

THE IMPACT OF FACULTY HUMAN RESOURCE DEVELOPMENT ON THE PERFORMANCE OUTCOMES OF COLLEGES IN VIETNAM: THE MEDIATING ROLE OF FACULTY COMPETENCE AND THE MODERATING EFFECT OF INSTITUTIONAL TYPE

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Abstract

This study was conducted to evaluate the impact of faculty human resource development on the performance outcomes of colleges in Vietnam, while examining the mediating role of faculty competence and the moderating effect of institutional type. Data were collected from a survey of 330 lecturers and administrators across colleges nationwide. The results of structural equation modeling (SEM) analysis indicate that faculty human resource development has a strong positive effect on institutional performance both directly ($\beta = 0.258$) and indirectly through the mediating variable of faculty competence ($\beta = 0.440$). Notably, the study finds that institutional type does not directly affect performance outcomes but significantly moderates the strength of the impact of faculty human resource development and faculty competence on performance. Based on these findings, the study proposes several managerial implications to optimize faculty human resource development strategies to enhance the performance of colleges in Vietnam in the new context.

Keywords: Faculty Human Resource Development, Faculty Competence, Institutional Performance, Colleges, SEM Model.

1. INTRODUCTION

In the context of vocational education reform, digital transformation, and increasing competitive pressure, the quality of faculty human resources has become a fundamental condition determining the operational capacity and performance outcomes of colleges. In Vietnam, under the pressure of autonomy mechanisms and intense competition in training reputation, colleges are facing urgent demands to optimize organizational performance. Recent studies (Al Qudah et al., 2024; Nguyen Thi Lan Huong, 2023; Sabuhari et al., 2020) reaffirm that faculty human resources are strategic assets, decisive for the survival and sustainable development of educational institutions. Faculty members not only perform teaching functions but also engage in research, knowledge transfer, business collaboration, and contribute to building the academic reputation of the institution.

Faculty human resource development through training, career development, and performance management not only helps lecturers update knowledge but also creates strong motivation for contribution. However, the linkage between faculty human resource development policies and institutional performance outcomes often does not occur directly but through complex transformation mechanisms. According to Nurendra & Thamrin (2021), training programs only truly generate effectiveness when they are transformed into practical competencies of faculty members. Therefore, considering

“Faculty competence” as a mediating variable is necessary to clarify the pathway of human resource policies’ impact.

Although faculty human resource development has been widely studied, in Vietnam, empirical evidence specifically for the college sector remains limited. In particular, the practical context shows that differences in governance mechanisms and resources between public and non-public institutions may create distinct barriers or advantages in implementing human resource policies (Nguyen & Tran, 2021). However, the moderating role of “Institutional type” in the relationship between faculty human resource development and performance outcomes has not been deeply explored using structural equation modeling (SEM).

From this reality, the present study was conducted to address the issue of the impact of faculty human resource development on the performance outcomes of colleges in Vietnam. By simultaneously testing the mediating role of faculty competence and the moderating role of institutional type, the study provides important empirical evidence. The findings not only contribute theoretically but also propose practical managerial implications, helping institutional leaders gain multidimensional insights in designing faculty human resource development strategies tailored to each organizational model.

2. RESEARCH MODEL AND HYPOTHESES

2.1 Proposed Research Model

Based on the Resource-Based View (RBV) theory (Barney, J. B., 1991), the theory of the relationship between human resource management and organizational performance outcomes (Guest, D. E., 1997), and the modern human resource management framework (Noe, R. A., 2020), this study proposes a structural model to examine the impact of Faculty Human Resource Development (FHRD) on the Performance Outcomes of Colleges (PO). The model incorporates Faculty Competence (FC) as a mediating variable and Institutional Type (IT) as a moderating variable.

Independent Variable (FHRD): Faculty Human Resource Development is conceptualized as a higher-order construct comprising four convergent dimensions: personal development, career development, performance management, and organizational development.

