

Profit Expectation, Cost Perception, Risk Assessment, and Decision-making for the Integration of Industry and Education

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Abstract

Constructed a research framework in which the comprehensive value perception of the integration of industry and education affects its cooperation tendency, and verified the company's field survey data. The results show that the sample companies have the following characteristics: (1) The company's comprehensive value judgment and cooperation tendency of the integration of industry and education, There is a lot of room for improvement. (2) From the perspective of risk assessment, student safety and student abilities are the main risks of an enterprise. (3) From the perspective of cost perception, the cost of communicating with universities and cultivating human resources is the main cost of an enterprise. (4) The expected benefits and spillover benefits of the enterprise's integration of industry and education have a significant positive impact on its comprehensive value perception, while cost perception and risk assessment have a negative impact on it. (5) From the perspective of the influencing factors of the enterprise's integration and cooperation tendency of production and education, comprehensive value perception has a positive effect on it, and risk assessment has an obvious negative inhibitory effect on it.

Keywords

Integration of industry and education; Comprehensive value perception; Risk assessment; Enterprise; Structural equation model.

1. Introduction

The social reputation and recognition of a university is determined by the quality of its personnel training. In the context of the new economic normal, "mass entrepreneurship and innovation" have become a new driving force for economic development. "Double-creation" talents refer to both innovative consciousness, innovative thinking, innovative ability and innovative personality, but also entrepreneurial consciousness, entrepreneurial spirit and entrepreneurial ability (Zheng Yajuan, 2011). The training model of innovative and entrepreneurial talents is fundamentally different from the traditional talent training model. The training of innovative and entrepreneurial talents pays more attention to the expansion and opening of educational space, so that school education and social practice can be "seamlessly connected" (Yin Xiang, Xi Furong, 2015). Therefore, the cultivation of college students' innovative and entrepreneurial ability has become a new focus of society's attention to higher education, and it is also the development direction of future vocational education.

"Double innovation" education is a complex system project. Higher vocational colleges have insufficient software and hardware for "double innovation" education, which is manifested in the shortage of teachers with the ability of "double innovation" education, and the shortage of funds for the cultivation of innovation and entrepreneurship. Hardware conditions for innovation and entrepreneurship training. How to obtain the resource elements needed for talent training, and how to break the bottleneck issues such as the occlusion of the entrepreneurial ecological environment? From the perspective of regional economic

development, social organizations with enterprises as the main body integrate various educational elements such as employment education, professional education, and quality education, and have a more direct practical environment. Therefore, integrating corporate resources and cultivating "double innovation" talents in collaboration between schools and enterprises is a new way of thinking for talent training in higher vocational colleges.

There are two major problems in the collaborative training of "double innovation" talents that all parties only consider their own interests, the same bed has different dreams, and the consideration of different interests is difficult to eliminate barriers between each other (Zhang Jiyan, 2016). In the process of practice, it is difficult for the two main bodies of universities and enterprises to produce a simultaneous joint effect. Sometimes, because of the lack of scientific operation mechanism, collaborative training just floats on the surface, and cannot form the same effect of $1+1>2$. Similarly, in the actual talent training process, we are all confused: in the process of cooperating with the enterprise, which key link went wrong, and why the talent training is difficult to achieve the expected results. Therefore, what are the key influencing factors for school-enterprise collaborative training of "double innovation" talents, and how to act, become a problem that we urgently need to solve. Find out the key influencing factors, understand the path of action, and apply their practice to the collaborative training of "double innovation" talents between universities and enterprises. Only by collaborative training between universities and enterprises can we go further and longer.

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

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

At the theoretical level, due to the relatively short practice time of innovation and innovation education in China, most of the theoretical analysis is mainly focused on school-enterprise cooperation, and less focused on school-enterprise collaboration. Fu Xujian (2016) uses cognitive learning theory to analyze innovation and innovation education; Li Li (2016) uses the synergy theory to analyze the integration path of entrepreneurship talents from three aspects: strategic collaboration, knowledge collaboration, and organizational collaboration; Wang Yongli (2017) uses the stakeholder theory to analyze that the training of entrepreneurship talents should be among many stakeholders Seek a balance to maximize the interest expectations of all stakeholders.

From an enterprise perspective, Zhang Chi (2017) believes that the need for common interests is the common interest orientation of both schools and enterprises in terms of talents and technical skills. As direct stakeholders, companies need certain economic, institutional, and moral power to participate in collaboration (Yao Shuwei, 2014), among which companies are most concerned about direct economic benefits (Wu Yusheng, 2016); companies need innovation and entrepreneurial manpower from universities The input and cooperation of resources requires the use of collaborative innovation to save their own human capital and form a $1+1>2$ human resource value-added effect (Li Li, 2016).

