the quality of personnel training as the core, and realizes the complementary advantages of all parties by integrating the main resources of education, so as to realize the education mode of personnel training. Collaborative educating people by effectively pooling resources and elements from all parties, and integrating the resources and elements of various educating subjects in talent, capital, information, technology, etc. . Through the effective connection between universities and industries, we will give full play to the advantages of universities, enterprises and other relevant stakeholders to jointly cultivate high-quality talents.

In the process of practice, the depth of the integration of production and education is still not enough, and it is difficult for the two main bodies of universities and enterprises to have a synchronous joint effect. Sometimes collaborative education is only superficial due to the lack of a scientific operating mechanism, and it is impossible to form a 1+1>2 system. same effect. Similarly, in the actual talent training process, we are all confused: which key link goes wrong in the process of collaboration with the enterprise, and why it is difficult for talent training to achieve the expected results. Therefore, what are the key influencing factors for enterprises to participate in collaborative education, and what are the action paths, which have become problems that we need to solve urgently. Find out the key influencing factors, understand their action paths, and apply their practice to school-enterprise collaborative education. Colleges and enterprises can go further and longer in collaborative education.

2. Summary of Research on Similar Topics at Home and Abroad

Different from general school-enterprise cooperation, school-enterprise collaboration highlights the cultivation of students' practical ability, application ability and innovation ability, aiming to cultivate more high-tech, high-quality practical talents for enterprises. School-enterprise collaboration refers to working together, focusing on the dominant position of both schools and enterprises (Zhang Yi, 2017); school-enterprise cooperation is a kind of cooperation. The essence of school-enterprise collaboration is the innovation of school-enterprise cooperative education, and the purpose is to improve students' engineering practice ability and develop innovative capabilities (Zhang Lan, 2014).

Ma Lijuan (2013) believes that the fundamental starting point for enterprises to participate in vocational education is to obtain benefits from school-enterprise cooperation. The specific motivation is to obtain human resources, technical resources, government preferential support, cheap labor, increase corporate reputation, and enhance corporate culture. Nanhai and Chen Juan (2014) believe that the main reasons for enterprises to participate in vocational education are: to improve the core capabilities of enterprises, to obtain professional technical and skilled talents, and to obtain additional economic benefits. Hu Haiqing (2012) identified the five factors that most promote the participation of Chinese enterprises in industry-university cooperation to cultivate talents: finding satisfactory employees, showing or establishing the image of the company supporting education, establishing or strengthening relationships with schools,

seasonal or special projects. Demand, enterprises take this to fulfill their social responsibilities. For the sake of vital interests, the specific motivations of enterprises participating in vocational education mainly include: public relations interests, the source of cheap labor, and the source of future workers. Yao Shuwei (2014) believes that, as a direct stakeholder, enterprises need to be driven by certain economic, institutional and moral motivations to participate in collaboration. Among them, enterprises are most concerned about direct economic benefits (Wu Yusheng, 2016). Li Li (2016) believes that enterprises need the input and cooperation of human resources for innovation and entrepreneurship in colleges and universities, and they need to save their own human capital through collaborative innovation to form a 1+1>2 value-added effect of human resources.

Most of the relevant literature research on school-enterprise collaborative education is qualitative research, and the research mainly focuses on the perspective of corporate interests and the practical exploration of higher vocational colleges. There is no relevant research to analyze the key influencing factors of school-enterprise collaboration from a quantitative perspective, and Its action path; there is no relevant research on which influencing factors play a key role in the case of school-enterprise collaborative practice, and what is the action path. Based on this, this paper proposes basic concepts such as comprehensive perception of enterprise collaborative education value, related dimensions, and enterprise collaborative education adoption tendency based on Ran Yunfang's (2018) related achievements in terms of enterprise cost and income. The cross-sectional data collected by the questionnaire survey will use the structural equation model to identify the key influencing factors for enterprises to participate in the collaborative training of talents in higher vocational colleges, and then explore practical construction paths or measures.

3. Theoretical Analysis and Model Construction

The resource dependence theory holds that resources are needed for survival and development, and it is impossible for any organization to hold all the resources needed for its own survival and development to achieve self-supply and development. In order to survive, enterprises have to introduce, absorb, and convert various resources from the external environment, including human resources, financial resources, social legitimacy, customers, technology and material input, etc. In the process of cooperation with vocational colleges, enterprises investing their own resources will lead to an increase in the number of other important resources and new resources. In the process of cooperation between enterprises and colleges, the quantity and importance of resources provided by vocational colleges directly determines the quantity and importance of resources provided by enterprises. The stronger the symbiosis of resources, the more critical the resources gathered and generated, the greater the influence on the development of enterprises, and the more willing enterprises are to participate in collaborative education. Under the background of industrial transformation and upgrading in the new era, enterprises are increasingly dependent on human resources and technological innovation resources. In order to increase the proportion of these resource providers in the allocation of corporate social responsibility, enterprises are more willing to participate in collaborative education and fulfill more social responsibilities of vocational education.

