THE QUALITY OF THE INTERNSHIP SYSTEM AFFECTING STUDENTS' ADAPTABILITY IN VOCATIONAL COLLEGES IN QINGDAO CITY, CHINA

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ABSTRACT
This research aims at examining the quality of the internship system affecting students' adaptability in vocational colleges in Qingdao City, China. The samples consisted of 400 valid vocational college interns who accumulated at least one-month school-enterprise cooperative internship experience. Questionnaires were administered for data collection, adopting purposive and convenience sampling techniques. Confirmatory factor analysis and two separate structural equation models were utilised for quantitative data analysis to avoid multicollinearity and model-identification concerns. Results indicated that both internship system quality and student adaptability were perceived at a high level. Internship system quality showed a strong positive correlation with students' adaptability ($r = 0.638$, $p < 0.01$). Model 1 revealed that all five dimensions of internship system quality significantly positively predicted students' adaptability, with perceived support as the strongest predictor and jointly explaining 41.2 % of variance in adaptability. Model 2 further confirmed the significant positive predictive effect of the higher-order latent construct of overall internship system quality on students' adaptability. This study offers practical institutional suggestions for vocational colleges and enterprises to enhance interns' workplace adaptation during school-enterprise collaboration, and supplements local empirical evidence for vocational education research.
Keywords: Internship System Quality, Student Adaptability, Vocational College, School-Enterprise Cooperation, Structural Equation Modelling

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INTRODUCTION

Global vocational education has recently played an important role in preparing students for school-to-work transition and supplying skilled labour for regional economic development, creating practical demands for optimizing internship management mechanisms (Deissinger, 2024; Ocampo et al., 2020; Pantaruk et al., 2025; Wangwan & Aujirapongpan, 2024). However, the most important concern for vocational educators is to be aware of institutional gaps in internship implementation. These gaps include incomplete organizational arrangements, insufficient support mechanisms, and unequal rights protection for intern students (Aujirapongpan et al., 2024; Surat & Chaiyawat, 2024; Liu, 2026). Tavitiyaman et al. (2025) revealed that internship institutional conditions will largely determine whether interns obtain meaningful workplace learning outcomes. One of the biggest practical issues for Chinese local vocational education is the concern about how institutional quality of internships shapes students' comprehensive adaptability. Career construction theory (Savickas & Porfeli, 2012) advocated that student adaptability plays a significant role in vocational contexts. It can help young learners adjust to authentic workplace requirements, especially for vocational college students undertaking enterprise placements in Chinese cities including Qingdao.

Indeed, internship system quality is vital for school-enterprise collaborative talent cultivation (Chaiwong & Srisaard, 2023). It also helps reduce student internship stress by providing structured supervision and protective arrangements (Wang, 2023). Also, Khampirat (2024) revealed that adaptive resources can have an influence on interns' workplace adjustment and career readiness. In terms of student adaptability, the study by Martin (2021) claimed that well-structured internship systems may assist students in coping with role-transition challenges. Students can develop both work skills and interpersonal resilience, and perform as competent newcomers among enterprise staff. Therefore, educational administrators should put more effort into improving institutional construction for internships in order to achieve better talent-cultivation performance (Zhang, 2025).

On the other hand, acceptance of workplace roles and individual adaptive potential cannot automatically produce satisfactory internship outcomes without well-designed institutional arrangements. Institutional factors play predictive roles linking internship contexts and student adaptive performance. Aujirapongpan et al. (2024) recommended that, in the context of school-enterprise collaboration, systematic internship governance can significantly improve intern learning experience and mitigate adaptive barriers. Surat and Chaiyawat (2024) revealed that formal policy documents together with real-world implementation quality can help bridge gaps between institutional design and real-world student internship experience. Additionally, Wangwan and Aujirapongpan (2024) also advocated that the student adaptation issue in vocational placements can be improved when the college-enterprise partnership can deliver guaranteed organization, process supervision, fair evaluation, right protection and perceived support. Such institutional arrangements can alleviate adaptive pressure and promote student role adjustment. However, there are relatively few empirical studies revealing the direct relationships among multi-dimensional internship system quality and comprehensive student adaptability within China's local vocational-education context.