From the perspective of higher vocational colleges, the cultivation of innovative and entrepreneurial talents with industry and corporate cognition backgrounds is an important driving force for local application-oriented universities to serve the transformation and

upgrading of local enterprises (Lü Qiujun et al., 2013). Double innovation education and regional economy are sufficient. The combination can help local colleges and universities achieve their transformation goals more effectively (Fu Xujian, 2016). At the practical level, some domestic colleges and universities have also tried a variety of organizational coordination paths and formed a variety of organizational forms during the transformation process. For example, on-campus internship training bases, engineering centers, secondary colleges with industry-specific characteristics, innovation and entrepreneurship parks, science and technology parks, etc., there are also school-enterprise collaborations to establish small businesses, factory-in-school, school-in-factory models, etc. In-depth exploration of the path of organizational collaboration between universities and enterprises (Li Li, 2016).

At present, a research system with the theme of "double innovation" talents in collaboration between schools and enterprises has not yet been formed, which is related to the short practice time of double innovation education in my country. Most of the literature studies related to the school-enterprise collaborative training of "double entrepreneurship" talents are qualitative studies. The research mainly focuses on the interests of enterprises and the practical exploration of higher vocational colleges. There is no relevant research that analyzes the key to school-enterprise collaboration from a quantitative perspective. Influencing factors and their path of action; 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 path of action. Based on this, this article intends to draw on the relevant results of Ran Yunfang (2018) in terms of corporate costs and benefits, and propose basic concepts such as the comprehensive perception of the value of corporate collaborative education and related dimensions, and the adoption tendency of corporate collaborative education. Based on the school-enterprise collaborative enterprise The cross-sectional data collected by the questionnaire survey is planned to adopt the structural equation model to identify the key influencing factors of enterprises participating in the collaborative training of "double innovation" talents in higher vocational colleges, and then explore practical construction paths or measures.

3. Theoretical Analysis and Model Construction

From an economic perspective, an enterprise is an economic organization that connects 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. With the continuous improvement of the company's development goals, there will always be a certain strategic gap between the company's resources and the company's goals. In order to obtain these resources, companies usually adopt the interactive method of cooperation. Obtain certain resources through cooperation.

University education is basically an education service with the attributes of public products (Li Yining, 1999). Universities internalize educational external benefits through resource exchange. For example, companies use university brands to improve corporate social reputation and create good corporate brand and image; companies use the market. The mechanism internalizes the external benefits of education, such as the customer resources brought by colleges and universities to enterprises, and the expansion of corporate business information channels. These benefits are classified as spillover benefits.

The integration of production and education between enterprises and colleges and universities needs to invest some resources, occupying enterprise resources, such as investment in enterprise equipment, staff training students, and providing student internship remuneration. In addition to the core cost and benefit considerations, risk assessment is also an important factor in the collaborative education of enterprises. The risks of enterprises participating in the

integration of industry and education include: personal safety risks of student internships, infringement of corporate intellectual property rights, and impact on employees' salary performance and work efficiency.

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.

