

Business Environment and Enterprise Willingness to Participate in Industry-Education Integration: A Qualitative Study

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Abstract: Against the backdrop of deepening industry-education integration and the increasing differentiation of local business environment policies, enterprise willingness to participate remains complex and uneven. Drawing on neoinstitutional theory, this qualitative study conducts semi-structured interviews with core decision-makers from eight manufacturing, technology, and small and medium-sized enterprises (SMEs) within the same prefecture-level city. Using NVivo-based thematic analysis, we investigate how enterprise decision-makers perceive, weigh, and narratively construct their participation in industry-education integration. Three main findings emerge. First, a “temperature gap” exists in policy perception: manufacturing and technology firms view participation as a legitimacy opportunity, whereas SMEs perceive it as survival pressure. Second, cost-risk evaluation is shaped by resource endowments, producing a continuum from a “strategic investment” orientation to a “survival cost” orientation. Third, value prioritisation and legitimisation narratives diverge into three strategic types: “leaders”, “co-creators”, and “pragmatists”. The study suggests that differentiated participation willingness results from the interaction between institutional pressures and organisations’ strategic responses. These findings provide a theoretical foundation and practical guidance for local governments seeking targeted, context-sensitive policies to optimise the environment for industry-education integration.

Keywords: Business environment; industry-education integration; enterprise willingness; neoinstitutional theory; qualitative study

1. Introduction

Integrating industry with education is an important strategic plan for establishing the modern vocational education system and promoting high-quality economic and social progress. With the local “business environment improvement” policies becoming more and more distinct, the degree of industry-education integration is continuously increasing. However, the willingness of enterprises to take part shows a complex and uneven situation. The problems of “hot schools but cold enterprises” and “surface integration without profundity” have not been fundamentally resolved. Although the overall institutional atmosphere keeps improving, most of the current policies mainly concentrate on the supply side or macro-management systems, providing little understanding of the micro-level decision-making processes of the demand side—enterprises—in different local business backgrounds. Enterprises are not uniform entities merely receiving institutional influences; their decisions are mainly determined by their own survival strategies and resources. Hence, it is an urgent theoretical and practical issue to study how enterprises show differentiated willingness to participate in industry-education integration under various business environment policies.

Current studies concerning this main problem develop mainly along two directions. One direction deals with the behavioral patterns of the participants in industrial-educational integration. Researchers have studied the action logics and governance routes of industrial-educational integration community at sector level (Liu & Xu, 2026), found the existence of high willingness but low cooperative model innovation (Zhao, Wang, & Zhang, 2026), and suggested solutions by constructing an ecosystem (Shen & Shi, 2026). The other direction is concerned with the impacts of the business environment. A large number of empirical data show that a good business environment can decrease transaction costs of institutions, accelerate capital flow (Cai & Chen, 2026), improve enterprise adaptability (Cheng, Du, &

Yang, 2026) and pay special attention to the construction of digital infrastructure (Niu & Zhao, 2026). However, little research has been done to systematically investigate how the business environment influences the decision-making of enterprises in regard to industrial-educational integration.

Although some progress has been made, the present research still has some shortcomings: (1) little consideration for the heterogeneity of enterprises - most studies consider enterprises as homogeneous or classify them according to their ownership type, rather than investigating the differences in the survival strategies and resource requirements among manufacturing firms, technology firms and small and medium-sized enterprises; (2) insufficient emphasis on the micro-level - the majority of the research is based on macroeconomics or education management viewpoints, ignoring the micro-process of "institutional pressure-perception-strategic response"; (3) lack of proper adaptation to the context - the enterprise decisions are seldom analyzed in relation to the particular local conditions of "differently formulated business environment policies". Therefore, our study concentrates on the subjective perceptions and stories of the enterprise decision-makers, using qualitative methods to investigate their willingness to join in the differentiated business environments.

2. Research Design

2.1 Theoretical Framework

This research uses neoinstitutional theory as the main analytical basis. The concepts of legitimacy, institutional pressures and strategic organizational responses offer effective analytical methods and approaches for elucidating "organizational diversity under institutional pressures". Enterprises' participation in industry-education cooperation requires adherence to and adjustment of several institutional perspectives such as education policy, industrial policy and social responsibility. Therefore, the main point of this study is to clarify how the macro-institutional surroundings are evaluated, understood and transformed into practical strategies by enterprise managers.