The cost of enterprises participating in collaborative education refers to the additional costs or additional costs actually borne by enterprises for participating in collaborative education. The integration of production and education between enterprises and colleges and universities needs to invest some resources and occupy enterprise resources, such as enterprise equipment investment, employee training students, and provision of internship remuneration for students. In addition to the core cost and benefit considerations, risk assessment is also an important factor in corporate collaborative education. Enterprises participate in the integration of production and education, and the risks include: personal safety risks of students' internships, infringement of corporate intellectual property rights, and impact on employees' salary performance and work efficiency.

The benefits of enterprises participating in collaborative education refer to the various benefits that enterprises obtain during the period of participating in collaborative education, as well as the human resource reserve income and market benefits brought by the retention of students after the enterprise participates in collaborative education. It can be divided into economic benefits and non-economic benefits. From an economic perspective, an enterprise is an economic organization that links and organizes various production factors such as land, capital, and labor. Generally speaking, the resources that enterprises rely on mainly include four aspects: (1) land resources, (2) capital resources, (3) labor resources, and (4) entrepreneurial talents. As a company's development goals continue to improve, there will always be some kind of strategic gap between the company's resources and its goals. In order to obtain these resources, enterprises usually adopt the interactive method of cooperation. Obtain certain resources through cooperation. In addition, college education is an educational service that basically has the attributes of public goods (Li Yining, 1999). Colleges and universities internalize the external benefits of education through resource exchange. For example, enterprises use college brands to improve their social reputation and create a good corporate brand and image. Internalizing the external benefits of education through the market mechanism, such as the customer resources that universities bring to enterprises, and the expansion of business information channels for enterprises, we classify these benefits as spillover benefits.

In summary, the collaborative education of enterprises can be investigated from the dimensions of factor income, spillover income, cost perception, and risk assessment. On the basis of defining the concept, this article puts forward the following research hypotheses:

(1) Analysis of the relationship between various dimensions of cost-benefit and comprehensive intentions

Hypothesis 1: Factor income has a positive effect on comprehensive value;

Hypothesis 3: Cost perception has an inverse effect on comprehensive value;

Hypothesis 5: Spillover income has a positive effect on comprehensive value;

Hypothesis 7: Risk assessment has a negative effect on comprehensive value;

(2) Analysis of the relationship between the various dimensions of cost-benefit and the choice tendency of collaborative education

Hypothesis 2: Factor income has a positive effect on the selection tendency of collaborative education;

Hypothesis 4: Cost cognition has a reverse effect on the choice tendency of collaborative education;

Hypothesis 6: Spillover income has a positive effect on the selection tendency of collaborative education;

Hypothesis 8: Risk assessment has a negative effect on the choice tendency of collaborative education;

(3) Put forward the final hypothesis combining the above two aspects.

Hypothesis 9: A higher sense of comprehensive value can effectively increase the enterprise's tendency to choose collaborative education.

Based on the above nine research hypotheses, the following research model is proposed, as shown in Figure 1.

