



## Impact of international integration on human resource development in Tay Ninh province during the period (2019–2024)

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### Abstract

In the context of integration, human resources are increasingly becoming a vital factor in competitiveness and sustainable development. Therefore, to develop the strengths of Tay Ninh province – a border province with a strategic location and a large influx of FDI, improving the quality of the workforce is crucial to meet the process of the industrial-service sector's structural transformation. Based on human capital theory and economic integration, this study measures the impact of international integration on human resource development in Tay Ninh during the period 2019–2024. The research method employs a survey of 300 subjects using a 5-point Likert scale. The proposed model includes four independent variables: (X1) Trade opening and FDI attraction, (X2) International Education and training cooperation, (X3) Technology transfer, and (X4) Integration institutions and policies. The analysis results show that the scales achieve high reliability (Cronbach's Alpha > 0.9) and exploratory factor analysis (EFA) confirms that the model structure is realistic and feasible. The study provides an important empirical basis for policy planning, emphasizing the linkage between investment attraction and workforce training and improvement of the local institutional environment to optimize the benefits from integration.

**Keywords:** Human resource development, International integration, Trade opening and FDI, Technology transfer, Education and training cooperation, Integration institutions and policies

### Introduction

#### 1. Research context

In the context of globalization, human resources are a central factor determining the quality of economic growth. According to classical human capital theories, investing in education and labor skills not only increases individual productivity but also drives long-term growth. As we participate more deeply in global value chains, competitive advantage shifts from resources and cheap labor to human quality and technological adaptability. International integration, through trade and FDI, promotes the restructuring of the local economy from agriculture to industry and services. This process creates competitive pressure, requiring the labor market to transform to meet international standards.

In Vietnam, Tay Ninh plays a strategic role as a bridge between Ho Chi Minh City and Cambodia and the Mekong sub-region through international border gates such as Moc Bai and Xa Mat. This advantage helps the province strongly attract FDI, develop industrial zones, and significantly shift its labor structure. However, the period from 2019 to 2024 also witnessed many challenges: the impact of the COVID-19 pandemic, the pressure of digital transformation from the Fourth Industrial Revolution, and the shortage of highly skilled human resources. In particular, the strategy to expand growth opportunities from 2025 onwards requires a new vision for human resources. Therefore, an analysis of the systemic impacts of integration on human resources in Tay Ninh is necessary, given its considerable scientific importance and practical implications.

#### 2. Objectives and Research questions

The overall objective of this study is to measure and analyze the impact of international integration on human resource development in Tay Ninh province during the period 2019–2024. Through a quantitative approach, the study aims to clarify the extent and impact mechanisms of integration

factors in the context of a border province undergoing a robust economic restructuring.

Based on this, the study establishes three specific objectives. First, to assess the impact of four factors of international integration, including: trade opening and FDI attraction (X1), international education and training cooperation (X2), Technology transfer (X3), and integration institutions and policies (X4) on human resource development (Y) in Tay Ninh. Second, to test the reliability and structure of the human resource development scale through statistical techniques such as Cronbach's Alpha and exploratory factor analysis. Third, to identify the integration factor with the strongest impact, thereby suggesting appropriate policy priorities for the locality.

In line with the above objectives, the study focuses on two main questions: (i) How does international integration impact human resource development in Tay Ninh province? and (ii) Among the integration factors considered, which one plays the most decisive role in human resource development at the provincial level?

#### 3. Contributions of the research

This study makes three outstanding contributions, both academically and practically. Firstly, it constructs and validates a quantitative model of the impact of international integration on human resource development at the provincial level – a level relatively underexplored in the previous studies primarily focusing on the national or sectoral levels. Secondly, it develops a scale comprising 36 observed variables reflecting multidimensional human resource development, including quality, structure, efficiency of use and competitiveness, and conducts empirical testing of the scale's reliability and validity. Thirdly, the research results provide valuable scientific evidence for the planning and adjustment of human resource development policies in Tay Ninh province, particularly in

the context of deep international integration and the province's new development space after the merger.