2.2 Research Method

This investigation adopts a qualitative research method, interviewing participants in depth with semi-structured interviews as the main data collection technique and applying NVivo software for theme analysis. It aims at comprehending the subjective experiences, meaning construction and contextual logic behind social issues by means of close contact between the researcher and the respondents. This method is appropriate for exploring the complicated views, compromises and stories of enterprise decision-makers on the integration of industry and education, thus connecting the macro-institutional atmosphere with the micro-behaviour of enterprises and solving the problem raised by neoinstitutional theory about strategic organizational reactions.

2.3 Data Collection

A purposive and maximum variation sampling method was employed to choose eight enterprises in one prefecture-level city: two manufacturing companies, three technological enterprises and three small and medium-sized businesses. The interviewees were selected from the chief decision-makers (such as general managers, deputy general managers in charge of university collaboration or equivalent heads). Information saturation was attained after the seventh interview, and the eighth interview did not reveal any new themes, indicating the sufficiency of the sample size.

A semi-structured interview protocol was established according to the research questions and theoretical framework, including four main aspects: institutional environment evaluation, cost-risk evaluation, strategic value judgment and decision-making stories and backgrounds. It was examined by two qualitative methods experts and tried out for clarity.

2.4 Data Analysis

Two stages were carried out in the interview process. In the first stage, an exploratory method was employed with an open-ended protocol concerning neoinstitutional aspects. In the second stage, the protocol was modified into a more specific version according to the preliminary coding outcomes. All interviews were either done in person or by means of online video, with prior consent and complete recording. Each interview lasted from 60 to 90 minutes to ensure sufficient time for detailed

discussions. The recordings were transcribed word for word, resulting in about 150,000 words of primary transcripts. All the personal and institutional data of the participants were concealed.

Data analysis was done by means of thematic analysis with the assistance of NVivo 12 for coding, sorting and managing. The procedures included: (1) open coding - analysing the transcripts word by word and coding the original statements into primary concepts; (2) axial coding - classifying related concepts into higher-level themes; and (3) selective coding - determining the major categories and comparing the thematic distribution in different companies. The matrix coding query function in NVivo was used to check whether the distribution of the discourses on the thematic concepts showed distinct clustering among the three kinds of companies, which supported the typological conclusions. The whole coding process was carried out by the chief investigator and two other coders checked two transcripts for inter-rater reliability.

3. Findings

Through systematic coding and analysis of in-depth interview data from eight enterprise decision-makers, this study finds that, under the same macro-policy orientation and regional business environment, different types of enterprises exhibit structurally differentiated willingness to participate in industry-education integration. This differentiation is rooted in enterprises' distinct survival logics and resource endowments and manifests externally as divergent perceptions, narratives, and trade-offs across three dimensions: institutional pressures, costs and risks, and strategic value. The three core themes are elaborated below.

3.1 Divergent Policy Perceptions and “Temperature Gaps” in Institutional Pressure

Enterprises' perceptions of local government policy instruments for “business environment optimisation” and “industry-education integration promotion” differ markedly, producing significant “temperature gaps”. First, regarding utility evaluation of policy instruments, the three enterprise types focus on different concerns. Manufacturing firms (M1, M2) value policy “systematicity” and “stability”. As the general manager of M1 stated: “Tax reductions and fee cuts are good, but we would much rather see long-term planning for comprehensive industrial chain upgrading. That would give us confidence to commit long-term to university cooperation.” Technology firms (T1, T2) are sensitive to “innovation incentives” and “flexible regulation”. A co-founder of T1 remarked: “Direct subsidies are less important to us than the government’s tolerance for trial and error. For instance, if a jointly established lab with a university fails, will the project evaluation differentiate that?” SMEs (S1, S2, S3) perceive the most direct effects, focusing on “tangible” immediate subsidies and streamlined procedures. The owner of S1 admitted: “Telling me grand theories is less motivating than giving me money or tax cuts. If the government subsidises half the cost of attending a campus recruitment fair, that gets us much more engaged.”