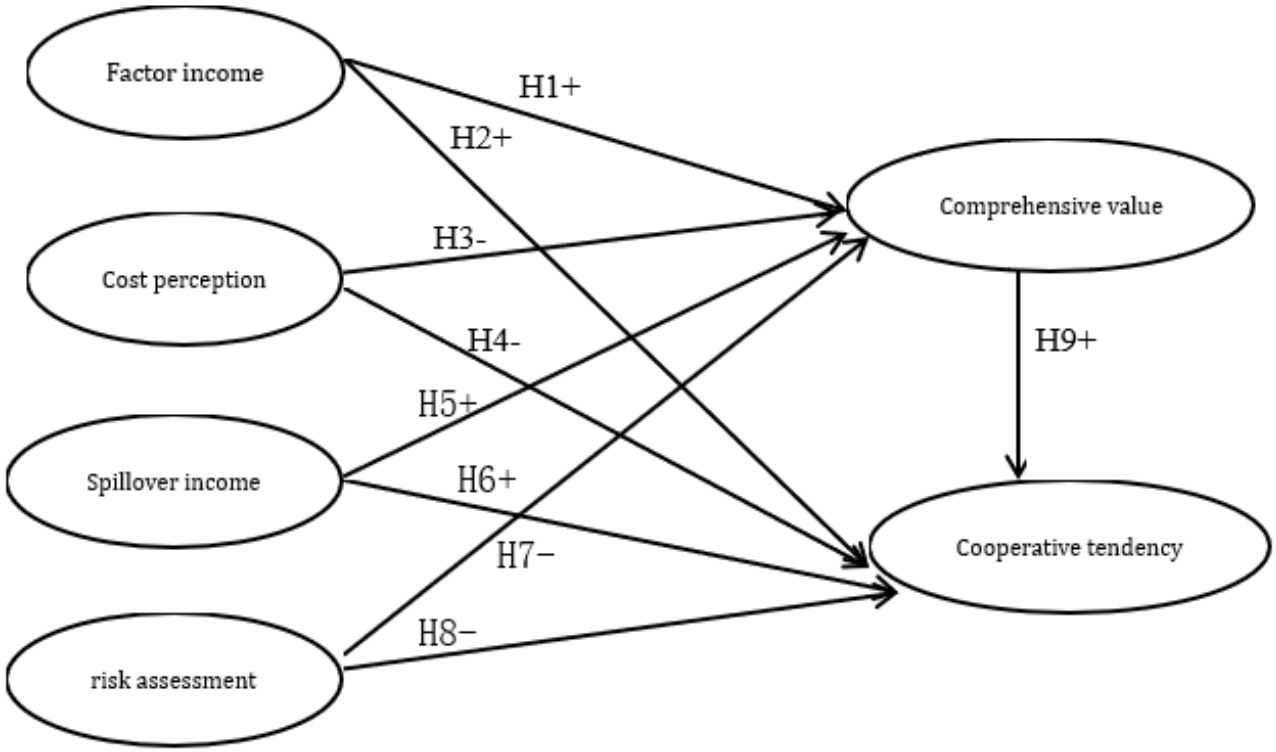

Figure 1. The adoption tendency model of enterprises' integration of production and education

4. Model Estimation Results and Analysis

This part uses the structural equation model related methods to measure the influence of the various dimensions of the enterprise's collaborative production-education fusion value perception on its adoption tendency.

(1) Reliability and validity analysis

Reliability and validity analysis is a key link in measuring the logic and validity of the data structure obtained by the questionnaire. The reliability and validity test of the sample data using spss25 shows that the overall α coefficient of the questionnaire is 0.964. The α coefficient of each latent variable is also above 0.89, and the specific data is shown in the table below.

Table 1. Cronbacha values of research variables

Variable	Number of Observed Indexes	Cronbacha
actor income	4	0.913
Spillover income	2	0.943
Cost perception	4	0.922
risk assessment	3	0.914
Cooperative tendency	3	0.892
Comprehensive value	3	0.929

It can be seen from the above table that the reliability of the questionnaire as a whole and the latent variables far exceeds the critical value of 0.5, indicating that the internal structure of the questionnaire has better logic and stability, and the data is more reliable. The KMO coefficient is 0.914, the Bartlett star test chi-square value is 2570.791, indicating that the questionnaire has high validity.

(2) Model evaluation

According to the previous theoretical analysis and research framework, the four measurement dimensions of comprehensive value perception are used as exogenous latent variables, and the comprehensive value perception and adoption tendency are used as endogenous latent variables. AMOS is used to set and verify the structural equation model path. Figure 2 of the full model (see Figure 2).

Table 2. The related indexes of the goodness of fit of the measurement model

Goodness of fit	Index name	Fit value	Result judgment
Absolute fit	χ 2 /df	1.808	good
	RMSEA	0.066	good
Parsimonious fit	PNEI	0.734	good
	PCFI	0.783	good
Value-added fit	NFI	0.823	Acceptable
	TLI	0.863	Acceptable
	CFI	0.878	Acceptable

From the evaluation of the fitting index of the structural equation model, the model as a whole meets the requirements of the relevant parameters. Figure 2 is a graph of the fitting results of the standardized coefficients of the modified model.