In line with such practical importance, this study therefore investigated the influence of internship system quality on vocational college students' adaptability. Qingdao vocational colleges were selected in this study since local vocational training occupies a significant position in regional industry-education integration practice (Qingdao Municipal Bureau of Education, 2022; Zhou, 2023). The findings of this study could have practical implications for vocational college managers and enterprise mentors to emphasize the importance of multi-dimensional internship system construction, as well as provide theoretical contribution to existing vocational-education literature.

This research aims at investigating the influence of internship system quality (organization guarantee, process control, evaluation mechanism, rights protection, perceived support) on students' adaptability (work adaptability, interpersonal adaptability, environmental adaptability, psychological adaptability) among vocational college students in Qingdao City, China. Two separate structural models are specified: Model 1 tests predictive effects of five first-order dimensions; Model 2 examines the predictive effect of the higher-order overall internship system quality construct.

LITERATURE REVIEWS

Relationship between internship system Quality and Students' Adaptability

Internship system quality deserves high attention within East-Asian school-enterprise cooperative vocational training. Institutional arrangements largely shape interns' workplace-learning experiences and developmental outcomes (Pantaruk et al., 2025; Tavitiyaman et al., 2025). From the neo-institutional theory perspective, internship system quality reflects multi-level institutional effectiveness, including regulative rules, normative implementation, and shared cognition among schools, enterprises and student interns (DiMaggio & Powell, 1983; Huo, 2021). Formal written policies alone cannot guarantee positive student outcomes; real-world execution of rules determines whether interns obtain genuine support and protection (Surat & Chaiyawat, 2024). Following prior vocational-education studies, internship system quality in this research contains five practical dimensions: organization guarantee, process control, evaluation mechanism, rights protection, and perceived support (Liu, 2026; Pantaruk et al., 2025). Under high-quality internship systems, schools and enterprises maintain clear responsibility division, continuous progress monitoring, developmental assessment standards, legitimate-interest safeguards and accessible supportive resources for intern students (Wangwan & Aujirapongpan, 2024).

Based on Social-Ecological System Theory, Chaiwong and Srisaard (2023) interpreted high-quality internship systems as supportive mesosystem and microsystem environments for interns. Unstable institutional conditions create environmental uncertainty, increase work stress and hinder role transition for young vocational learners. Vocational colleges and cooperative enterprises therefore need to build qualified internship institutional arrangements to structure workplace-learning activities and lower environmental uncertainty so as to promote student adaptation (Ocampo et al., 2020). Student adaptability is manifested in four dimensions: work adaptability, interpersonal adaptability, environmental adaptability, and psychological adaptability (Hou, 2012; Khampirat, 2024). It represents critical psychosocial resources that help interns cope with new job assignments, complicated workplace relationships and emotional pressure during the student-to-employee transformation.

Previous overseas empirical research has confirmed significant links between internship institutional conditions and intern adaptive performance. Martin (2021) stated systematic internship governance constitutes essential preconditions for intern workplace adjustment. Nevertheless, most existing evidence originates from Southeast-Asian or Western contexts. Local Chinese vocational-education literature mostly discusses internship management from macro-policy perspectives; few quantitative studies examine how each institutional dimension predicts multi-faceted student adaptability (Zhou, 2023). It is reasonable to infer that institutional improvement of internships helps cultivate intern students' adaptive capacities. Accordingly, the following hypotheses are derived for this study:

H1: The components of the quality of the internship system, including organization guarantee, process control, evaluation mechanism, rights protection, and perceived support, affect students' adaptability in vocational colleges in Qingdao City, China.

H2: The quality of the internship system affects students' adaptability in vocational colleges in Qingdao City, China.

