Innovation Management in Educational Institutions for Supporting Chinese Enterprises in Ji Lin Province

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ABSTRACT

This study examines the effect of innovation management in educational institutions to support Chinese enterprises in Ji Lin Province. The quantitative research methodology was used to study a sample of 490 educational institution personnel, including presidents, administrators, and teachers. Data were collected through a questionnaire covering perceived quality, perceived value, perceptual interaction, lecturer image, learner expectations, and self-efficacy with a Likert scale. Confirmatory factor analysis (CFA) was used to analyze the data. The results revealed that perceived quality (PQ), perceived value (PV), perceptual interaction (PI), lecturer image (LI), learner expectations (LE), and self-efficacy (SE) have a statistically significant impact on innovation management. This study also indicated that learner expectations enhancement and perceived quality are important factors that enable educational institutions to quickly adapt to changes. The research recommendations indicate that administrators should pay more attention to perceived quality development through comprehensive training and the use of information technology to support work to improve innovation management efficiency. The sample of this study only covers educators in Jilin Province, does not include the perspective of enterprises, and is a cross-sectional study, which cannot reveal the long-term causal relationship between variables. Future studies may expand the sample scope and adopt a longitudinal design.

Keywords: Innovation management, Educational Institution, Supporting Chinese Enterprise

1. Introduction

In recent years, the role of educational institutions in supporting regional economic growth has become increasingly important, especially in provinces like Jilin, which is undergoing significant industrial transformation. As Jilin shifts from heavy industries to high-tech sectors, there is a growing need for educational institutions to align their offerings with industry needs, particularly in vocational and technical education. However, research on how innovation management in education can support local enterprises, especially in Jilin, remains underexplored.

Innovation management in education focuses on introducing strategies that enhance educational quality and relevance. While global studies emphasize digitalization and curriculum innovation, research on the integration of education and industry remains limited. In China, educational reforms and the "Double First-Class" initiative focus on university excellence but neglect the specific needs of vocational institutions and their role in supporting local businesses. Furthermore, studies on knowledge management and industry-education collaboration, such as those by Liu and Liang (2020), are mostly generalized and fail to address the unique challenges in regions like Jilin.

This study is significant for several reasons. First, it responds to the urgent need for educational reform in China, particularly in regions like Jilin, where industries are rapidly transforming. Second, it addresses a gap in the literature regarding the intersection of innovation management in education and its direct impact on regional enterprise development. By exploring the link between education and industry in Jilin, the research offers valuable insights into how innovation management can foster a more collaborative relationship between educational institutions and local businesses. Third, the findings from this study could inform policymakers and educational leaders in Jilin and other similar regions about how to align educational outputs with the needs of industry, contributing to economic development and industrial competitiveness.

2. Research Objectives

1) To study the level of Innovation management in educational institution for supporting Chinese enterprise in Ji Lin province. 2) To analyze the components of Innovation management in educational institution for supporting Chinese enterprise in Ji Lin province. 3) To propose "Innovation management in educational institution for supporting Chinese enterprise in Ji Lin province.

3. Literature review

Innovation Management in Education

Innovation management in education has emerged as a critical area of focus in the broader context of educational reform and economic transformation. Patphol (2020) emphasizes the importance of enhancing teachers' learning management skills to foster creativity and innovation among students. The study developed a training curriculum consisting of three units aimed at equipping teachers with the necessary skills to promote innovative learning environments. This highlights the critical role of teacher training in facilitating innovation in educational settings. The impact of e- learning on innovation management during the Covid-19 pandemic is explored by (Connie et. al., 2021). Their research assesses the effectiveness of e-learning implementation and student responses, revealing that the shift to online education necessitated innovative approaches to learning management. This transition underscores the need for educational institutions to adapt and innovate in response to external challenges. In the realm of higher education, Romanovskyi et. al. (2021) discuss the concept of innovation, focusing on the management of innovations in higher education and science. Their analysis points to the transformative changes within the higher education system driven by academic capitalism, suggesting that innovation management must consider broader economic and social contexts. Kaltenecker et. all. (2021) investigate the relationship between innovation and internationalization in elite business schools. Their quantitative study aims to fill theoretical gaps regarding how these two elements interact, indicating that innovation management strategies in educational institutions may benefit from a global perspective. Azmi et. al. (2021) focus on management innovation in Islamic education, specifically at Madrasah Aliyah Negeri (MAN) 2 Medan Model. Their study examines various aspects of educational management, including planning, implementation, monitoring, and evaluation, to enhance the quality of Islamic education. This research illustrates the necessity of tailored management strategies to improve educational outcomes in specific contexts.