Mediating Variable (FC): To ensure focus and relevance to the empirical context of colleges, the study examines two core competency groups that show the most significant influence and transformation in the empirical data: (1) research competence (FC1) and (2) communication, adaptability, and compliance with professional ethics (FC2).

Dependent Variable (PO): College performance outcomes are measured multidimensionally through Indicators of training results, Scientific research outcomes, Reputation and Community contribution, and financial performance.

Moderating Variable (IT): Institutional type (Public vs Non-public colleges) is incorporated into the model to examine differences in the strength of relationships among the variables.

2.2 Research Hypotheses

Based on the theoretical framework and the research objectives focusing on key competency groups, the following hypotheses are proposed:

- H1: Faculty Human Resource Development (FHRD) has a positive effect on the research competence of faculty members (FC1).
- H2: Faculty Human Resource Development (FHRD) has a positive effect on the communication, adaptability, and professional ethics competence of faculty members (FC2).
- H3: Research Competence (FC1) has a positive effect on the performance outcomes of colleges (PO).
- H4: Communication, adaptability, and professional ethics competence (FC2) has a positive effect on the performance outcomes of colleges (PO).
- H5: Faculty Human Resource Development (FHRD) has a positive direct effect on performance outcomes (PO).
- H6: Faculty Competence (FC1, FC2) mediates the relationship between Faculty Human Resource Development (FHRD) and performance outcomes (PO).
- H7: Institutional Type (IT) moderates the relationship between Faculty Human Resource Development (FHRD), faculty competence (FC1, FC2), and performance outcomes (PO).

3. RESEARCH METHODOLOGY

3.1 Research Procedure

The study was conducted through two main stages:

Preliminary Study: A qualitative approach was employed through focus group discussions and expert consultations to adjust the observed variables in the measurement scales, ensuring their suitability for the specific context of colleges in Vietnam.

Main Study: A quantitative approach was applied using a structured questionnaire survey to test the proposed model and research hypotheses.

3.2 Research Sample and Data Collection

Survey Participants: Lecturers and managerial staff who also serve as lecturers at public and non-public colleges in Vietnam.

Sample Size: A total of 400 questionnaires were distributed using a convenient sampling method. 350 responses were collected, and after data cleaning and removal of invalid questionnaires, 330 valid responses were retained for official analysis.

Sample Adequacy: According to Hair et al. (2010), this sample size fully meets the minimum requirement ($n > 5$ times the number of observed variables) to conduct exploratory factor analysis (EFA) and structural equation modeling (SEM).

3.3 Research Measurement Scales

The measurement system used in this study is the result of a selective adaptation from scales that have been validated in reputable international studies (Noe, 2020; Garavan, 1991; Brewster et al., 2016; Nurendra & Thamrin, 2021; Kaplan & Norton [BSC], 2001), and adjusted to fit the specific context of colleges in Vietnam. All observed variables were measured using a 5-point Likert scale (from 1: Strongly disagree to 5: Strongly agree).

Faculty Human Resource Development Scale: Includes 22 observed variables grouped into 4 dimensions.

Faculty Competence Scale: Includes 12 observed variables grouped into 3 dimensions.

College Performance Outcomes Scale: Includes 15 observed variables grouped into 4 dimensions.

3.4 Data Analysis Methods

After data collection, the dataset was processed through several steps using SPSS 26 and AMOS 24:

Reliability Assessment: Cronbach's Alpha coefficients and item-total correlations were employed to evaluate the internal consistency of the measurement scales.

Exploratory Factor Analysis (EFA): Conducted to examine the convergent and discriminant validity of the observed variables.

Confirmatory Factor Analysis (CFA): Used to assess the goodness-of-fit of the measurement model, unidimensionality, convergent validity, and discriminant validity.

Structural Equation Modeling (SEM): Applied to test the research hypotheses and evaluate the mediating and moderating roles within the proposed model.