From the literature review, the conceptual framework can be drawn as shown in Figure 1.

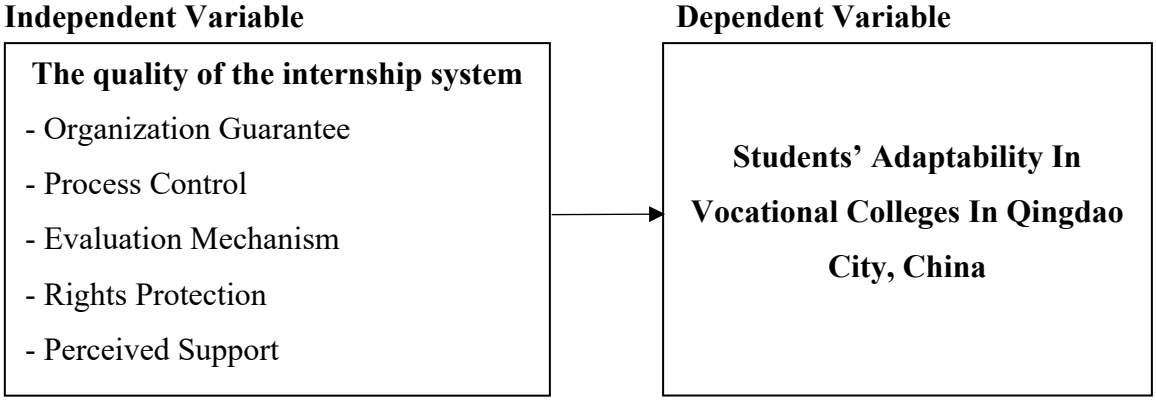


Figure 1 Conceptual Framework adapted from Zhou (2023).

RESEARCH METHODOLOGY

This study examines the quality of the internship system affecting students' adaptability in vocational colleges in Qingdao City, China. The target population consisted of approximately 18 000 vocational college students who participated in school-enterprise cooperative post-based internships across local vocational institutions (Qingdao Hengxing University & Qingdao Vocational and Technical College of Hotel Management, 2025). Following the Krejcie-Morgan sample-size calculation formula for finite populations, 400 valid participant responses were collected under a 95 % confidence level to ensure sufficient statistical power for structural equation-modelling analysis. Purposive sampling combined with convenience sampling was utilised for participant recruitment. Strict inclusion criteria were enforced: participants must be enrolled in Qingdao-based vocational colleges, take part in school-organised enterprise internships, and hold no less than one-month cumulative internship experience. Respondents failing these criteria were excluded from the final dataset.

The self-designed questionnaire instrument contained three distinct sections. Part 1 captured demographic-background data including gender, year of study, institutional type, field of study, cumulative internship duration, internship-organisation location, and organisational nature of internship employers. Part 2 measured internship system quality using 26 scale items covering five dimensions: organisation guarantee, process control, evaluation mechanism, rights protection, and perceived support. Part 3 measured students' adaptability with 20 items across four dimensions: work adaptability, interpersonal adaptability, environmental adaptability, and psychological adaptability. All scale items adopted a standard five-point Likert format, ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Prior to formal field-data collection, psychometric-validation procedures were completed. Item-Objective Congruence (IOC) was evaluated by domain experts, yielding an IOC value of 0.82) Cronbach's alpha reliability test showed $\alpha = 0.892$ for the internship-system-quality scale and $\alpha = 0.884$ for the student-adaptability scale, demonstrating satisfactory internal consistency (Polit & Beck, 2006; Hair et al., 2012). Given the distribution characteristics of the survey participants, this study distributed the questionnaire via online channels. An electronic questionnaire link was generated on the "Wenjuanxing" platform and forwarded to the target group by the internship supervisors. Additionally, a standardized set of instructions was displayed on the questionnaire's homepage to ensure the authenticity and validity of the responses.