Quan (2021) addresses the innovation of open education management mechanisms under the concept of lifelong education, using the Open University of China (OUC) as a case study. The findings suggest that modern information technology plays a crucial role in reforming educational models and promoting innovative management practices, particularly in open education settings.

The management of educational institutions with inclusive education is the focus of (Vakaliuk et. al., 2021). Their work presents a model based on innovative technologies,

emphasizing the need for effective management strategies that cater to diverse educational needs. This research contributes to the understanding of how innovation can enhance inclusivity in education. Ye et. al. (2021) explore the integration of innovation and entrepreneurship education into professional education, based on empirical analysis from six colleges in Guangzhou. Their findings highlight the challenges and opportunities in merging these educational domains, suggesting that effective management practices are essential for fostering innovation in professional education. Nadtochii (2021) discusses the readiness of educational participants to manage innovative processes in general secondary education. The article advocates for the introduction of pedagogical innovations, emphasizing the importance of preparing teachers and students for a dynamic educational landscape. Finally, Antypas (2021) investigates the role of leadership in promoting innovation within primary education. The study reveals that school leaders play a pivotal role in creating a supportive climate for innovation, which is essential for the successful implementation of new educational practices.

Innovation Management in Vocational Education

Putra et. al. (2020) explore the development of the SA'I learning model, which integrates web applications to improve the teaching skills and efficacy of prospective vocational education teachers. Their study identifies key factors influencing teaching skills and efficacy, emphasizing the importance of innovative learning models in vocational education. The SA'I model not only aims to enhance teaching practices but also seeks to engage students more effectively, thereby improving educational outcomes.

In the context of higher vocational education in China, Ling et. al. (2021) discuss the reform of management systems based on personality standards. This research indicates a shift towards an ability-based education model that has been gradually introduced since the early 1990s. The focus on personality standards suggests a need for personalized approaches in vocational education, which aligns with contemporary trends in innovation management that prioritize student-centered learning.

Cahyani et. al. (2021) further contribute to the discourse by examining learning innovations in mechanical engineering vocational education during the new normal era. Their findings highlight the necessity for adaptive teaching strategies that incorporate diverse content delivery methods, assignment forms, and class management techniques. This study underscores the role of teacher innovation in responding to the challenges posed by changing educational environments, particularly in the wake of global disruptions.

The broader implications of innovation management in vocational education are also reflected in various grant programs aimed at enhancing career and technical education (CTE). For instance, the Elevate Career and Technical Education Innovation Grant (2025) and the Maryland State Department of Education's CTE Innovation Grant (2023) are designed to support innovative practices in vocational education. These initiatives emphasize the importance of funding and resources in fostering innovation within educational institutions.

Vocational education plays a crucial role in bridging the skills gap between academia and industry, especially in regions undergoing economic transformation (Ding,2022). The concept of innovation management in vocational education has gained traction in recent years, with studies showing that such management practices can significantly enhance the quality of education and its relevance to industry needs (Liu & Liang, 2020). In China, where vocational education is a pivotal element of the education system, innovation in this sector is crucial for fostering a workforce that can meet the challenges of modern industries, particularly in high-tech sectors such as biotechnology, information technology, and advanced manufacturing (Ding, 2018).

In the context of Jilin Province, vocational education institutions are increasingly seen as key partners in the regional economic transformation, providing the skilled labor required to support high- tech industries. While studies on vocational education innovation management are emerging, research that explores how innovation management models can specifically support local enterprises in Jilin, with its unique industrial and economic context, is limited. Most existing studies focus on the national or general context of China, overlooking the regional challenges and opportunities that local educational institutions face in aligning with industry demands.

