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Internal control in the autonomy mechanism: A study at Vietnamese public universities

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Abstract: This study investigates the interaction between internal control (IC) and the autonomy mechanism and its impact on the operational performance of Vietnamese public universities. The paper is based on Agency theory, Contingency theory, and previous studies to build the research model. A questionnaire was developed, distributed, and collected from leaders, officials, lecturers, and staff of Vietnamese public universities, selected using random sampling. Quantitative analysis methods employed include Cronbach's Alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). The research results indicate that the autonomy mechanism enhances the influence of internal control on organizational performance. However, unlike previous studies, the findings suggest that managerial autonomy has a minor negative impact on the performance of public universities. Based on the results, the paper proposes instructive recommendations for governmental agencies and universities in setting internal controls to improve performance within the context of the autonomy mechanism.

Keywords: *Autonomy mechanism, Internal control, Public university.*

1. Introduction

Control is understood as the work of reviewing regulations, decision-making processes, and the implementation of management decisions as reflected in operations to grasp and manage those operations effectively. In practice, control includes both internal control and external control [1]. Among these, internal control (IC) is a process, effected by an entity's management and personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: effectiveness and efficiency of operations; reliability of financial reporting; and compliance with applicable laws and regulations [2]. Internal Control comprises five components: Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring Activities [3].

Research on the impact of IC on organizational performance is a widely studied topic in both the private and public sectors globally. Similarly, in Vietnam, research on Internal Control is increasingly expanding to public sector entities. This is particularly relevant as the Vietnamese government has issued numerous requirements and regulations related to the implementation of the autonomy mechanism at public service units, including public universities.

A report by the Vietnam Ministry of Education and Training at the 2022 University Autonomy Conference also indicated that university autonomy has been evidenced by many positive changes, and the autonomy creates a competitive environment. Indicators in finance, human resources, and academics have shown significant growth: the proportion of lecturers with doctoral degrees increased from 25% (2018) to 31% (2021); approximately 33% of universities cover both recurrent and investment

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expenditures; the average income of lecturers increased by 21% (2018-2021); and the number of internationally published articles increased 3.5 times over four years. However, reality also shows that the level of autonomy implementation varies among institutions. From the perspective of state management in both professional and financial aspects, public universities exhibit disparities in management capacity and control systems. This is one reason explaining the differences in the outcomes of autonomy implementation. Therefore, a comprehensive study of the internal control system in conjunction with the autonomy mechanism, specifically organizational and financial autonomy, in public universities is crucial. This will provide an important foundation for the effective practical implementation of autonomy in Vietnamese public service units, which has been promoted in recent years.

2. Literature Review

2.1. Research on Internal Control in Public Universities

Research on Internal Control in organizations has been conducted early in various fields, not only in private enterprises but also in public sector units [4]. This is confirmed by studies on Internal Control in the public sector by numerous authors such as Wang [5], Fan et al. [6], and Cornelius et al. [7]. According to Fan et al. [6], research on Internal Control in public universities possesses distinct characteristics compared to private enterprises and other public units. This difference stems from the operational objectives of public universities. Beyond financial goals like increasing profits, revenue, or accumulation, the broader objective of public universities in China and worldwide includes social goals such as training human resources and scientific research.

Like international studies, research on Internal Control in Vietnamese public universities also aims to enhance performance in both financial and non-financial aspects, such as teaching quality and scientific research. A study by Nguyen [8] at universities under the Ministry of Industry and Trade indicated that financial governance significantly impacts the quality of university education. However, Nguyen's [8] study remained at the case study level with qualitative methods rather than quantifying the specific degree of impact. Meanwhile, other studies have broader scopes covering all aspects of Internal Control, such as research by Dinh [9] and Phan [10]. Using the five Internal Control components, Phan [10] provided quantitative results. Internal Control in universities in the Thai Nguyen region was measured by the author using a 5-point Likert scale developed based on the Committee of Sponsoring Organizations (COSO) [2] indicators. The author also measured the financial performance of universities in the Thai Nguyen region based on profitability, revenue diversification, achievement of development goals, and the ability to increase staff income. Through linear regression analysis with 295 surveys from staff of 30 units under Thai Nguyen University, the study indicated that all internal control factors positively influence the effectiveness of financial management.