Two separate structural equation models were estimated to test research hypotheses and avoid multicollinearity and model-identification bias that would arise from simultaneously running paths from both first-order sub-factors and their corresponding higher-order construct toward

the same dependent variable. The two-model analytical strategy mitigates model misspecification that may occur when simultaneously including both first-order dimensions and their higher-order latent construct within one single structural equation model. Model 1 tests H1: direct effects of five first-order dimensions of internship system quality on students' adaptability. Model 2 tests H2: direct effect of higher-order internship-system-quality latent construct on students' adaptability. Key model-fit indicators including Cmin/df, P-value, GFI, AGFI, RMR, RMSEA, TLI, CFI, and NFI were assessed for both structural models. Where baseline fit was unsatisfactory, limited model modification based on modification indices was permitted (Knekta et al., 2019; Tabachnick et al., 2007). All analytical outputs were presented using descriptive narrative alongside standardised research tables.

RESEARCH RESULTS

Respondents' Profiles

Four hundred valid questionnaires were retained for final quantitative analysis after screening out incomplete and careless response sheets. Among respondents, male participants accounted for 220(55.0 %), and female participants accounted for 180(45.0 %). In terms of academic year, second-year students constituted 223(55.75 %), while third-year students made up 177(44.25 %). Regarding college type, 307(76.75 %) of respondents came from public vocational colleges and 93(23.25 %) from private vocational colleges. The participants' major categories covered equipment manufacturing, finance & commerce, information technology, preschool education, medicine & health, tourism services, art & design, architecture construction, transportation, sports, food, pharmaceuticals & grain, and other applied vocational fields. In terms of internship duration, most respondents accumulated internship experience of 7-9 months 137(34.25 %) and 10-12 months 122(30.5 %). A total of 292(73.0 %) of internships took place within Qingdao city. By workplace type, the largest proportion of respondents completed internships in private enterprises 176(44.0 %). Overall, the sample covered diversified vocational college groups and multiple internship contexts and satisfied the preset inclusion criteria of this investigation.

Variables descriptive statistics

Table 1 reports the Cronbach's α, mean, standard deviation and interpretation levels for the two core constructs: internship system quality and students' adaptability. The scoring-interpretation standard for rating levels referenced Best & Kahn (2006). Skewness and kurtosis values of all observed variables fell within the ± 3.00 threshold, satisfying the univariate normality requirements for subsequent SEM analysis (Curran et al., 1996; Kline, 2005).

Table 1 Reliability and Descriptive Statistics of Internship System Quality and Students' Adaptability (N = 400)

Variables	Cronbach's α	Mean	Std. Deviation	Interpretation Level
Internship system quality (Overall)	0.895	3.804	0.583	High
- Organization guarantee	0.864	3.753	0.902	High
- Process control	0.856	3.804	0.886	High
- Evaluation mechanism	0.858	3.862	0.876	High
- Rights protection	0.868	3.825	0.857	High
- Perceived support	0.860	3.771	0.895	High
Students' adaptability (Overall)	0.881	3.791	0.619	High
- Work adaptability	0.842	3.808	0.858	High
- Interpersonal adaptability	0.867	3.769	0.912	High
- Environmental adaptability	0.846	3.824	0.862	High
- Psychological adaptability	0.874	3.762	0.932	High

Note: Cronbach's α reflects the internal-consistency reliability of the measurement scale. Mean = sample mean; Std. Deviation = standard deviation. Interpretation Level represents the assessment level of variables. A 5-point Likert scale was applied in this study; higher scores suggest a higher level of the corresponding dimension. Interpretation criteria for mean score levels: 4.21-5.00 = Very High; 3.41-4.20 = High; 2.61-3.40 = Moderate; 1.81-2.60 = Low; 1.00-1.80 = Very Low (Best & Kahn, 2006).