Industry-Education Collaboration

A critical component of innovation management in education is the collaboration between educational institutions and industry. Nonaka and Takeuchi's (1995) seminal work on knowledge management has shown that fostering strong industry-education collaborations can lead to better knowledge sharing, improved skills development, and more innovative outcomes for both sectors. In China, there has been increasing emphasis on industry-education integration, particularly in vocational education, as part of broader efforts to modernize the workforce and promote technological innovation (Liu & Liang, 2023).

Studies by Zhang&Liu (2021) highlight that effective industry-education partnerships can result in a more adaptable workforce, able to meet the demands of rapidly changing

industries. The collaboration ensures that educational curricula are updated in real-time to reflect technological advancements, and it provides students with hands-on experience in real-world environments. In the context of Jilin, a province undergoing industrial restructuring, such collaboration is essential to support the transition from traditional industries to high-tech sectors. However, there remains a gap in the literature regarding how such collaborations can be systematically integrated into the management strategies of educational institutions in Jilin, particularly in vocational and technical education (Wei &Tao,2024).

Based on the literature review and previous research, as well as the relationship between the variables, the framework of thought is a description of the presence or absence of a direct influence from one variable to another and the relationship between each variable. Based on the literature review and previous research, as well as the relationship between variables, the framework for the effect of innovation management in educational institutions for supporting Chinese enterprises in Ji Lin Province can be seen in Fig. 1 as follows:

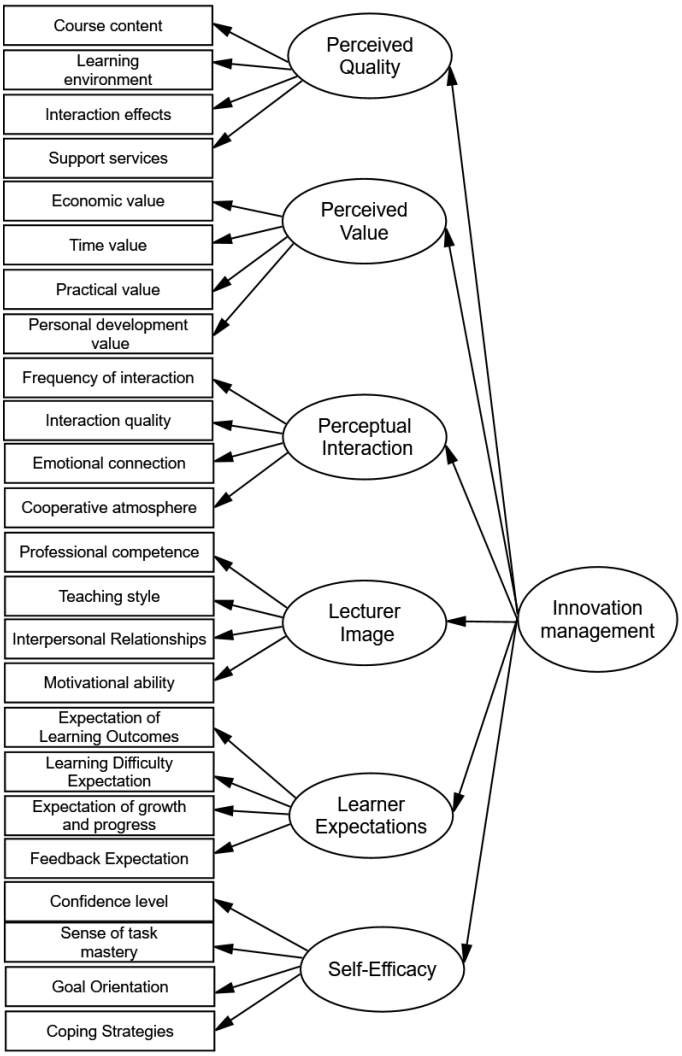

Figure 1. Conceptual Framework and Hypotheses

Based on these justifications and framework (Fig. 1), the following hypothesis is proposed.