2.2. Research on Autonomy in Public Universities

Autonomy or the autonomy mechanism in public units, in general, is a time-sensitive concept heavily dependent on the legal and political factors of each country [11]. To date, studies on the impact of autonomy on the performance of public organizations have not yielded conclusive findings. In education, research on the relationship between autonomy and performance is somewhat more abundant, given the multiple levels of training and various performance measurement methods. The most common are studies on autonomy models in public universities across different countries. Typically, Fielden [12] research synthesized previous studies into four models of management organization in universities regarding managerial autonomy: the State Control model (e.g., Malaysia); the Semi-Autonomous model (e.g., New Zealand and France); the Semi-Independent model (e.g., Singapore); and the Fully Independent model (e.g., Australia and the United Kingdom). Studies following this approach highlight the advantages and disadvantages of each model, thereby providing policy recommendations for relevant authorities. Dobbins and Knill [13] argue that the full state control model binds the operational purposes of universities to serve the aims of the state administrative

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apparatus. This control limits academic freedom, one of the fundamental pillars ensuring the quality and development of higher education. Conversely, research by Ferlie et al. [14] on the fully autonomous model suggests that to compete more effectively for students and financial resources, universities must provide learning services to their primary customers, students, and, further, businesses.

The second approach involves studies applying quantitative methods to measure the impact of autonomy on the performance of public universities. Representatives of this group are Ritzen [15] and Agasisti and Shibanova [16]. Ritzen's [15] study, conducted on a very large sample of over 500 universities in 32 countries over multiple years, confirmed a positive relationship between autonomy and university performance. Specifically, Ritzen [15] indicated that universities' autonomy in human resources is proportionally related to the number of graduates and published research. Additionally, the author found a positive impact of public funding on the number of graduates and published research. Furthermore, Ritzen's [15] study also affirmed a positive relationship between a university's number of graduates and published research, and employer satisfaction and graduate productivity.

In Vietnam, the issue of autonomy in public service units in general and public universities in particular is also receiving attention. Consequently, studies on the relationship between the autonomy mechanism and the performance of public universities are quite common, with diverse approaches. This diversity comes from exploring the relationship of the autonomy mechanism with various aspects measuring the performance of Vietnamese public universities. Some typical studies include Tran [17]; Dao [18]; Dang and Pham [19], and Mai et al. [20].

Using qualitative research methods, Tran [17] emphasized the importance of financial autonomy in improving the performance of higher education institutions, especially public ones. Specifically, among the elements constituting the autonomy mechanism in public universities, financial autonomy is always considered the core content. Tran [17] research supplements previous studies on the flexibility in defining financial autonomy for a higher education institution. This aligns with the management characteristics of public universities and their ability to ensure recurrent and investment expenditures. Meanwhile, the study by Dao [18] focused on the aspect of managerial autonomy. Accordingly, the author pointed out that governance, quality assurance, and finance are three key elements in the reform process. Through in-depth interviews with 20 subjects, including senior managers at public higher education institutions and the Ministry of Education and Training, the study revealed that although state budget expenditure on education has continuously increased over the years, it cannot meet the development needs of higher education. Additionally, the state's unclear distinction between the functions of governance control and operational management is limiting the autonomy, creativity, and development of universities [18].

It is evident that studies on the impact of the autonomy mechanism on the performance of public units in general and public universities worldwide are quite abundant, but quantitative studies remain relatively limited. This research gap is addressed in this study.

2.3. Research Gaps

Based on the review of domestic and international research, the author identifies two gaps that need to be filled in research on Internal Control and the autonomy mechanism in public universities. First, studies on autonomy in public universities are primarily qualitative and focus on financial autonomy, while academic autonomy, managerial autonomy, and human resource autonomy remain underexplored. Second, although many studies examine the role of Internal Control in public universities, research related to the autonomy mechanism is entirely novel. This article will fill these research gaps with results obtained from quantitative research conducted at public higher education institutions in Vietnam.