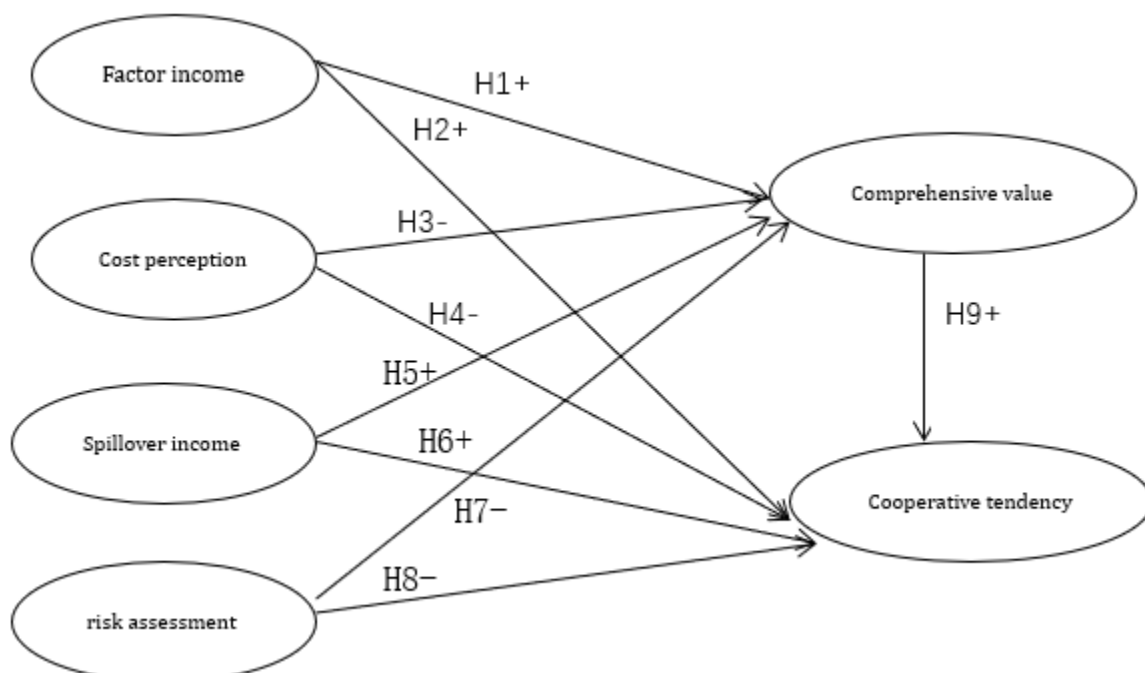


Figure 1. The adoption tendency model of enterprises' integration of production and education

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.

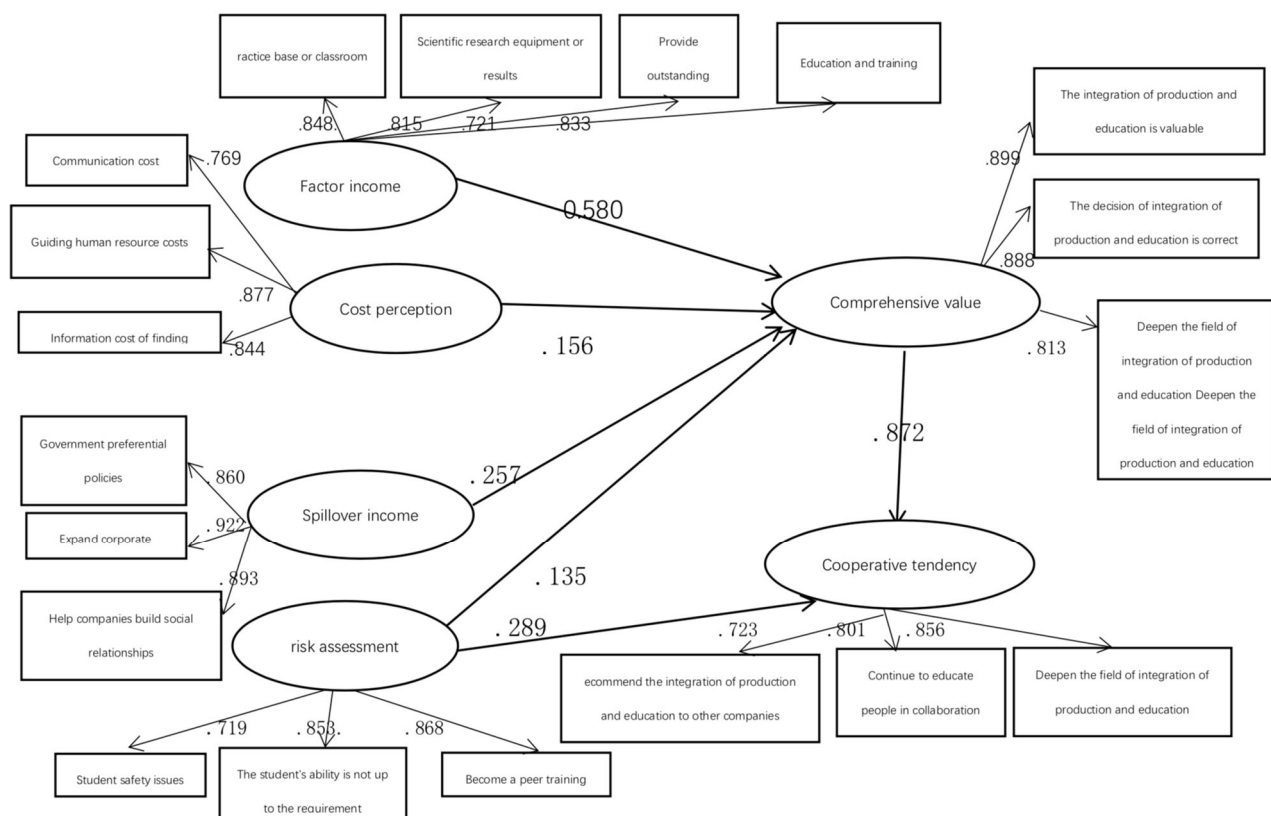


Figure 2. The fitting results of the standardized coefficients of the revised model

(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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