## Literature review

### 1. Fundamental theories of human resource development

Human resource development is the core foundation of economic growth and social progress. In this context, Becker's (1964)<sup>[2]</sup> human capital theory plays a central role, asserting that education and training are not costs but profitable investments. High-quality human resources are considered a form of "capital" that is capable of accumulation, helping to increase productivity and sustainable income.

**Endogenous growth models:** Have further expanded this importance. Lucas (1988)<sup>[11]</sup> emphasized the spillover effect of knowledge through social interaction, while Romer (1990)<sup>[14]</sup> pointed out that knowledge accumulation and technological innovation are fundamental drivers of long-term economic growth. From this perspective, human resources are both the creators and the target groups for new technology adoption.

In the context of international integration, to participate in global value chains, requiring a skilled workforce with the ability to adapt to international standards is increasingly high. Therefore, human resource development needs a comprehensive approach, linking formal education and vocational training throughout the lifecycle. In short, based on the theory of human capital and endogenous growth, human resource development is a decisive driving force for localities to enhance their competitiveness and achieve sustainable development.

### 2. Theories of international integration and development

International integration, from an economic perspective, is the process by which economies become increasingly interconnected through trade, investment, and deeper participation in global value chains. Modern trade theory implies that opening up trade not only expands markets but also creates incentives for improving resource allocation efficiency, promoting specialization, and increasing productivity (Krugman, 1994)<sup>[9]</sup>. In this context, foreign direct investment (FDI) plays a particularly important role because in addition to capital flows, FDI also brings technology, management methods, and international production standards.

Studies on global value chains indicate that as an economy or locality is more deeply involved in regional and global production networks, its domestic economic structure undergoes significant adjustments. Industries with the ability to connect with foreign businesses and international markets tend to grow faster, while less competitive industries tend to shrink or be forced to restructure. According to the OECD (2017), this integration process creates both opportunities and challenges for development, especially at the local level, where the capacity to absorb and adapt policies plays a decisive role.

The impact of international integration on the local labor market is clearly demonstrated through changes in employment structure and skill requirements. As trade and FDI increase, the demand for skilled labor with technical skills and adaptability to international work environments tends to rise, while unskilled labor faces greater competitive pressure. Feenstra (2004)<sup>[6]</sup> argues that integration increases skill differentiation in the labor market, while

simultaneously promoting learning and improving the quality of human resources via exposure to advanced technologies and international norms.

From a development perspective, international integration does not automatically yield benefits without appropriate supporting conditions. The effectiveness of integration largely depends on the local capacity to develop human resources, improve the institutional framework, and create a favorable environment for workers and businesses to adapt to change. Therefore, analyzing the impact of integration on human resource development at the provincial level is necessary to clarify the mechanism for transforming integration opportunities into sustainable development drivers.

### 3. Theories of Technology and Innovation

In modern economics, technology and innovation are core drivers of growth and productivity. Schumpeter (1934)<sup>[15]</sup> emphasized the process of "creative destruction," where new technologies constantly replace old structures, profoundly changing the labor market. In the context of integration, this process occurs more rapidly thanks to the transfer of technology from multinational corporations and global production standards.

Technology transfer, especially through FDI, not only brings modern machinery but also demands higher skills, discipline, and management capabilities. Acemoglu and Autor (2011)<sup>[1]</sup> point out that automation is restructuring jobs: replacing repetitive tasks with a high demand for workers with analytical and operational technology skills. This puts strong pressure on the training system to upgrade workers' skills.

Under the impact of the Fourth Industrial Revolution, digital skills and the ability to learn continuously have become key factors. Jesuthasan and Boudreau (2018)<sup>[8]</sup> affirm that technology is redefining the nature of work. Therefore, human resource development cannot be separated from technology strategy; productivity is only sustainable when workers are capable of mastering and innovating based on new technologies. Analyzing this impact is an indispensable part of integration research at the local level.