As shown in Table 1, both the overall internship system quality and students' adaptability were rated at a high level by respondents, with respective overall mean scores of 3.804 (Std. Deviation = 0.583) and 3.791 (Std. Deviation = 0.619). For the dimensions of internship system quality, evaluation mechanism had the highest mean value (M = 3.862, Std. Deviation = 0.876), followed by rights protection (M = 3.825, Std. Deviation = 0.857), process control (M = 3.804, Std. Deviation = 0.886), and perceived support (M = 3.771, Std. Deviation = 0.895). Organization guarantee yielded the lowest mean score (M = 3.753, Std. Deviation = 0.902).
In terms of students' adaptability dimensions, environmental adaptability obtained the highest mean (M = 3.824, Std. Deviation = 0.862), followed by work adaptability (M = 3.808, Std. Deviation = 0.858) and interpersonal adaptability (M = 3.769, Std. Deviation = 0.912). Psychological adaptability reported the lowest mean score (M = 3.762, Std. Deviation = 0.932). In addition, all Cronbach's α coefficients for the overall constructs and sub-dimensions exceeded 0.840, indicating satisfactory internal-consistency reliability of the measurement scales. Nevertheless, all sub-dimensions of the two variables were categorized as high level.

Measurement Model Assessment

Based on satisfactory reliability and normality results from descriptive statistics, confirmatory factor analysis (CFA) was conducted to test the measurement model for convergent validity, discriminant validity, and overall model-data fit. Table 2 summarises the goodness-of-fit indices for the measurement model.

Table 2 Measurement Model Goodness-of-Fit Indices

Fit Indices	Obtained Value	Acceptable Threshold
Cmin/df	1.542	1-3
P-value	<0.001	> 0.05
GFI	0.954	> 0.90
AGFI	0.927	> 0.90
RMR	0.024	< 0.05
RMSEA	0.038	< 0.08
TLI	0.976	> 0.90
CFI	0.982	> 0.90
NFI	0.957	> 0.90

Note: Standardized factor loadings for all observed indicator items ranged from 0.561 to 0.847 (> 0.50). Composite reliability (CR) > 0.80 for all latent constructs. AVE for internship system quality = 0.482; AVE for students' adaptability = 0.465) AVE values between 0.40-0.50 are considered acceptable when composite reliability remains sufficiently high (Fornell & Larcker,1981; Lam,2022). The square-root of each AVE value was greater than corresponding inter-construct correlation coefficients, confirming adequate discriminant validity.

All standardized factor loadings for observed indicator items were above the 0.50 threshold, supporting adequate indicator-latent-variable convergence. Composite reliability values for every latent construct exceeded 0.80. Although AVE values for both main constructs were slightly below the conventional 0.50 benchmark, convergent validity was still acceptable given high composite reliability. The square-root of each AVE exceeded the inter-construct