4. RESEARCH FINDINGS

4.1 Reliability Testing of Measurement Scales

The results of reliability testing indicate that all measurement scales achieved good reliability. Cronbach's Alpha coefficients ranged from 0.867 to 0.973, exceeding the acceptable threshold in quantitative research.

The scales for faculty human resource development and faculty competence demonstrated high internal consistency; the performance outcomes scale also met the requirements, although the training outcomes subscale showed a relatively lower Alpha compared to the others.

Notably, the performance management and organizational development scales exhibited very high Cronbach's Alpha values. This is a positive sign of stability, but it also suggests a high degree of content similarity among indicators. Therefore, further refinement through EFA and SEM is necessary to enhance the discriminant validity of the measurement model.

4.2 Results of Exploratory Factor Analysis (EFA)

The initial EFA results indicated that the data were highly suitable for factor analysis, with KMO = 0.965 and Bartlett's Test showing statistical significance. However, some variables exhibited cross-loadings or insufficient convergence on distinct factors and were therefore removed to ensure a more stable measurement structure.

After refinement, the EFA results yielded KMO = 0.963 and a total variance explained of 80.556%. Four factors were clearly identified: (i) Higher-order construct of Faculty Human Resource Development (FHRD), (ii) Composite construct of College Performance Outcomes (PO), (iii) Research competence group (FC1), (iv) Communication, adaptability, and professional ethics competence group (FC2). These results provide a solid foundation for subsequent testing of the structural model.

Table 1: Summary of EFA Results after Adjustment

Index	Value	Comment
KMO	0,963	Very high sample adequacy
Bartlett's Test	Sig. = 0,000	Data suitable for factor analysis
Number of Factors Extracted	4	Factor structure became clearer after adjustment
Total Variance Explained	80,556%	High explanatory power of the data

Source: Survey results

4.3 Results of Structural Equation Modeling (SEM)

The SEM results show that the main paths in the model are statistically significant. Faculty Human Resource Development (FHRD) positively affects research competence ($\beta = 0.634$) and communication-adaptability-ethics competence ($\beta = 0.617$). In addition, FHRD has a direct positive effect on college performance outcomes (PO) ($\beta = 0.258$).

Among the mediating variables, research competence (FC1) exerts a stronger impact on performance outcomes ($\beta = 0.504$) compared to communication-adaptability-ethics competence (FC2) ($\beta = 0.195$). This suggests that, in the context of colleges, professional and research-related competencies have a more substantial influence on training outcomes, scientific research results, institutional reputation and community contribution, as well as financial performance.

Table 2: Composite Reliability and Convergent Validity of the Model

Variable	Number of Items	CR	AVE
FHRD	22	0,98	0,72
FC1	3	0,93	0,81
FC2	2	0,92	0,86
PO	9	0,94	0,64

Source: Survey results

Table 3: Hypothesis Testing Results in the SEM Model

Hypothesis	Path	Standardized β	p-value	Conclusion
H1	FHRD \rightarrow FC1	0,634	< 0,001	Support
H2	FHRD \rightarrow FC2	0,617	< 0,001	Support
H3	FC1 \rightarrow PO	0,504	< 0,001	Support
H4	FC2 \rightarrow PO	0,195	< 0,001	Support
H5	FHRD \rightarrow PO	0,258	< 0,001	Support

Source: Survey results

Table 4: Direct, Indirect, and Total Effects of Faculty Human Resource Development (FHRD) on College Performance Outcomes (PO)

Type of Effect	Standardized β	Interpretation	Proportion
Direct Effect	0,258	FHRD directly influences PO	36,96%
Indirect Effect via Faculty Competence	0,440	FHRD influences PO through FC1 and FC2	63,04%
Total Effect	0,698	Overall impact of FHRD on PO	100,00%

Source: Survey results

4.4 Extended Analysis: The Moderating Role of College Type

In the extended analysis, the variables FHRD, FC1, and FC2 were standardized into z-scores before constructing interaction terms with college type, to reduce multicollinearity and enhance the interpretability of the model. This approach allows for direct testing of differences in the strength of effects across different groups of colleges. The results show that Faculty Human Resource Development continues to exert strong effects on both groups of faculty competencies in the moderated model. At the same time, both FHRD and the two competency groups positively influence performance outcomes. Notably, college type does not have a significant direct effect on performance outcomes, but all interaction terms are statistically significant. This indicates that college type does not directly determine the level of effectiveness; rather, it moderates how resources and competencies are transformed into outcomes.