### 4. Research model and hypothesis

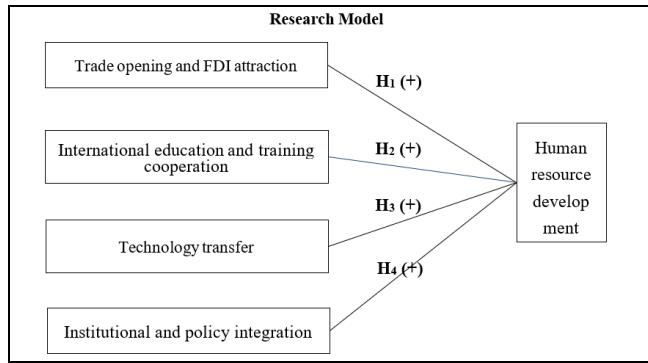
Based on the theory of human capital, integration, and technological innovation, the study proposes a model to analyze the impacts of international integration on human resource development (Y) through four groups of factors: (X1) Trade opening and FDI attraction, (X2) International education and training cooperation, (X3) Technology transfer, and (X4) Institutional and policy integration.

Theoretically, X1 promotes the demand for skilled labor and shifts the employment structure, raising local productivity standards. X2 helps workers access international knowledge and professional standards, improving their professional skills and foreign language proficiency. X3 creates incentives for workers to enhance their digital skills and master modern technologies. Finally, X4 plays a fundamental role, creating a transparent environment to transform integration resources into sustainable human resource development factors.

From these arguments, the study proposes four main hypotheses:

- **H1:** X1 has a positive impact on human resource development (Y).
- **H2:** X2 has a positive impact on Y.

- **H3:** X3 has a positive impact on Y.
- **H4:** X4 has a positive impact on Y.



**Methodology**

**1. Research Design**

This study employed a quantitative method to measure the systemic impact of international integration on human resource development in Tay Ninh province. This approach helps to objectively test the relationships between variables and ensure the generalizability of the results (Creswell, 2014) [4]. The study applies a cross-sectional design, collecting data at a single point in time to reflect the survey subjects' assessments of the period 2019–2024.

The primary data collection tool was a survey questionnaire using a 5-point Likert scale. This scale allows for the quantification of abstract concepts such as perception and impact level (Hair *et al.*, 2019) [7]. This design creates a strong connection between the theoretical framework and empirical data, serving to test the reliability of the scale and analyze the factor structure. This is an important foundation for providing accurate quantitative evidence for local human resource development policy planning in the context of integration (Bryman, 2016) [3].

**2. Research sample & data collection**

The study used a convenient sampling method with 300 valid observations, meeting the criteria for exploratory factor analysis (EFA). According to Hair *et al.* (2019) [7], this size ensures stability because the sample size is more than 8 times the number of observed variables (36 variables). The survey subjects were diversified to objectively reflect the current situation, including: (i) government and business administrators; (ii) workers in major economic sectors; and (iii) experts in the fields of training and human resources.

Data were collected through a structured questionnaire using a five-point Likert scale. The study adopted a retrospective approach, requiring the participants to provide evaluations based on their actual experiences during the period 2019–2024. This method allows for the synthesis of labor market fluctuations under the dual impact of international integration, the COVID-19 pandemic, and digital transformation. According to Bryman (2016) [3], the retrospective survey is a suitable solution for studying socio-economic phenomena over a defined period when time series data is lacking.

**3. Scale and questionnaires**

The scale and questionnaires were constructed based on a theoretical framework and previous empirical studies to ensure their suitability. The study used a 5-point Likert scale

(from "strongly disagree" to "strongly agree"), which helps to effectively and comprehensively quantify the perceptions of the survey subjects (Hair *et al.*, 2019) [7].