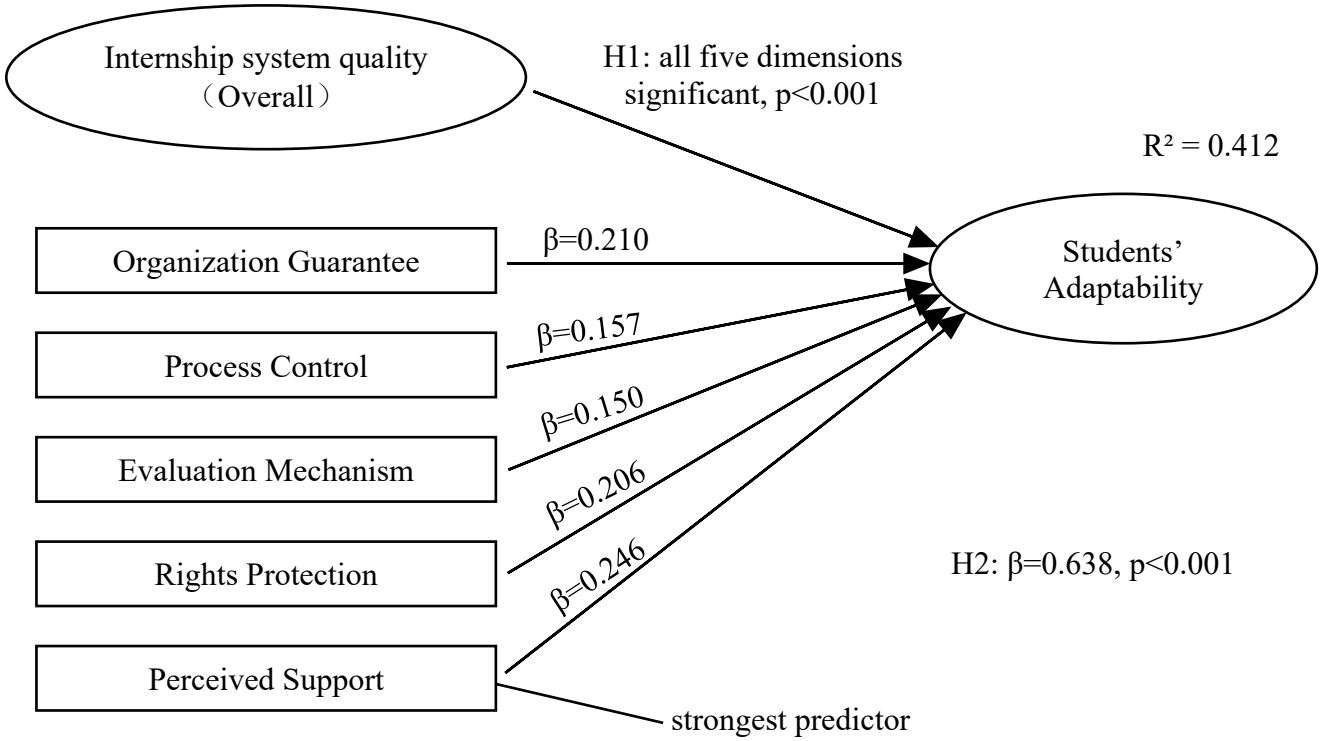
correlation coefficients, confirming discriminant validity. Collectively, the measurement model demonstrated adequate psychometric properties and permitted further structural-model estimation.

Finalized Model and Hypothesis Analysis

To avoid multicollinearity and model-identification bias caused by simultaneously estimating paths from both first-order sub-dimensions and higher-order overall latent construct toward the same endogenous variable, two separate structural equation models were estimated. Model 1 was constructed to test H1: five first-order dimensions of internship system quality predict students' adaptability. Model 2 was built to test H2: higher-order overall internship system quality predicts students' adaptability.Figure 2 illustrates the structural path diagram with standardized path coefficients, hypothesis labels, explained variance (R^2), and key model-fit information.

Model 1 fit indices: Cmin/df = 1.509, P-value < 0.001, GFI = 0.950, AGFI = 0.922, RMR = 0.024, RMSEA = 0.037, TLI = 0.977, CFI = 0.981, NFI = 0.954.

Model 2 fit indices: Cmin/df = 1.521, P-value < 0.001, GFI = 0.953, AGFI = 0.925, RMR = 0.022, RMSEA = 0.038, TLI = 0.979, CFI = 0.984, NFI = 0.956.



Model statistics: Adjusted $R^2 = 0.406$, F = 273.729, ***p < .001

Figure 2 Finalized Model

Note: *** p < 0.001) $R^2 = 0.412$ for students' adaptability. H1 refers to the predictive paths of five sub-dimensions of internship system quality. Perceived support is identified as the strongest predictor. H2 represents the predictive path of higher-order overall internship system quality on students' adaptability.

Table 3 presents unstandardized coefficient (B), standard error (SE), standardized beta (β), t-value and significance level from simple and multiple regression analysis.