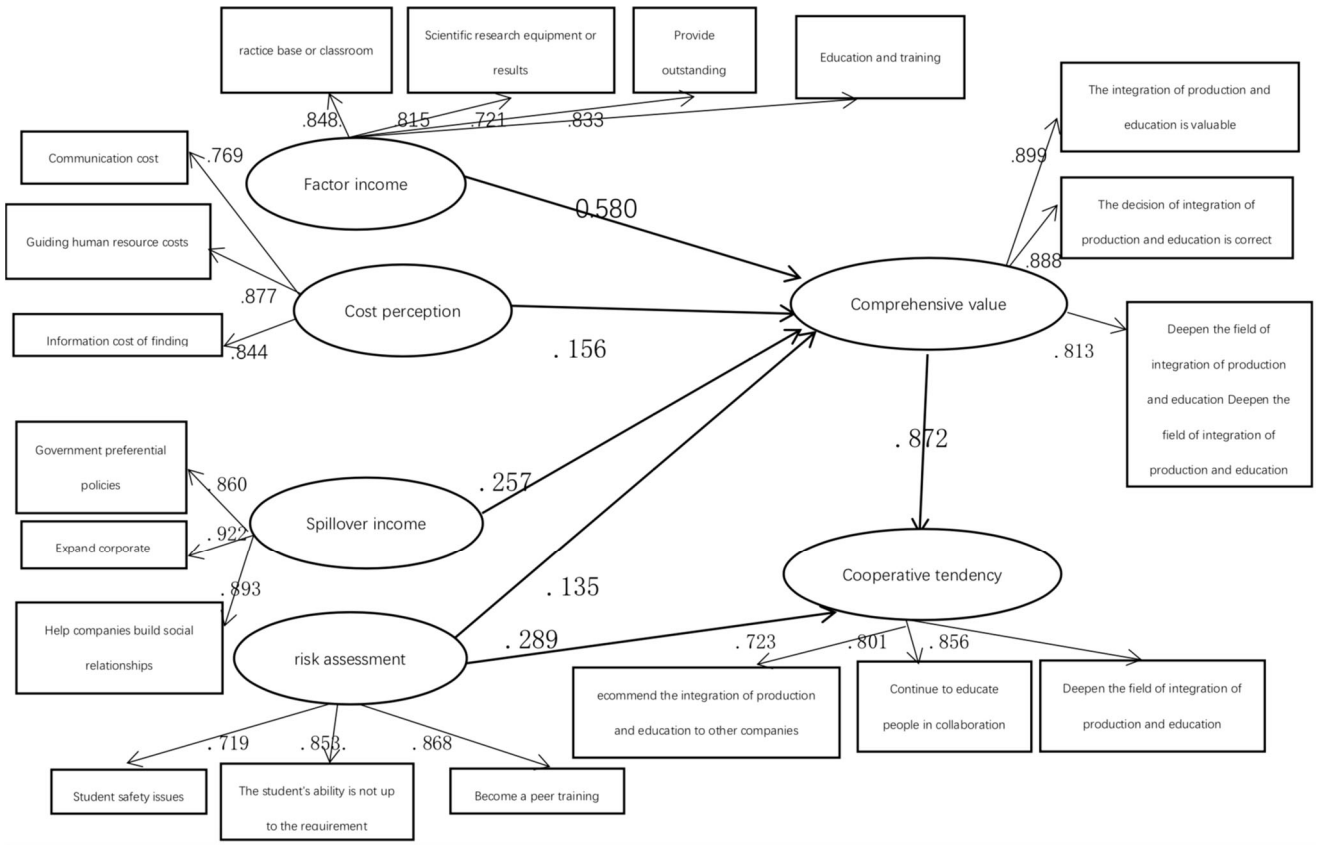

Figure 2. The fitting results of the standardized coefficients of the revised model

(3) Model results and total effect analysis

The path coefficients of the latent variables in the model structure are summarized. The direct effects, indirect effects, total effects and the final test results are shown in Table3.

Table 3. Effects and test conclusions among the latent variables

Research hypothesis	Direct effect	Indirect effect	Total effect	P	onclusion
H1: Factor income-->comprehensive value	.580	.000	.580	***	Significant
H3: Cost perception-->Comprehensive value	.156	.000	.156	.015	Significant
H5: Spillover Income-->Comprehensive Value	.257	.000	.257	***	Significant
H7: Risk Assessment-->Comprehensive Value	.135	.000	.135	.037	Significant
H2: Factor Benefits-->Cooperative Propensity	.059	.506	.565	.326	Not obvious
H4: Cost Perception-->Cooperative Tendency	.007	.136	.143	.882	Not obvious
H6: Spillover income --> Propensity to cooperate	.051	.224	.275	.282	Not obvious
H8 Risk Assessment-->Cooperative Tendency	.171	.118	.289	***	Significant
H9 Comprehensive Value-->Cooperative Tendency	.872	.000	.872	***	Significant

It can be seen from Table 2 that among the 9 paths proposed by the research hypothesis, H2, H4, and H6 fail the significance test, and the hypothesis conclusion is not supported.