The questionnaire consists of 36 observed variables, divided into two main groups:

- **Independent variable group:** (International integration): Consists of 20 indicators measuring 4 components: (X1) Trade opening and FDI attraction; (X2) International education and training cooperation; (X3) Technology transfer; (X4) Integration institutions and policies. Each component includes 5 specific indicators.
- **Dependent variable group:** (Human resource development - Y): Consists of 15 observed variables, reflecting a multidimensional perspective across 4 aspects: quality, structure, usage efficiency, and competitiveness.

This multidimensional approach allows for a comprehensive assessment of human resource development instead of focusing solely on educational attainment. The use of multiple indicators for each concept also enhances the reliability and measurability of quantitative analyses (Nunnally & Bernstein, 1994).

**Data analysis methods**

**1. Scale reliability testing (Cronbach's Alpha)**

**Table 1:** Cronbach's Alpha Results by Scale

Scale	Number of variables	Cronbach's Alpha
X1 (Trade opening and FDI attraction)	5	0.919
X2 (International education and training cooperation)	5	0.930
X3 (Technology transfer)	5	0.938
X4 (Integration institutions and policies)	5	0.940
Y (Human resource development)	15	0.978

**Scale: X1** (Trade opening and FDI attraction) | Alpha = 0.919

**Table 2:** Item–Total Statistics and Cronbach's Alpha if Item Deleted (X1: Trade Opening and FDI Attraction)

Item	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
X11	0.805	0.900
X12	0.787	0.902
X13	0.778	0.904
X14	0.783	0.902
X15	0.817	0.896

**Scale: X2** (International education and training cooperation) | Alpha = 0.930

**Table 3:** Item–Total Statistics and Cronbach's Alpha if Item Deleted (X2: International Education and Training Cooperation)

Item	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
X21	0.832	0.912
X22	0.809	0.916
X23	0.827	0.912
X24	0.800	0.918
X25	0.815	0.915

**Scale: X3** (Technology transfer) | Alpha = 0.938

**Table 4:** Item–Total Statistics and Cronbach’s Alpha if Item Deleted (X3: Technology Transfer)

Item	Corrected Item–Total Correlation	Cronbach’s Alpha if Item Deleted
X31	0.818	0.926
X32	0.827	0.924
X33	0.861	0.918
X34	0.822	0.925
X35	0.842	0.922

Scale: X4 (Integration institutions and policies) | Alpha = 0.940

**Table 5:** Item–Total Statistics and Cronbach’s Alpha if Item Deleted (X4: Integration Institutions and Policies)

Item	Corrected Item–Total Correlation	Cronbach’s Alpha if Item Deleted
X41	0.850	0.924
X42	0.824	0.929
X43	0.836	0.927
X44	0.848	0.925
X45	0.848	0.926

Scale: Y (Human resource development) | Alpha = 0.978

**Table 6:** Item–Total Statistics and Cronbach’s Alpha if Item Deleted (Y: Human Resource Development)

Item	Corrected Item–Total Correlation	Cronbach’s Alpha if Item Deleted
Y1	0.838	0.977
Y2	0.872	0.976
Y3	0.819	0.977
Y4	0.857	0.976
Y5	0.863	0.976
Y6	0.864	0.976
Y7	0.85	0.976
Y8	0.877	0.976
Y9	0.851	0.976
Y10	0.845	0.976
Y11	0.848	0.976
Y12	0.874	0.976
Y13	0.867	0.976
Y14	0.866	0.976
Y15	0.828	0.977

**Cronbach’s Alpha results**

All scales achieved good reliability (Alpha > 0.7). The Alpha coefficients were all high (~0.92–0.98), indicating scale stability and internal consistency; no observed variable was found to significantly reduce reliability upon removal.

**2. Exploratory Factor Analysis (EFA) – Rotated Matrix**

**Table 7:** Kaiser–Meyer–Olkin Measure and Bartlett’s Test of Sphericity

Measure	Value
KMO (total)	0.945
Bartlett Chi-square	9,982.616
df	595
Sig. (p-value)	<.001

Data met the criteria for performing EFA: KMO > 0.5 and Bartlett’s test was statistically significant (p < 0.05).