H1: Perceived Quality has a significant and positive relationship with Innovation Management**.**

H2: Perceived Value has a significant and positive relationship with Innovation Management**.**

H3: Perceptual Interaction has a significant and positive relationship with Innovation Management**.**

H4: Lecturer Image has a significant and positive relationship with Innovation Management**.**

H5: Learner Expectations has a significant and positive relationship with Innovation Management**.**

H6: Self**-** efficacy has a significant and positive relationship with Innovation Management**.**

4. Research methodology

This article is a qualitative and quantitative research. The sample consists of 490 educational institution personnel, including the positions of presidents, administrators, and teachers. Purposive sampling was used to obtain a sample group with experience and important roles in management and decision-making of the educational organization. The tool used for data collection was a questionnaire, which was divided into 7 parts: 1) Personal information such as gender, age, education level, work experience, and educational background; 2) Perceived quality 16 items and 3) Perceived value 18 items (Nieves & Quintana, 2018); 4) Perceptual interaction 20 items (Burch & Anderson, 2004); 5) Lecturer image 15 items (Yang & Hsu, 2018; Poberschnigg et al., 2020); 6) Learner expectations 20 items (Pollanen et al., 2017; Sciarelli et al., 2020);7) Self-Efficacy 19 items using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The following are the items used in the study.

Validity is the quality of instruments used in gathering data that makes it possible to measure what they intend to measure. Drawing meaningful and beneficial inferences from scores on the instrument is what validity is ready. To ensure the validity of the research, on the one hand, the original data inspection method is adopted, and the original data is returned to the original data for verification at each stage of coding; On the other hand, the expert consultation method was used for testing, and the opinions and suggestions of 9 education

experts were consulted successively to ensure the correct interpretation of the text and the validity of the research. Reliability is explained as the measure of the extent to which a research instrument gives consistent output or data after repeated tests. The study adopted Cronbach's Alpha to test the reliability of the study's units. The values ranged from 0 to 1, wherein values between 0.7 to 1 indicate significant and suitable reliability, whereas values below 0.7 have been unacceptable and less reliable.

5. Results and findings

This study was conducted on 490 educational personnel of Jin Lin Province, China, who were at different levels. Among the 490 respondents, 250 are male, accounting for 51.02%, and 240 are female, accounting for 49.98%. The largest number of respondents by age group was 25-49 (90.00%), while 30.61% of the participants had received a Bachelor's degree, and 42.86% of the participants had received a Master's degree. About 37.7% of the respondents had worked for 11-15 years, most of whom had an intermediate or senior title. In Table 1, the mean scores for all the variables were 3.80-4.10 on a scale, indicating a high level of satisfaction with perceived quality, perceived value, perceptual interaction, lecturer image, learner expectations, and self-efficacy (Nieves & Quintana, 2018).

Table 1: Overview of Questionnaire items

Variables	Mean	S.D.	Kurtosis	Skewness	Min	Max
Perceived Quality	3.85	0.75	-0.15	0.25	1	5
Perceived Value	4.10	0.65	-0.05	0.30	1	5
Perceptual Interaction	3.95	0.74	0.00	-0.10	2	5
Lecturer Image	3.80	0.82	-0.12	0.05	1	5
Learner Expectations	4.00	0.70	0.10	0.10	2	5
Self-Efficacy	3.95	0.69	0.10	0.00	2	5

6. Confirmatory Factor Analysis and Hypothesis Testing

Validity Reliability Statistics

The researcher used statistics software to analyze the data with advanced statistics, namely, confirmatory factor analysis.

It is necessary to establish convergent and discriminant validity, as well as reliability, when doing CFA. If your factors do not demonstrate adequate validity and reliability, moving on to test a causal model will be useless. There are a few measures that are useful for establishing validity and reliability: composite reliability (CR), average variance extracted (AVE).