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3. Theoretical Framework

3.1. Underlying Theories

The first and most relevant is Agency Theory, which explains the behavioral differences among subjects within the same organization based on conflicts of interest. According to Jensen and Meckling [21], each subject in an organization pursues different goals, and conflicts of interest may exist between parties. For public service units, especially revenue-generating units like universities, this theory also explains conflicts between the owner (the State) and the management team in decision-making. The autonomy mechanism applied in Vietnam grants more power to managers, while the state gradually reduces its guarantee of operational funding for these units. Consequently, management decisions can lead to conflicts of objectives among subjects regarding financial, academic, and personnel issues. Agency Theory is an important basis for explaining the influence of the autonomy mechanism on the performance of Vietnamese public universities.

The second underlying theory is the Contingency Theory, which was first known in studies on leadership styles and employee satisfaction and motivation in organizations by Fiedler [22]. However, this theory was later expanded significantly in studies on organizational models or accounting information systems, notably by Otley [23], Tiessen and Waterhouse [24], and Chenhall [25]. Accordingly, this theory posits that no single governance system is completely effective and unique for an organization. Changes in internal and external factors, such as the environment, information technology, etc., will affect the effectiveness of the governance system; these are called contingency or moderating factors.

Based on Contingency Theory, the author considers changes in the management institution as a contingency factor influencing the relationship between IC and the performance of public universities. Specifically, in this case, it is the shift from a mechanism dependent on state budget funding to an autonomy mechanism.

3.2. Research Model and Hypotheses

3.2.1. Research Model

Based on a synthesis of domestic and international works on internal control and the autonomy mechanism in public higher education institutions, as well as the underlying theories, the author proposes the research model shown in Figure 1 below.

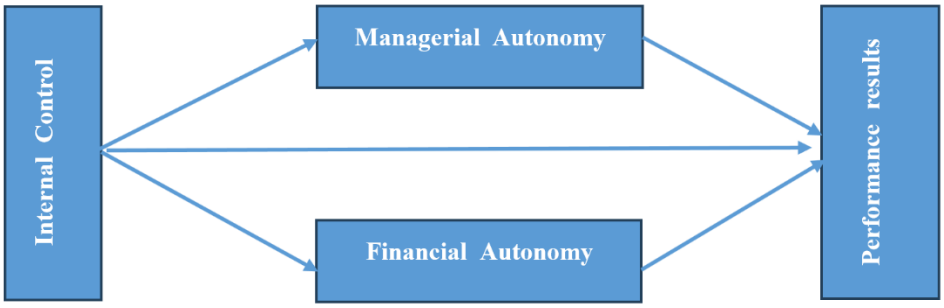

Figure 1.
Research model.

3.2.2. Research Hypotheses

Based on the model, the author proposes the following four research hypotheses:

H_1: Internal control has a direct and positive impact on the performance of Vietnamese public universities.

H_2: Financial autonomy has a direct and positive impact on the performance of Vietnamese public universities.

H_3: Managerial autonomy has a direct and positive impact on the performance of Vietnamese public universities.

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H₅: The autonomy mechanism plays a mediating role in enhancing the impact of internal control on the performance of Vietnamese public universities.

3.2.3. Variables Measurement

To measure the variables in the research model, the author inherits and synthesizes measurement scales from previous studies. The results are presented in Table 1 below.

Table 1.
Measurement Scale System.

No.	Variable Name	No. of Indicators	Code	Source
1	Internal Control			
	Control Environment	4	MTKS	Committee of Sponsoring Organizations (COSO) [2]
	Risk Assessment	4	DGRR	Committee of Sponsoring Organizations (COSO) [2]
	Control Activities	3	HĐKS	Committee of Sponsoring Organizations (COSO) [2]
	Information Communication	3	TTTT	Committee of Sponsoring Organizations (COSO) [2]
	Monitoring Activities	4	HĐGS	Committee of Sponsoring Organizations (COSO) [2]
2	Autonomy Mechanism			
	Managerial Autonomy	7	TCQL	Pruvot et al. [26]
	Financial Autonomy	5	TCTC	Pruvot et al. [26]
3	Performance Results			
	Financial performance	3	KQTC	Tatiana and Muravyev [27]
	Non-financial performance	3	KQPTC	Wang et al. [28]

4. Research Methodology and Results

This article employs quantitative research methods with analytical techniques including: Scale Reliability Assessment, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM).