**Table 8:** Total Variance Explained (Varimax Rotation, Five Factors)

Factor	Eigenvalue	Percentage of Variance (%)	Cumulative Percentage (%)
F1	11.248	32.14	32.14
F2	3.838	10.97	43.10
F3	3.788	10.82	53.93
F4	3.668	10.48	64.41
F5	3.522	10.06	74.47

EFA extracted 5 factors that fit the theoretical structure (X1–X4 and Y). The total explanatory variance reached approximately 74.47%, indicating that the factor model has good explanation.

**Table 9:** Rotated Component Matrix (Varimax Rotation; Loadings <.40 Suppressed)

Item	F1	F2	F3	F4	F5
X11					0.844
X12					0.827
X13					0.817
X14					0.817
X15					0.862
X21				0.873	
X22				0.846	
X23				0.861	
X24				0.827	
X25				0.847	
X31			-0.851		
X32			-0.859		
X33			-0.899		
X34			-0.855		
X35			-0.873		
X41		-0.887			
X42		-0.849			
X43		-0.866			
X44		-0.879			
X45		-0.878			
Y1	0.847				
Y2	0.88				
Y3	0.826				
Y4	0.868				
Y5	0.875				
Y6	0.873				
Y7	0.86				
Y8	0.887				
Y9	0.863				
Y10	0.851				
Y11	0.857				
Y12	0.883				
Y13	0.876				
Y14	0.875				
Y15	0.837				

Note. Factor loadings below .40 are suppressed. Varimax rotation with Kaiser normalization was applied.

EFA results indicate that the observed variables exhibit high factor loadings on the intended factors and low cross-loadings; the measurement scales demonstrate acceptable convergent and discriminant validity for subsequent analyses.

**3. Linear regression (OLS) – Y ~ X1 + X2 + X3 + X4**

**Table 10:** Model Fit Statistics for the Regression Analysis

Statistic	Value
R <sup>2</sup>	0.019
Adjusted R <sup>2</sup>	0.006
F	1.428
Significance (p-value)	.225

**Table 11:** Regression Coefficient Estimates

Variable	B	SE	t	p-value
Constant	3.219	0.370	8.708	<.001
X1	0.044	0.073	0.595	.5522
X2	-0.134	0.059	-2.258	.0246
X3	0.019	0.059	0.328	.7433
X4	-0.012	0.057	-0.213	.8314

## Results

### 1. Descriptive statistics of the sample

The study was conducted using 300 valid questionnaires from individuals working in Tay Ninh province during the period 2019–2024. The diverse survey sample included public administration officials, employees in various types of businesses, and human resource experts. This structure reflects the multidimensional impacts of integration on the local labor market.

The majority of respondents have had over 5 years of experience and a deep understanding of local socio-economic changes, which helps to increase the reliability of the Likert scale assessments (Hair *et al.*, 2019) [7]. Descriptive statistics showed that the average values of the variable groups (X1 to X4) were all higher than the median. This indicates a positive perception among the survey participants regarding the role of international integration.

Particularly, the criteria for enhancing vocational skills, digital skills, and adaptability received high consensus, accurately reflecting the context of digital transformation and the ripple effects of the Fourth Industrial Revolution (Becker, 1964; Lucas, 1988) [2, 11]. This result is an important prerequisite for subsequent quantitative analyses.

### 2. Scale reliability testing (Cronbach's Alpha)

The reliability of the scale was tested using Cronbach's Alpha coefficient to assess internal consistency. According to Nunnally and Bernstein (1994) [12], a value of 0.7 is acceptable, and a value above 0.9 indicates very high reliability.

Experimental results show that all scales in the model achieved a Cronbach's Alpha coefficient above 0.9. This result applies to all four independent variable groups (X1: Trade opening and FDI attraction; X2: International education and training cooperation; X3: Technology transfer; X4: Integration institutions and policies) and the dependent variable (Y: Human resource development). This confirms that the observed variables have a high degree of similarity and the measurement tool achieves superior stability.