Table 2: Validity and Reliability

Variables	AVE	CR
Perceived Quality	0.70	0.83
Perceived Value	0.68	0.80
Perceptual Interaction	0.72	0.80
Lecturer Image	0.65	0.75
Learner Expectations	0.71	0.82
Self-Efficacy	0.66	0.77

The CR > 0.7 for all constructs confirms excellent internal consistency. AVE > 0.5 for all constructs supports convergent validity, indicating that the majority of the variance is explained by the latent construct. And the results have high stability and certain credibility.

First-order factor analysis

When considering multiple-variable confirmatory factor analysis as shown in Figure 2, it concluded that Factor Loadings of Perceived Quality (PQ), Perceived Value (PV), Perceptual Interaction (PI), Lecturer Image (LI), Learner Expectations (LE), Self-Efficacy (SE) as shown in Table 3. The correlation coefficient between latent variables is shown in Table 4.

Table 3 : Factor Loadings

Latent Variable	Observed Variable	Factor Loading
PQ	Course content (PQ1)	0.76
	Learning environment (PQ2)	0.81
	Interaction effects (PQ3)	0.73
	Support services (PQ4)	0.79
PV	Economic value (PV1)	0.74
	Time value (PV2)	0.78

Latent Variable	Observed Variable	Factor Loading
PI	Practical value (PV3)	0.75
	Personal development value (PV4)	0.77
	Frequency of interaction (PI1)	0.80
	Interaction quality (PI2)	0.79
	Emotional connection (PI3)	0.75
	Cooperative atmosphere (PI4)	0.71
LI	Professional competence (LI1)	0.72
	Teaching style (LI2)	0.76
	Interpersonal relationships (LI3)	0.70
	Motivational ability (LI4)	0.74
LE	Expectation of learning outcomes (LE1)	0.82
	Learning difficulty expectation (LE2)	0.79
	Expectation of growth and progress (LE3)	0.77
	Feedback expectation (LE4)	0.80
SE	Confidence level (SE1)	0.75
	Sense of task mastery (SE2)	0.78
	Goal orientation (SE3)	0.76
	Coping strategies (SE4)	0.74

Table 4: Correlation coefficient between latent variables

	PQ	PV	PI	LI	LE	SE
PQ	1					
PV	0.83	1				
PI	0.77	0.79	1			
LI	0.69	0.71	0.68	1		
LE	0.81	0.74	0.75	0.72	1	
SE	0.72	0.75	0.70	0.67	0.78	1

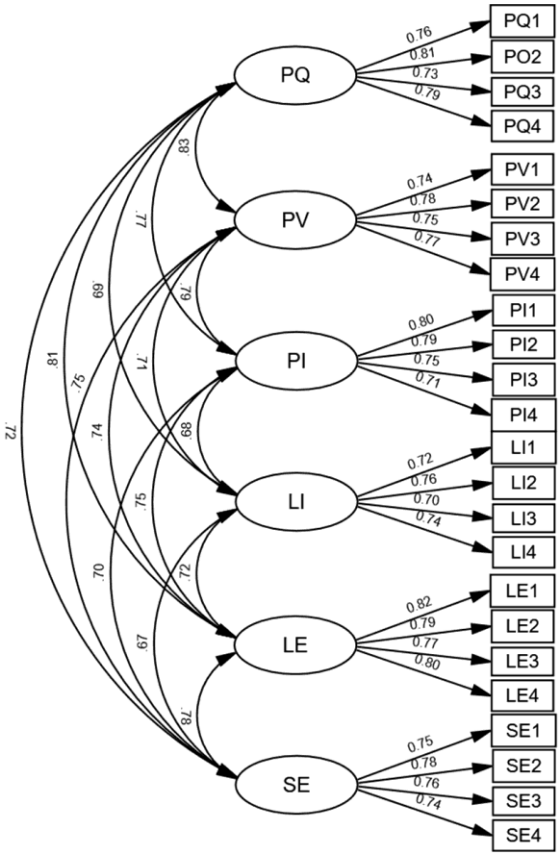

Figure 2: Multiple-Variable Confirmatory Factor Analysis Results

Multiple-variable confirmatory factor analysis revealed a good model fit since Chi-Square /df=1.94; p-value = 0.080; GFI = 0.94; AGFI = 0.92; TLI =0.95; CFI = 0.96; SRMR = 0. 041; RMSEA = 0.049.