Table 5: Results of Effects in the Moderated SEM Model

Relationship	Standardized β	C.R.	p-value
ZFHRD \rightarrow ZFC1	0,658	13,466	***
ZFHRD \rightarrow ZFC2	0,645	13,009	***
ZFHRD \rightarrow PO	0,364	6,794	***
ZFC1 \rightarrow PO	0,240	5,317	***
ZFC2 \rightarrow PO	0,263	5,914	***

Source: Survey results

Table 6: Hypothesis Testing Results for the Moderating Role of College Type

Hypothesis	Path	Standardized β	p-value	Conclusion
H7	INT_FHRD \rightarrow PO	-0,171	< 0,001	Support
	INT_FC1 \rightarrow PO	0,366	< 0,001	Support
	INT_FC2 \rightarrow PO	-0,091	0,007	Support

Source: Survey results

After refinement, the EFA results yielded KMO = 0.963 and a total variance explained of 80.556%. Four factors were clearly identified: (i) Higher-order construct of Faculty Human Resource Development (FHRD), (ii) Composite construct of College Performance Outcomes (PO), (iii) Research competence group (FC1), (iv) Communication, adaptability, and professional ethics competence group (FC2). These results provide a solid foundation for subsequent testing of the structural model.

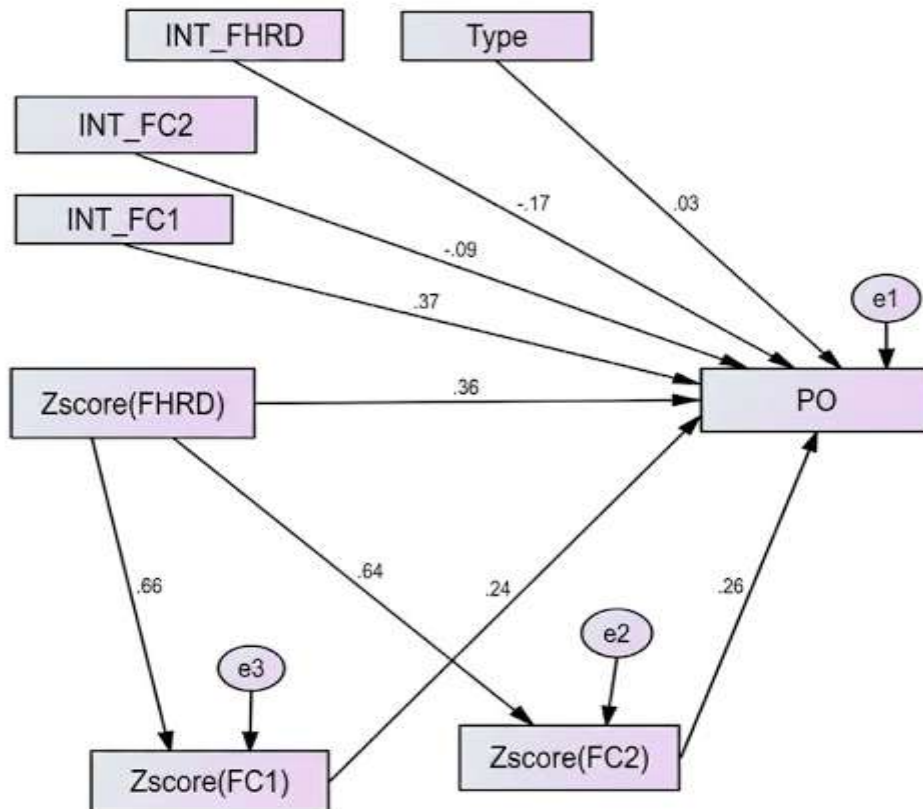


Figure 1: Estimated Structural Model with the Moderating Role of College Type

Source: Survey results

Although some overall fit indices (Chi-square/df = 4.161; CFI = 0.845; TLI = 0.834; RMSEA = 0.115) do not fully reach the ideal thresholds according to the stringent traditional standards (Hu & Bentler, 1999), in social science research with complex model structures and realistic sample sizes, several methodological scholars (e.g., Hair et al., 2014; Marsh et al., 2004) argue that cut-off values should not be applied rigidly. Therefore, in the empirical context of Vietnamese colleges, with the complexity of faculty human resource data, these results still reflect practically meaningful impact patterns. In particular, the stability of the path coefficients has been confirmed through the Bootstrap technique with very small errors, allowing the study to confidently draw conclusions about the relationships between Faculty Human Resource Development and Performance Outcomes.

5. MANAGERIAL IMPLICATIONS

Colleges need to redesign faculty human resource development policies with a competency-based orientation. The focus should not merely be on the number of training courses or participation rates, but on the extent to which these activities are transformed into research competence, adaptability, and specific professional outputs.

Faculty development activities should be linked to performance evaluation systems and regular feedback mechanisms. This enables institutions to accurately identify development needs, avoid dispersed investments, and increase the likelihood that knowledge and skills acquired through training are effectively applied in practice.

Given limited resources, colleges should prioritize programs that enhance research competence, promote evidence-based teaching innovations, and strengthen linkages between faculty, enterprises, and professional communities.