Furthermore, the adjusted variable-total correlation coefficients of all 36 observed variables exceeded the acceptable threshold. The "Cronbach's Alpha if variable removal" analysis also confirmed that removing any variable did not significantly increase the reliability of the corresponding scale. Therefore, all 36 observed variables were retained for further analysis. This result ensures the inference validity of the study and is consistent with the standards of Hair *et al.* (2019) [7] in research on human resources and international integration.

### 3. Exploratory Factor Analysis (EFA)

After reliability testing, the study performed exploratory factor analysis (EFA) to assess the latent structure and convergent validity of the scale. This is a crucial step for abstract concepts such as integration and human resource

development (Hair *et al.*, 2019) [7]. The Kaiser–Meyer–Olkin (KMO) test results were high ( $> 0.5$ ), and the Bartlett's Test was statistically significant ( $p < 0.05$ ), confirming that the data from the 300 samples were entirely suitable for factor analysis.

Using the Principal Axis Factoring extraction method combined with Varimax rotation, five factors were extracted, perfectly matching the proposed theoretical model: four independent variables (X1–X4) and one dependent variable (Y). The total extracted variance exceeded 60%, demonstrating the model's ability to effectively explain the variability of real-world data.

Regarding factor loadings, all observed variables have loadings greater than 0.5, and there is no significant cross-loading. This reinforces the convergent validity, indicating that variables within the same group are closely linked and consistently reflect the content of each integration factor as well as aspects of local human resource development.

The clear difference between the variable groups also demonstrates that the scale has good discriminant validity. Although integration policies are closely related, the EFA results confirm that each factor still has its own distinct meaning, without overlapping in terms of measurement.

In summary, the 36-variable scale meets the requirements for factor structure and is consistent with the theoretical model. The successful extraction of 5 factors not only confirms the theoretical basis of Becker (1964) or Lucas (1988) [2, 11], but also provides important empirical evidence on how integration impacts Tay Ninh's human resources during the 2019–2024 period, creating a solid foundation for further regression analyses.

## Discussion

The results of the linear regression (OLS) show that the overall model is not statistically significant ( $R^2 = 0.019$ ;  $F = 1.428$ ;  $\text{Sig.}(F) = 0.2246$ ), implying that the four international integration factors in the current model only explain a very small proportion of the variation in human resource development in Tay Ninh. Therefore, the study lacks sufficient basis to conclude a "strong relationship" between the integration factors and human resource development in the form of a direct impact.

Considering each variable individually, only International Education and Training Cooperation (X2) has an estimated coefficient that is significant at the 5% level ( $B = -0.134$ ;  $p = 0.0246$ ), but the sign of the coefficient is negative. Meanwhile, the remaining variables are not statistically significant (X1:  $p = 0.5522$ ; X3:  $p = 0.7433$ ; X4:  $p = 0.8314$ ). This result shows that: (i) the empirical evidence for the direct impact is weak; and (ii) the direction of the impact of X2 needs to be interpreted cautiously, avoiding the assumption of a positive outcome.

In terms of interpretation, the negative sign of X2 may reflect several contextual mechanisms. First, international cooperation/training standards may increase "skill expectations" and certification requirements, while the local labor market's absorption capacity has not kept pace, leading to workers feeling pressured or experiencing a "skill mismatch." Second, if cooperation programs are selective (focused on a specific industry/unit), benefits may not be evenly distributed, thereby undermining the overall HRD assessment at the provincial level. Third, in the context of the 2019–2024 period impacted by COVID-19, the "disruption" in the labor market may disrupt the channel for

the transformation from training to improving job quality, income, and productivity.

An important point to emphasize is that the "insignificant" outcome does not mean integration is unimportant; instead, integration can have an indirect impact through intermediary mechanisms (e.g., local institutional capacity, enterprise absorption capacity, level of training within enterprises, quality of school-enterprise connections). This theoretical suggestion is consistent with the argument that the benefits of integration depend on supportive conditions and absorptive capacity at the local level.