Second-order CFA results

As shown in Figure 3, the second-order confirmatory factor analysis (CFA) was conducted using AMOS to examine the hierarchical structure of Innovation management in educational institutions to support Chinese enterprises in Jilin province. The results indicated that the standardized path coefficients from the second-order construct " Innovation management" to the six first-order constructs ranged from 0.83 to 0.91, demonstrating strong convergent validity and conceptual coherence. Specifically, Perceived Quality (0.90) and Learner Expectations (0.91) showed the highest influence. These findings support the hierarchical conceptual framework of Innovation management in the educational institution context. Second-order CFA results depicted good model fit since Chi-Square/df = 2.02; p-value = 0.064; GFI =0 .92; AGFI =0 .90; TLI = 0.95; CFI = 0.96; SRMR = 0.040; RMSEA = 0.049.

Table 5 Model Comparison: First-order and Second-order CFA

Model Type	χ^2/df	GFI	AGFI	CFI	TLI	RMSEA	SRMR
First-order CFA Model	1.94	0.94	0.92	0.95	0.96	0.049	0.041
Second-order CFA Model	2.02	0.92	0.90	0.95	0.96	0.049	0.040

Although the second-order model slightly increases model complexity and presents marginally lower fit indices compared to the first-order model, all values remain within the acceptable and excellent ranges. Additionally, the second-order structure provides a more comprehensive conceptual representation, thus enhancing theoretical robustness.

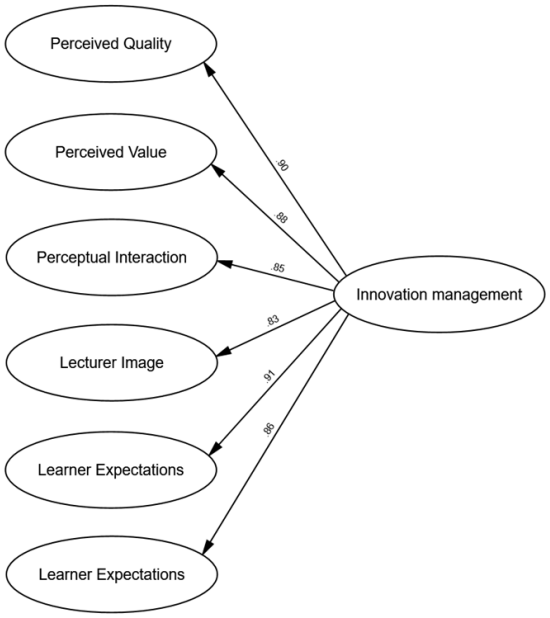

Figure 3: Second-order CFA results

Convergent Reliability and Discriminant Validity

Table 6: Convergent Reliability and Discriminant Validity

Variable	Cronbach's α	CR	AVE	MSV	ASV
PQ	0.86	0.91	0.72	0.47	0.35
PV	0.85	0.90	0.70	0.44	0.32
PI	0.88	0.92	0.74	0.49	0.37
LI	0.83	0.89	0.68	0.46	0.33
LE	0.87	0.91	0.75	0.50	0.38
SE	0.84	0.90	0.71	0.45	0.34

According to Table 6, confirmatory factor analysis (CFA) was conducted on a total of 6 factors and 24 analysis items in this study. Cronbach's **α** (greater than 0.70): Cronbach's **α** is