Model	Variable	B	SE	β	t-value	P-value
Simple Regression	Constant	1.214	0.158	—	7.705	***p < .001
Y ~ Total X	Total X	0.677	0.041	0.638	16.545	***p < .001
Model Fit	$R^2 = 0.407$, Adjusted $R^2 = 0.406$, $F = 273.729$, ***p < .001					
Multiple Regression	Constant	1.213	0.158	—	7.659	***p < .001
Y ~ X1	- Organization Guarantee	0.144	0.030	0.210	4.762	***p < .001
Y ~ X2	- Process Control	0.110	0.030	0.157	3.624	***p < .001
Y ~ X3	- Evaluation Mechanism	0.106	0.030	0.150	3.479	***p < .001
Y ~ X4	- Rights Protection	0.149	0.032	0.206	4.713	***p < .001
Y ~ X5	- Perceived Support	0.170	0.029	0.246	5.911	***p < .001
Model Fit	$R^2 = 0.412$, Adjusted $R^2 = 0.405$, $F = 55.218$, ***p < .001					

Note: B = unstandardized regression coefficient; SE = standard error; β = standardized coefficient; t = test statistic; p = significance level.

Results showed that all five sub-dimensions of internship system quality significantly and positively predicted students' adaptability. Among them, perceived support yielded the largest standardized coefficient and acted as the strongest predictor. Collectively, five dimensions explained 41.2 % variance in students' adaptability ($R^2 = 0.412$). Therefore, H1 was supported. For H2, the higher-order latent construct of overall internship system quality exerted a strong significant positive predictive effect on students' adaptability ($\beta = 0.638$, ***$p < 0.001$). Thus, H2 was supported. The hypothesis testing outcomes are summarised in Table 4.

Table 4 Summary of Hypothesis Testing Results

Hypothesis	Statistical Method	Result	Conclusion
H1: The components of the quality of the internship system, including organization guarantee, process control, evaluation mechanism, rights protection, and perceived support, affect students' adaptability in vocational colleges in Qingdao City, China.	Multiple regression	All five dimensions significant; $R^2 = 0.412$ $p < 0.01$	Supported
H2: The quality of the internship system affects students' adaptability in vocational colleges in Qingdao City, China.	Pearson correlation	$r = 0.638$ $p < 0.01$	Supported

Note: H1 tests five first-order dimensions; H2 tests higher-order overall internship system quality construct.

Hypothesis Judgement

1) Hypothesis 1: The components of the quality of the internship system, including organization guarantee, process control, evaluation mechanism, rights protection, and perceived support, affect students' adaptability in vocational colleges in Qingdao City, China.

Judgement: Supported. All five sub-dimensions demonstrated statistically significant positive predictive effects on student adaptability.
2) Hypothesis 2: The quality of the internship system affects students' adaptability in vocational colleges in Qingdao City, China.
Judgement: Supported. Internship-system quality had a statistically significant positive predictive effect on students' adaptability.

DISCUSSION & CONCLUSION

Targeting the research objective of exploring the quality of the internship system affecting students' adaptability in vocational colleges in Qingdao City, China, this study analysed 400 valid questionnaire responses collected from vocational interns. Two separate structural equation models were implemented to avoid multicollinearity and model-identification issues. Empirical results demonstrated that perceived internship system quality was at a relatively high level, while the dimension of organizational guarantee received comparatively lower scores. Overall student adaptability also achieved a high rating; however, psychological adaptability remained the weakest dimension. Model 1 showed every sub-dimension of internship system quality exerted a significant positive predictive effect on students' adaptability, with perceived support serving as the strongest predictor. Model 2 confirmed that the higher-order latent variable of internship system quality significantly and positively predicted students' overall adaptability. This result confirms internship system quality as a coherent institutional construct rather than isolated administrative rules.

These results imply that when vocational colleges and cooperative enterprises provide solid organizational guarantees, effective process control, scientific evaluation mechanisms, comprehensive rights-protection arrangements, and sufficient perceived support, vocational interns perform better in work, interpersonal, environmental, and psychological adaptation. The more institutional support and protection interns perceive from collaborating stakeholders, the smoother their transition from student to employee roles. Although Qingdao vocational colleges have built fundamental internship-management frameworks, pre-internship preparatory training and ongoing psychological support for interns still require substantial refinement.