4.1. Research Data

Data used for analysis were collected using random sampling to ensure objectivity. Based on the list of officials, lecturers, and staff from participating universities, the author randomly selected respondents for the survey regardless of gender, position, or seniority. In this phase, 304 questionnaires were distributed via both direct and online methods (Google Form). Of the total distributed surveys, 267 were returned, and 250 valid responses were used for analysis. According to the sample size formula by Hair et al. [29], this sample size is sufficient for testing statistical hypotheses.

4.2. Scale Reliability Assessment

To assess scale reliability, the author used Cronbach's Alpha in SPSS 25.0. Results indicated most scales had Cronbach's Alpha > 0.6 and Corrected Item-Total Correlation > 0.3, except for indicators MTKS4 and DGRR4. Table 2 shows the reliability results after removing unsatisfactory indicators.

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Table 2.
Cronbach's Alpha Reliability Assessment Results.

Item-Total Statistics				
	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
1. TCQL: alpha = 0.880				
TCQL1	22.89	16.016	0.635	0.867
TCQL2	22.83	15.404	0.711	0.857
TCQL3	22.95	15.720	0.652	0.865
TCQL4	22.90	15.677	0.721	0.856
TCQL5	22.84	15.608	0.725	0.856
TCQL6	22.86	15.773	0.667	0.863
TCQL7	22.88	15.584	0.572	0.877
2. TCTC: alpha = 0.852				
TCTC1	15.87	4.372	0.656	0.824
TCTC2	15.84	4.202	0.675	0.819
TCTC3	15.98	4.297	0.607	0.838
TCTC4	15.86	4.453	0.676	0.820
TCTC5	15.81	4.108	0.714	0.808
3. MTKS: alpha = 0.786				
MTKS1	7.92	1.274	0.628	0.710
MTKS2	7.81	1.430	0.599	0.739
MTKS3	7.92	1.351	0.654	0.681
4. DGRR: alpha = 0.832				
DGRR1	7.88	1.536	0.769	0.692
DGRR2	7.92	1.745	0.630	0.825
DGRR3	7.90	1.435	0.688	0.777
5. HDKS: alpha =0.836				
HDKS1	7.14	2.180	0.680	0.790
HDKS2	7.08	2.146	0.682	0.789
HDKS3	7.08	1.969	0.734	0.737
6. TTTT: alpha = .851				
TTTT1	7.17	2.534	0.789	0.734
TTTT2	7.38	2.454	0.666	0.849
TTTT3	7.26	2.513	0.718	0.795
7. HDGS: alpha = 0.795				
HDGS1	11.70	2.916	0.648	0.722
HDGS2	11.70	3.004	0.619	0.737
HDGS3	11.74	2.737	0.659	0.715
HDGS4	11.72	3.263	0.500	0.792
8. KQTC: alpha = 0.820				
KQTC1	7.94	1.578	0.680	0.746
KQTC2	7.82	1.471	0.644	0.787
KQTC3	7.92	1.560	0.702	0.725
9. KQPTC: alpha = 0.833				
KQPTC1	7.78	3.096	0.700	0.762
KQPTC2	7.51	3.167	0.714	0.748
KQPTC3	7.68	3.174	0.666	0.796

4.3. Exploratory Factor Analysis (EFA)

Factor analysis for all variables in the model was performed using the Principal Axis Factoring extraction method and Promax rotation. The EFA results presented in the table below show that the KMO value reached 0.820, an acceptable level, indicating that the factor analysis is appropriate and suitable for the data. Bartlett's Test of Sphericity had a Sig. value = 0.000 (< 0.05), confirming that the observed variables are correlated.