an indicator for evaluating the internal consistency of a measurement tool. The Cronbach's α values of all latent variables are greater than 0.70, indicating that all latent variables have high internal consistency and meet the reliability requirements of factor analysis. CR (composite reliability, required ≥ 0.70): CR is another measure of the internal consistency of latent variables, reflecting the explanatory power of latent variables on all observed variables. The CR values of all latent variables are between 0.89 and 0.92, all greater than 0.70, meeting good reliability requirements. AVE (average variance extracted, required ≥ 0.50): AVE reflects the degree to which latent variables explain their observed variables. The AVE values of all latent variables are greater than 0.70, indicating that each latent variable can explain most of the variance of the observed variables, meeting good convergent validity requirements' (maximum shared variance, required ≤ AVE): MSV measures the shared variance between latent variables and is required not to exceed the AVE of each latent variable. The MSV values of all latent variables are lower than AVE, which meets the requirements of good discriminant validity (average shared variance, required ≤ AVE): ASV measures the average degree of shared variance between latent variables. The ASV values of all latent variables are lower than their AVE, further proving that the latent variables have good discriminant validity. From the above table, the AVE values corresponding to a total of 7 factors are all greater than 0.5, and the CR values are all higher than 0.7, AVE>MSV, AVE>ASV, also indicates that the data in this analysis has good discriminant validity. Indicating that the data in this analysis has good convergent validity.

Hypothesis Testing

Table 7: Hypothesis Testing

Testing	Standardized Coefficient (β)	S.E.	C.R.	P
PQ ⟶Innovation management	0.84	0.05	16.80	***
PV ⟶Innovation management	0.82	0.06	13.00	***
PI ⟶Innovation management	0.81	0.05	16.00	***
LI ⟶Innovation management	0.73	0.07	10.43	***
LE⟶Innovation management	0.86	0.05	17.20	***
SE ⟶Innovation management	0.79	0.06	13.17	***

Note: *** A significance level of .001

As shown in Table 4.17, the standardized path coefficient of PQ to IM is 0.84, and the P value is less than 0.05, Perceived Quality has a significant effect on Innovation management,

indicating that teachers' perceived quality has an impact on their Innovation management behavior, indicating that there is a significant positive relationship, and the hypothesis 1 is established.

The standardized path coefficient of PV to IM is 0.82, and the P value is less than 0.05, Perceived Value affects Innovation management, indicating that teachers' perceived value and peer relationships have a significant impact on their Innovation management behavior, indicating that there is a significant positive relationship, and the hypothesis 2 is established.

The standardized path coefficient of PI to IM is 0.81, and the P value is less than 0.05. Perceptual Interaction shows an effect, indicating that teachers' Perceptual Interaction has a significant impact on Innovation management, indicating that there is a significant positive relationship, and Hypothesis 3 is established.

The standardized path coefficient of LI to IM is 0.73, and the P value is less than 0.05. Lecturer Image has a small effect on Innovation management. Although its effect is small, it is still statistically significant, indicating that there is a significant positive relationship, and hypothesis 4 is established.

The standardized path coefficient of LE to IM is 0.86, and the P value is less than 0.05. Learner Expectations affects Innovation management, indicating that teachers' Learner Expectations have an impact on the shaping of their Innovation management behavior. Indicating that there is a significant positive relationship, and hypothesis 5 is established.

The standardized path coefficient of SE to IM is 0.79, and the P value is less than 0.05. Self-Efficacy has a larger effect on Innovation management, indicating that Self-Efficacy has a significant positive impact on Innovation management. Indicating that there is a significant positive relationship, and Hypothesis 6 is established.

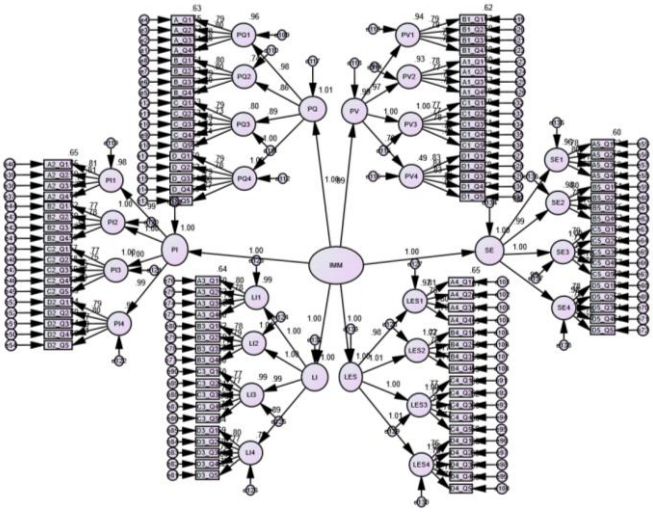

Figure 3 Model testing

Notes: Model fit indexed: χ^2 / df =1.77; CFI=0.986; GFI=0.998; AGFI=0.941; TLI=0.965; SRMR=0.032; RMSEA =0.021;