Second, the nature of institutional pressure transmission differs. For manufacturing and some mature technology firms, the call for industry-education integration is perceived primarily as a “normative” and “cultural-cognitive” pressure concerning corporate social image and industry leadership. The general manager of M2 explained: “As an influential enterprise in the industry, being involved in vocational education is seen as ‘the right thing to do’. Government awards and industry gatherings treat it as a plus.” This represents a proactive response seeking legitimacy. For SMEs, by contrast, the pressure appears more as a “regulatory” pressure intertwined with survival concerns. The manager of S2 described an ambivalent attitude: “There are policy documents, and the subdistrict office also mobilises. Not participating might harm our relationship with them, but participating brings fear of unrecovered costs. It feels like a ‘passive task’.” This “temperature gap”—proactive legitimacy-seeking at one end and passive compliance pressure at the other—constitutes the primary institutional-psychological basis for differentiated willingness.

Neoinstitutional theory posits that institutional pressures are transmitted through three mechanisms: regulative, normative, and cultural-cognitive. This study finds that the same policy environment produces institutionally distinct pressures for different enterprise types, confirming the moderating role of organisational characteristics in institutional pressure transmission.

3.2 Endowment Constraints and Narrative Divergence in Cost–Risk Perception

At the level of cost–risk evaluation, enterprise decision-making logic is deeply constrained by

resource endowments, producing distinctly different discourses. Manufacturing firms, with relatively greater financial resources, show high sensitivity to “management costs” and “opportunity costs”. The general manager of M1 calculated in detail: “Hosting a class of students for internships requires assigning mentors, designing projects, and ensuring safety. This consumes substantial energy from our frontline staff. Our costs are primarily these ‘hidden costs’ and potential production delays.” Technology firms are most vigilant about “technology leakage risks” and associated “core talent poaching risks”. The general manager of T2 emphasised: “When cooperating with universities on algorithm modules, our greatest fear is students or faculty taking core ideas away, or key students being recruited by competitors after the cooperation ends. Such risks are difficult to quantify financially.” SMEs’ cost perception is the most realistic and rigid, directly targeting “cash flow pressure” and “direct operating costs”. The owner of S3 said: “Profit margins are thin in small factories. Interns bring real costs in subsidies, utilities, materials, and equipment depreciation. A safety incident would be catastrophic.”

Risk tolerance also shows structural differences. Manufacturing firms exhibit “strategic risk tolerance”. The general manager of M2 stated: “A single cooperation project may show short-term losses, but if it secures us talented recruits in the long run or opens up new directions in a particular technology, the risk is worth taking.” Technology firms show “selectively tightening” characteristics: they are extremely cautious about core technology cooperation risks but relatively open to cooperation aimed at brand-building or exploring future trends. SMEs exhibit very low risk tolerance, magnifying any risk that might disrupt their delicate operational balance. The owner of S1 commented: “We cannot afford disruptions. Every step must be calculated clearly. We dare not touch anything without obvious returns.”

Integrating resource-based view with neoinstitutional theory reveals that resource endowments not only determine risk-bearing capacity but also shape enterprises’ interpretation of institutional pressures—resource-rich enterprises are more inclined to reframe risks as strategic investments.

3.3 Value Prioritisation and Differentiated Legitimation Narratives

The strategic value enterprises pursue through industry-education integration encompasses both economic rationality and social legitimacy. Different enterprise types prioritise these values differently, producing divergent narrative frameworks. Manufacturing firms place “long-term talent pipeline construction” and “technological ecosystem influence” at the apex of value. M1 and M2 repeatedly mentioned “building skills for the entire industrial chain” and “shaping industry skill directions through standard-setting and curriculum development”. Technology firms exhibit “dual-driver” value pursuits: “cutting-edge technology insight and early talent lock-in” (the co-founder of T1 hoped “to expose students to our technology stack while still at university so they are productive upon graduation”) and “innovation-driven corporate social image building” (which helps attract investment and high-end talent). SMEs have the most direct value pursuits, focusing primarily on “alleviating immediate skill shortages” and “obtaining policy benefits or reputation”. The manager of S2 admitted candidly: “The ideal scenario is students ready to work upon graduation, saving us training costs. Also, being recognised as a ‘demonstration enterprise for industry-education integration’ would help with recruitment and order acquisition.”