Table 3.
KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.813
Bartlett's Test of Sphericity	Approx. Chi-Square	4056.289
	df	561
	Sig.	0.000

Table 4.
Factor Matrix.

	Factor								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
TCQL4	0.792								
TCQL6	0.774								
TCQL2	0.762								
TCQL5	0.757								
TCQL3	0.679								
TCQL1	0.648								
TCQL7	0.632								
TCTC4		0.796							
TCTC5		0.787							
TCTC1		0.722							
TCTC2		0.716							
TCTC3		0.621							
HDGS3			0.778						
HDGS1			0.753						
HDGS2			0.687						
HDGS4			0.548						
TTTT1				0.897					
TTTT2				0.763					
TTTT3				0.758					
HDKS3					0.873				
HDKS1					0.777				
HDKS2					0.721				
DGRR1						0.905			
DGRR3						0.752			
DGRR2						0.706			
KQPTC1							0.837		
KQPTC2							0.801		
KQPTC3							0.714		
KQTC3								0.856	
KQTC1								0.765	
KQTC2								0.656	
MTKS3									0.816
MTKS1									0.759
MTKS2									0.632

Note: Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

The exploratory factor matrix also showed that the measurement indicators ensured convergent and discriminant validity with factor loadings > 0.5 and eigenvalues> 1. After performing EFA, the 24 observed indicators converged into 9 research variables as per the intended model. In the next processing step, data will be analyzed for fit with the research model using Confirmatory Factor Analysis (CFA).

4.4. Confirmatory Factor Analysis (CFA)

To test the fit of the data with the research model, a measurement model was established where the research variables were examined for their interactions. CFA not only indicates the model's fit but also re-evaluates the scales for reliability, convergent validity, and discriminant validity.

According to Hair et al. [29], the fit of the structural model with the research data set is measured by the Chi-square test, CMIN/df, GFI, TLI, CFI, and RMSEA values. Figure 2 below shows that the test values generally met the conditions.

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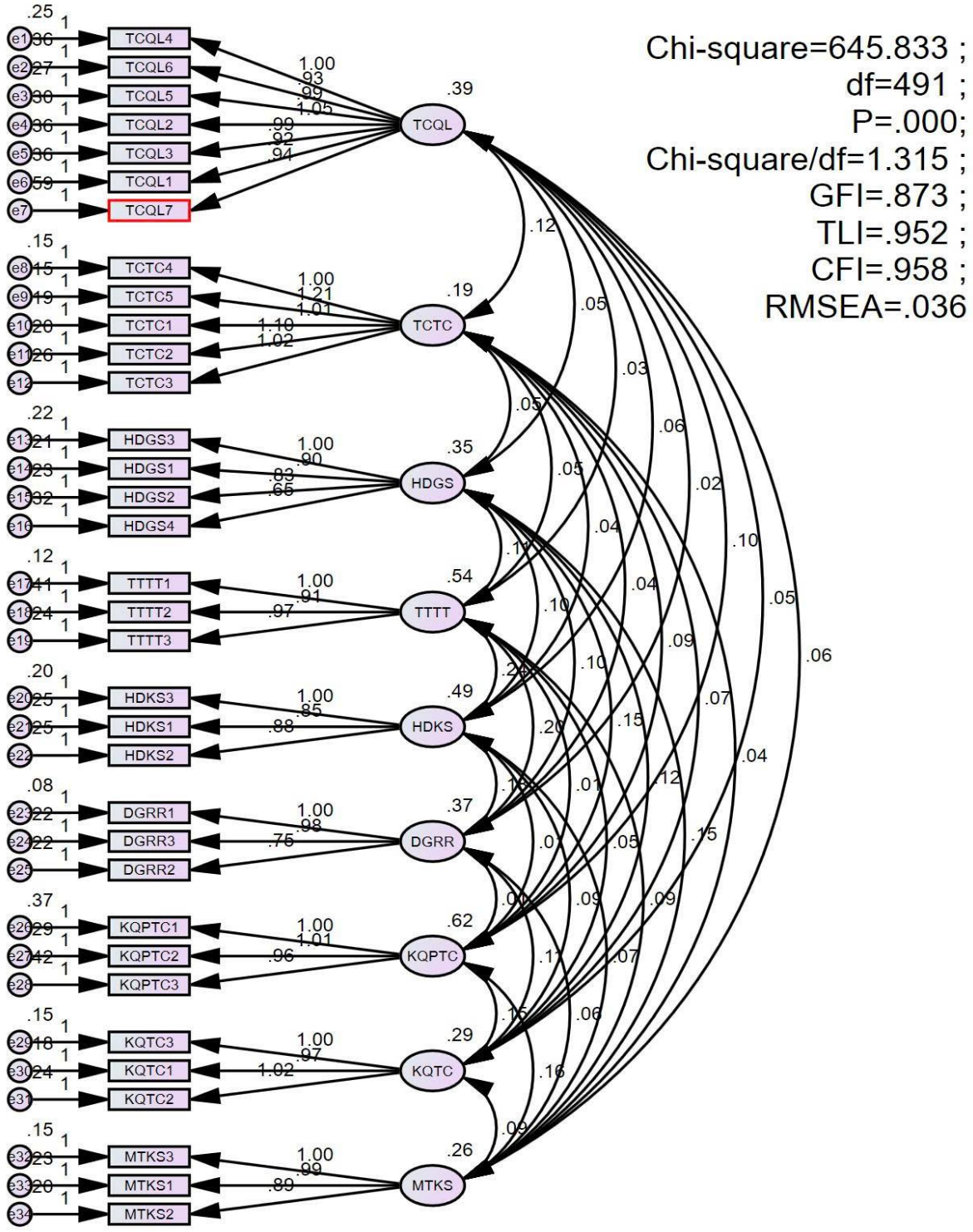