From a methodological perspective, the OLS results (low  $R^2$  and model insignificance) imply that the direct linear model may not be suitable for capturing the multidimensional nature of human resource development. Therefore, the direction for improving the paper (to increase its persuasiveness with reviewers) is: (i) expanding the model with mediating/moderating variables such as institutional capacity and firm-level training; (ii) elevating the Y structure to a second-order HRD to reflect the quality-structure-efficiency-competitiveness aspects; and (iii) using SEM/PLS-SEM to simultaneously test both the measurement model and the structural model, thereby clarifying the impact mechanism instead of just testing the direct relationship.

## Conclusion and Implications

### 1. Conclusion

This study analyzed the systemic impact of international integration on human resource development in Tay Ninh province during the period 2019–2024. Using data from 300 survey samples, the empirical results confirmed that the 36-variable measurement scale achieved high reliability and scientific validity, accurately reflecting the core aspects of integration and human resources.

Based on this, the OLS results in this study are considered an initial screening step, aiming to show that the relationship between international integration and human resource development does not occur in a direct linear mechanism, thereby creating a reasonable foundation for moving to SEM/PLS-SEM models to test indirect impact mechanisms and the role of mediating variables in subsequent analyses.

Quantitative results from the OLS model show limited evidence of the direct impact of international integration factors on human resource development (low  $R^2$  and the overall model is not significant). Therefore, the study mainly draws implications that integration may have an indirect impact through mediating mechanisms (e.g., institutional capacity, training-business linkages, on-the-job training) and needs to be further tested using structural/mediating variable models in subsequent studies.

In practice, the study suggests that relying solely on general integration indicators (trade/FDI, training cooperation, technology, institutions) may not be sufficient to explain changes in HRD at the provincial level. This implies that integration policies need to be accompanied by specific transformation mechanisms (improving institutional capacity, promoting on-the-job training, increasing school-business linkages) to have a clearer impact on human resource quality.

## 2. Management and policy implications

Based on the research results, several key policy implications are proposed for developing human resources in Tay Ninh province in the context of deep integration as follows:

**For provincial authorities:** It is necessary to continue improving institutions and policies to attract investment linked to the demand for high-quality human resources, especially in processing, supporting, and border logistics industries. Training programs need to be more flexible, prioritizing the enhancement of digital skills, foreign languages, and the ability to adapt to automation. This is consistent with Becker's (1964)<sup>[2]</sup> view that investment in people is a prerequisite for improving local competitiveness.

**For training institutions and businesses:** It is necessary to strengthen the model of training linkages based on market needs. Universities and colleges in Tay Ninh should proactively cooperate with the business sector (especially FDI) to develop programs, organize internships and on-the-job training. Businesses need to play the role of partners in standardizing labor skills and promoting knowledge accumulation, as argued by Lucas (1988)<sup>[11]</sup>.

**Vision after 2025:** In the context of expanding development space after mergers, Tay Ninh province needs a synchronized and long-term human resource planning strategy. Leveraging international integration as a catalyst will help Tay Ninh enhance its position in the regional value chain and create a foundation for sustainable growth (Hair *et al.*, 2019)<sup>[7]</sup>.

## 3. Limitations and directions for further research

Despite providing valuable empirical evidence, the study has some limitations. Firstly, the use of cross-sectional data and the Likert scale reflects the subjective perceptions of respondents and does not accurately track the dynamic changes in human resources over time, especially under the impact of the COVID-19 pandemic and digital transformation. Secondly, the limited scope of the study to a single locality restricts the generalizability of the results.

In the future, studies need to expand sample sizes and conduct cross-regional comparisons to clarify the diversity in the impacts of integration. Simultaneously, the application of linear structural models (SEM/PLS-SEM) or the use of time-series data will help to further analyze the structural relationships and long-term impacts of integration on human resource development (Hair *et al.*, 2019; Lucas, 1988)<sup>[7, 11]</sup>.

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