The lower scores for organizational guarantee merit attention from education administrators. Organizational guarantee covers pre-internship orientation, safety training, stakeholder-responsibility allocation, and learning-resource provision. The findings reveal that while local colleges have established basic internship-governance structures, students still perceive inadequate pre-placement preparation. Schools and enterprises need to strengthen front-end institutional design instead of only solving problems after internships commence. Similarly, weak psychological adaptability indicates interns face emotional pressure, role ambiguity and career anxiety during the school-to-work transition. This suggests psychological support should be embedded into regular internship management rather than used only as emergency remediation.

The present findings align broadly with existing international vocational-education research. Pantaruk et al. (2025) found multi-dimensional internship system quality positively predicted workplace adaptability among Thai vocational students, with institutional support as the strongest predictor. This finding is consistent with this study's result for perceived support. Wangwan & Aujirapongpan (2024) verified that internship-support quality facilitates intern adjustment by enhancing psychological resilience. Tavitiyaman et al. (2025) highlighted mentoring and supportive arrangements as core drivers of intern work adjustment. From Social-Ecological System Theory, the mesosystem formed by college-enterprise institutional collaboration creates a protective environment that reduces intern adaptive pressure (Chaiwong & Srisaard, 2023). Meanwhile, neo-institutional theory stresses that written regulations alone

cannot produce adaptive benefits; practical implementation of each institutional dimension is critical (Surat & Chaiyawat, 2024). No contradictory results were found against prior literature. This study extends Southeast-Asian empirical evidence to China's local vocational-education context.

Theoretical contributions

First, this study provides localized quantitative evidence within Chinese vocational-education context. It verifies internship system quality as a key institutional antecedent of interns' comprehensive adaptability. Second, it expands the application scope of Social-Ecological System Theory and Neo-Institutional Theory in Chinese school-enterprise internship research. Third, this research supplements existing scholarship by examining five institutional dimensions predicting four-dimensional adaptability and clarifying the relative predictive weight of each sub-dimension.

Managerial contributions

Vocational college administrators and enterprise internship supervisors should recognise that multi-dimensional internship system quality substantially improves intern adaptability. Priority should focus on strengthening perceived support: deploying dual-mentor resources, establishing regular check-in communication channels, and monitoring interns' psychological well-being. Next, reinforce organizational guarantees through systematic pre-internship safety and professional training, and clarify tripartite responsibilities among schools, enterprises and students. Rights-protection mechanisms, including tripartite internship agreements, internship-allowance disbursement and intern insurance, must be strictly enforced. Continuous optimisation of process control and multi-source developmental evaluation is also required. These practices smooth students' school-to-work transitions, lower internship-dropout risks and improve talent-cultivation outcomes.

Limitations

First, cross-sectional convenience sampling limited to Qingdao vocational students restricts generalisability to other regions. Second, cross-sectional survey data cannot confirm strict causality and only supports correlational predictive effects. Third, the model excludes individual-level variables such as psychological resilience and self-efficacy that may mediate or moderate institutional influences. Fourth, data relies solely on student self-report questionnaires, which carries potential common-method bias. The present study employed cross-sectional self-report questionnaires, which may introduce common-method variance. Future research may incorporate objective archival records or supervisor ratings to complement student self-reported data.

Future research

Longitudinal tracking designs can capture dynamic changes in student adaptability throughout the internship cycle. Subsequent studies may add mediators such as psychological resilience or moderators including major-job matching degree to unpack underlying mechanisms. Mixed-method research combining surveys, in-depth interviews and focus groups can enrich qualitative explanations. Expanding sampling coverage across multiple Chinese cities will support cross-regional comparison and improve external validity.

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