Figure 2.
Confirmatory Factor Analysis Results.

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Specifically, Chi-square = 734.738 with p_value = 0.000 < 0.05; CMIN/df = 1.258 < 2; CFI and TLI > 0.9; RMSEA = 0.032 < 0.08 all met the requirements according to Hair et al. [30]. Only the GFI index < 0.9 did not ensure an excellent model fit, but was still > 0.85, the minimum acceptable condition [30].

4.5. Hypothesis Testing

Based on the research model presented in section 3.2, the latent variables include IC, Managerial Autonomy (TCQL), Financial Autonomy (TCTC), and Performance Results (KQHD). Since IC and KQHD are second-order constructs, the research model is represented in the structural form as follows.

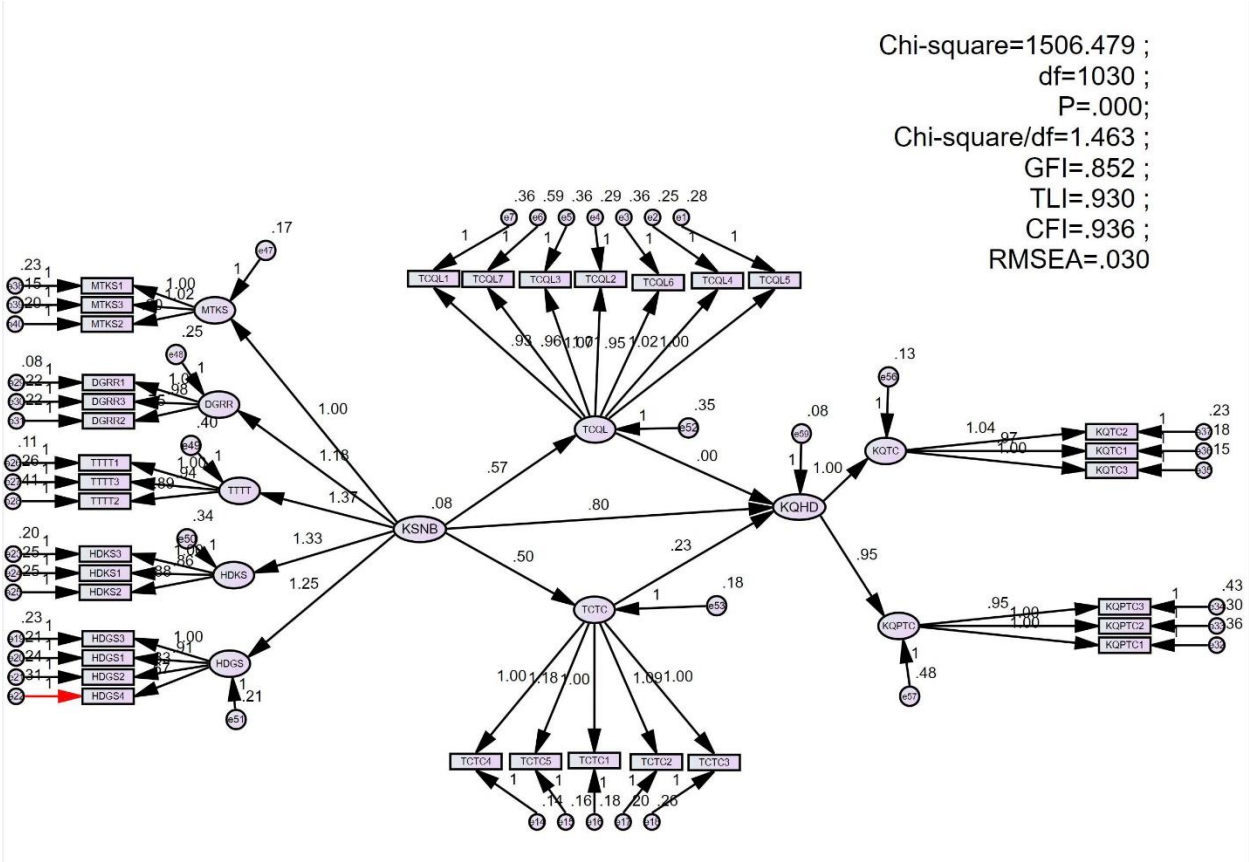

Figure 3.
Model Fit Test Results.

4.5.1. Research Model Fit

The linear structural analysis results showed the model has 515 degrees of freedom. The P_value = .000 < 0.05 and the Chi-square value adjusted by degrees of freedom CMIN/df = 1.463 < 2.00, CFI and TLI > 0.9; RMSEA = 0.037 < 0.08 ensure the structural model's fit [30]. With GFI = 0.852 > 0.85 considered acceptable, the structural research model fits the research data.

4.5.2. Testing Direct Effects

The test results showed that the p-value of the relationship between Financial Autonomy and Performance Results, and Internal Control and Performance Results, was smaller than 0.05, thus hypotheses H_1 and H_2 were accepted. Meanwhile, hypothesis H_3 was rejected because the p-value for this relationship (Managerial Autonomy -> Performance) was 0.951, higher than the threshold of 0.05.

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Furthermore, the negative Standardized Estimates value also indicated that the direction of the impact of Managerial Autonomy on the performance of public universities in the Red River Delta region was negative. Additionally, Table 5 shows that Internal Control is the factor with the strongest impact on performance, with a standardized regression coefficient of 0.583.

Table 5.
Direct Effects Test Results.

Relationship			Hypothesis	Estimates	P_value	Estimates Standardized	Conclusion
TCQL	<---	KSNB		0.568	0.004	0.265	
TCTC	<---	KSNB		0.504	***	0.327	
KQHD	<---	TCQL	H3	-0.004	0.951	-0.006	Rejected
KQHD	<---	TCTC	H2	0.232	0.008	0.261	Accepted
KQHD	<---	KSNB	H1	0.800	***	0.583	Accepted

Note: (***: p value <0.0001)

4.5.3. Testing Indirect Effects

To test the mediating role of the autonomy mechanism in the relationship between internal control and the performance of public universities in the Red River Delta region, the author used the bootstrap technique with 1,000 resamples and a 95% significance level for direct and indirect effects in the research model. Table 6 shows the test results for hypothesis H_4. With a p-value of 0.031, less than 0.05, hypothesis H_4 was accepted. Internal control's impact is enhanced through the autonomy mechanism.