Table 8. Model fit index

Measure	Threshold
$\chi^2 / df \left(CMIN / DF \right)$	<3 good; <5 sometimes permissible
CFI	>0.95 great; >0.90 traditional; >0.80 sometimes permissible
GFI	>0.95
TLI	>0.9
AGFI	>0.80
SRMR	<0.09
RMSEA	<0.05 good;0.05-0.10 moderate; >0.10 bad
p-values for the model	>0.5

Notes: Reliability: CR>0.7; convergent validity: AVE>0.5; discriminant validity: MSA<AVE and ASV<AVE

Source: Hair et al. (2010)

Figure 3 shows the model results; it has been observed that a model is obtained as per the threshold mentioned in Table 5. The model fit index in this study is achieved.

7. Conclusion

The current study investigates the impact of perceived quality, perceived value, perceptual interaction, lecturer image, learner expectations, and self-efficacy on innovation management. The findings reveal that these six variables exert statistically significant effects on innovation management. Specifically, perceived quality, perceived value, and learner expectations emerge as the most influential factors in enhancing the level of innovation management. Meanwhile, perceptual interaction, lecturer image, and self-efficacy contribute to the orientation and flexibility of innovation management.

These results have several important implications. First, innovation management must be both structured and flexible to effectively support companies in addressing improvement tasks. Second, while perceived quality, perceived value, and learner expectations are crucial, the lecturer's image should also be accorded equal importance as a component of corporate development. The study concludes that educational institutions should prioritize investing substantial resources into perceptual interaction, lecturer image, and self-efficacy when seeking to support corporate improvement.

The findings confirm a significant positive correlation between these variables and innovation management. They demonstrate that these six variables can enhance employees' innovation management capabilities, thereby exerting a positive influence on the Chinese enterprise.

First, clarify theoretical breakthroughs. We point out that "the second-order model of educational innovation management constructed in this study adds the 'perceptual interaction' variable to the existing general model (e.g., Zhang et al., 2021)—this is because educational institutions and enterprises in Jilin face prominent problems of 'low interaction frequency and information asymmetry.' Additionally, the model verifies the core impact of learner expectations (β=0.86), correcting the limitation of existing studies that 'overemphasize perceived quality while ignoring the alignment between learner expectations and industrial needs,' making the model more suitable for the actual context of educational innovation management in old industrial bases." Second, We propose that "the research results can provide references for provinces in Northeast China's old industrial bases such as Liaoning and Heilongjiang. For example, the strategy of 'prioritizing improving perceived quality through curriculum reform and guiding learner expectations based on local industrial needs' can help other regions quickly identify the core direction of educational innovation management, reduce trial-and-error costs, and promote the coordinated development of regional education and industries.

8. Suggestions

Future research directions should focus on using longitudinal research methods to track the impact of innovative, effective management on supporting Chinese enterprises over the long term, which will help understand the cause-and-effect relationships, as well as changes in recruitment, training, and retention processes over time, to determine which approaches yield more sustainable or short-term benefits. Furthermore, the impact of innovative, effective management should be studied in different cultural and regional contexts, as different educational institutions may face different challenges and opportunities. Comparative studies between countries or regions can help identify effective approaches universally, as well as approaches that need to be adapted to specific contexts. Furthermore, studies should focus on the role of digital transformation in enhancing effective management, such as the use of digital technologies in recruitment, training, and performance appraisal processes, to analyze how digital systems can enhance decision-making accuracy and organizational efficiency.

Finally, barriers to the implementation of innovative, effective management should be studied, considering factors such as resource constraints, inflexible management systems, or cultural and organizational structural issues, to find effective solutions for effective management implementation in educational institutions.

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