There are different legitimation methods used by various types of enterprises. Manufacturing companies present themselves as leaders, demonstrating that their involvement is for the purpose of fulfilling the responsibility of leading the industry, in accordance with the norms and cultural cognition of legitimacy. On the other hand, technology enterprises prefer a “co-creator” method, stressing the joint exploration of the future and the cultivation of innovative talents through cooperation with universities, at the same time showing their advanced technology and meeting the requirements of the government. Small and medium-sized enterprises (SMEs) usually use a “pragmatic” or “survivor” method, concentrating on solving actual operational problems or expressing their willingness to cooperate in a tactful way. These differences in the narrative are essentially different legitimation methods adopted by enterprises within the institutional environment depending on their positions and resources, making their behaviors appear reasonable and acceptable in certain situations.

Neoinstitutional theory indicates that organizations acquire legitimacy by means of narratives. This investigation has discovered three narrative approaches—leader (normative legitimacy), co-creator (cultural-cognitive legitimacy) and pragmatist/survivor (pragmatic compromise)—thus expanding the classification of legitimization methods.

The above themes are positively correlated within the data. The NVivo matrix coding query revealed the clustering of discourse distribution among the thematic nodes for the three enterprise types, confirming the typological conclusions. Moreover, the local policy texts collected are consistent with the differences in the perceived policy instruments of the enterprises, which provides methodological support. The identified differentiation logic - "institutional perception-endowment constraints-value prioritization" - has good explanatory power for explaining the behavior of enterprises in the industrial-educational integration within similar regions. However, the generalization of the above conclusions to regions with greatly different business environments (such as very favorable or relatively underdeveloped) or to more detailed sub-types within the same enterprise category (for example, 'specialized and sophisticated' SMEs compared with traditional SMEs) may need further modification and verification.

4. Conclusion

This study demonstrates that, under the macro-policy orientation of "business environment optimisation", enterprise willingness to participate in industry-education integration is not solely a response to policy incentives but also depends on the interaction between internal endowments and external institutional perceptions.

4.1 Summary of Findings

First, enterprises exhibit significant "temperature gaps" in their perception of industry-education integration policies. Manufacturing firms and some technology firms perceive pressures more through normative and cultural-cognitive dimensions, whereas SMEs experience pressures more directly as regulatory and survival-related. Second, resource endowments are tightly coupled with cost-risk evaluation logics. Manufacturing firms focus on hidden management costs and strategic risk tolerance; technology firms are vigilant about core technology leakage and talent poaching risks; SMEs are extremely sensitive to direct costs and operational risks that might impact their fragile cash flows, forming a continuum from "strategic investment" to "survival cost" orientations. Third, value pursuits and legitimization narratives show differentiated prioritisation. Manufacturing firms pursue "long-term talent pipelines" and "industrial ecosystem influence", adopting a "leader" narrative; technology firms focus on "cutting-edge technology insight" and "innovation image building", favouring a "co-creator" narrative; SMEs concentrate on "alleviating skill shortages" and "obtaining immediate support", with a "pragmatist" or "survivor" narrative reflecting their institutional field position. Together, these findings reveal the deep mechanism underlying differentiated enterprise willingness: the interaction between the temperature gap in institutional pressure perception and the rigidity of resource endowment constraints.

This study provides locally grounded empirical evidence for neoinstitutional theory. It shows that, even within the same institutional field, due to fundamental differences in enterprise survival logics and resource endowments, institutional pressures do not produce simple behavioural convergence but rather elicit strategic, diverse responses, thereby deepening understanding of "organisational agency" and the "micro-mechanisms of institutional pressure transmission".

4.2 Policy Implications

This research provides theoretical basis for the implementation of targeted local governmental measures. For manufacturing companies, the policies should establish a long-term and stable institutional background which is beneficial for advanced and thorough cooperation. For technological firms, improved protection of intellectual property and adjustable incentives are needed to stimulate collaborative creativity and research and development cooperation. For small and medium-sized enterprises, direct and easy services such as simplified procedures for subsidy applications and risk-defending devices should be offered to significantly reduce the entry barriers. Furthermore, the communication of policies should take into account the different legitimating stories of enterprises, promoting an integrated system where various participants can make contributions with their own strengths.

4.3 Limitations and Future Research

This investigation has some restrictions. The sample size is small and confined to one city, therefore the applicability of the results should be tested in various contexts. In the future, the sample may be

increased by conducting multiple case studies or quantitative investigations, and following the whole procedure of enterprise involvement. It might also combine the viewpoints of vocational schools, government bodies and other participants to establish a more comprehensive governance analytical system.

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