Human resource development must go hand in hand with organizational development. Financial support for research, a positive academic environment, a culture of innovation, and adequate infrastructure are essential conditions for faculty development to generate impact at the institutional level.

The moderating results indicate that faculty human resource development policies should not be applied rigidly as a one-size-fits-all formula across all colleges. Policy design needs to consider differences in college type to ensure that faculty competencies are more effectively transformed into performance outcomes.

6. CONCLUSION AND LIMITATIONS OF THE STUDY

6.1 Conclusion

This study tested the theoretical model of the relationships between faculty human resource development, faculty competencies, and performance outcomes in Vietnamese colleges, based on survey data from 330 faculty members. The SEM analysis results show that:

Faculty human resource development (including personal development, career development, performance management, and organizational development) has a strong positive impact on faculty competencies and institutional performance outcomes. This confirms that faculty development is a core driver for enhancing competitive advantage in vocational education.

Faculty competencies play a crucial mediating role, transmitting and amplifying the effects of faculty human resource development on training outcomes, scientific research outcomes, and financial outcomes of colleges.

The study identified a significant moderating role of college type. Specifically, the effectiveness of transforming faculty human resource development into performance outcomes is currently lower in public colleges compared to non-public colleges, suggesting governance bottlenecks that need to be addressed.

6.2 Limitations of the Study

Despite achieving important results, this study still has several limitations:

Regarding sample size and sampling method: The study employed a convenient sampling approach with 330 responses. Although this meets statistical requirements, its representativeness for the entire college system nationwide may be limited. Future research should expand the sample size and adopt probability sampling methods to enhance generalizability.

Regarding factors in the model: The research model focused primarily on internal institutional factors. Performance outcomes are also influenced by external factors such as macroeconomic policies, labor market demand, and technological changes. Future studies could incorporate these exogenous variables to develop a more comprehensive model.

Regarding analytical methods: This study analyzed cross-sectional data collected at a single point in time. Using panel data or time-series data in future research would allow for a more accurate assessment of variations and long-term effects of faculty human resource development policies on institutional performance.

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