The sample companies believe that factor benefits, spillover benefits, and cost perceptions are within the

controllable range expected by the company, and can be quantified or evaded through self-discrimination or other channels, and the current related benefits and costs are also very significant relative to business operations. Limited, and will not greatly affect the tendency to cooperate. However, risk assessment companies cannot predict, and there are currently no other channels for evasion or transfer. During the visit, we learned that companies are particularly sensitive and concerned about student safety issues. Companies generally report that student safety issues are second only to major corporate safety accidents. Risk assessment has become an important factor that affects the tendency of enterprises to cooperate.

Paths H1, H3, H5, H7, H8, and H9 passed the significance test, that is, the following hypotheses are supported:

(1) The expected benefits, cost cognition, spillover benefits, and risk assessment of the enterprise's integration of industry and education affect its comprehensive value perception. The path coefficient of factor income to the comprehensive value perception of the enterprise's integration of industry and education is 0.58 ($p<0.01$), indicating that the level of factor income is the main factor affecting the comprehensive value perception of the enterprise's integration of industry and education. The path coefficient of the spillover income to the comprehensive value perception of the enterprise's integration of industry and education is 0.257 ($p<0.01$), which is a secondary factor affecting the overall value perception of the enterprise's integration of industry and education. The effect of cost perception and risk assessment on the comprehensive value perception of the integration of industry and education is negative, and the path coefficients are -0.156 ($p<0.05$) and -0.135 ($p<0.05$), which means that the integration of industry and education will make enterprises feel that the cost is consistent with each other. The risk increases. From the observational variable scores, in the cost perception, "the cost of coordinating and negotiating with universities (mainly communication time and energy) regarding the content of the cooperation agreement is too high" and "the cost of human resources for training and guiding students in internships is too high" The scores are 3.658 and 3.603 respectively, and in the risk assessment, “Students’ safety issues during internship in the enterprise are difficult to be 100% guaranteed” and “Students’ ability does not meet the requirements of the enterprise” are worth 3.495 and 3.446 respectively. These items should be The key to the negative evaluation of the comprehensive value perception of the integration of production and education by enterprises.

(2) The risk assessment and comprehensive value perception of the integration of industry and education have a significant impact on its adoption tendency. The path coefficient of risk assessment on the tendency of industry-education integration is -0.289 ($p<0.01$). It can be seen that the higher the risk assessment, the enterprise will have a greater negative impact on whether industry-education integration is involved. The path coefficient of comprehensive value perception to the tendency of industry-education integration cooperation is 0.872 ($p<0.01$), which indicates that the comprehensive value perception is the key variable that affects whether the enterprise industry-education integration tendency or not.

5. Conclusion and Discussion

This paper constructs a research framework in which the comprehensive value perception of the integration of industry and education affects its cooperation tendency, uses the company’s field survey data to measure the level of the two dimensions, and uses the structural equation model to explore the effect of comprehensive value perception on the integration and cooperation of industry and education. The extent of the effect of the inclination.

The main research conclusions of this paper are as follows: First, there is a large room for improvement in the comprehensive value judgment and cooperation tendency of enterprises on the integration of industry and education. Second, from the perspective of risk assessment, student safety and student abilities are the main risks of an enterprise. Third, from the perspective of cost perception, the cost of communicating with colleges and universities and the cost of cultivating human resources are the main costs of enterprises. Fourth, the expected benefits and spillover benefits of enterprises on the integration of industry and education have a significant positive impact on their comprehensive value perception, and cost perception and risk assessment have a negative impact on it. Fifth, from the perspective of the influencing factors of the enterprise's industry-education integration and cooperation tendency, the comprehensive value perception has a positive effect on it, and the risk assessment has an obvious negative inhibitory effect on it.

The policy implications of the research conclusions of this article are as follows: First, colleges and universities enhance their own superior resources and build educational superior brands. Colleges and universities promote the internal elements of the organization, gather high-quality student resources, technical resources, scientific research resources, and intellectual resources to solve the problems of labor supply, technology, management and other issues for enterprises, and help enhance their market competitiveness. Second, establish a corporate economic cost sharing mechanism. The government finances subsidize part of the cost of "the provision of internship positions by the enterprise, which will cause interference and loss to the business operation of the enterprise, affect the production efficiency of the enterprise, cultivate and guide the human resources of students internship, and pay the students' internship remuneration. Cultivate a sound legal and regulatory system environment, laws and regulations divide the risks of student safety and other costs and define the responsibilities of both schools and enterprises.

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