Table 6.
Indirect Effects Test Results.

	KSNB	TCTC	TCQL	KQHD
TCTC	...	...	...	...
TCQL	...	...	...	...
KQHD	0.031	...	...	...

Note: (***: p value <0.0001).

5. Research Findings and Recommendations

The hypothesis testing results show that internal control is a factor strongly influencing the performance of public universities. This result is consistent with previously published domestic and international studies such as Nguyen [8], Nguyen [3], Phan [10], Mugo [31], Duh et al. [32], and Cornelius et al. [7]. However, the novelty of this study lies in supplementing these results quantitatively using an SEM model with a sample size of 250, which had not been done in previous studies.

Furthermore, an important contribution of this study is the simultaneous consideration of two aspects of the autonomy mechanism: financial autonomy and managerial autonomy, instead of focusing solely on financial autonomy as in previous studies: Tran [17] and Dang et al. [33]. The author adds the aspect of managerial autonomy alongside financial autonomy. However, the rejection of hypothesis H_3 and the negative standardized regression coefficient indicate that managerial autonomy not only lacks a positive impact but tends to have a negative effect. This is a completely new finding not found in previous domestic or international studies. This suggests that the governance environment, management capacity readiness, and level of understanding about autonomy among Vietnamese public universities are still uneven and insufficient to leverage the effectiveness of managerial autonomy.

Additionally, this study is the first to quantitatively demonstrate that the autonomy mechanism plays a mediating role in the relationship between internal control and performance results. With hypothesis H_4 accepted, it can be confirmed that autonomy not only directly affects performance but also enhances the effectiveness of internal control, thereby improving overall operational efficiency. This is also a completely new finding compared to previous studies on this topic.

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This study not only reinforces the conclusions of previous works but also expands knowledge on how autonomy and internal control interact to improve performance in Vietnamese public universities.

Alongside the obtained results, this study also has some limitations that future research could address, such as the scope of autonomy considered, the geographical research area, and other factors related to universities' management mechanisms.

Based on the discussion of the research results, this section presents some recommendations for public universities and for state management agencies.

Public universities should strengthen and perfect the internal control system according to the Committee of Sponsoring Organizations (COSO) [2] framework across the five components: Control Environment, Risk Assessment, Information and Communication, Monitoring Activities, and Control Activities. The acceptance of hypothesis H_1 shows that enhancing internal control in public universities is extremely urgent. According to the model test results, this is the factor with the strongest impact on performance. Public universities should enhance financial autonomy capacity, including improving revenue diversification, increasing budget utilization efficiency, and gradually reducing dependence on the state budget. The test results for hypotheses H_2 and H_3 show that financial autonomy positively affects performance, whereas managerial autonomy has not confirmed.

In addition, public universities should focus on improving the governance capacity of the leadership team, especially when operating under managerial autonomy. They should also invest in information technology and digitalize governance to enhance transparency and support data-driven decision-making.

For the governmental authorities like the Ministry of Education and Training, the Ministry of Finance, and other State Management Agencies, they should review, adjust, and provide specific guidance for implementing autonomy, especially managerial autonomy, avoiding mechanical application when the capacity of universities is still limited. Governmental authorities should support training and workshops, particularly on university governance, financial management, internal control, and risk management. Develop autonomy policies according to a suitable roadmap, categorizing universities based on their readiness level to avoid disparities in implementation. Strengthen inspection and supervision mechanisms, ensuring autonomy goes hand-in-hand with accountability.

For accreditation organizations and higher education support networks, they should integrate content on internal control and autonomy into quality accreditation standards. They need to support consulting and experience sharing among universities, especially those that have successfully implemented autonomy.

The research results emphasize that to implement autonomy effectively in Vietnamese higher education, it is necessary for such governmental organizations to:

+ Enhance the quality and effectiveness of the internal control system.
+ Substantially strengthen financial autonomy.
+ Carefully consider the degree of managerial autonomy.
+ Build a coordination mechanism between autonomy, internal control, and accountability.

6. Conclusion

This paper contributes to existing literature in two main ways. *First*, it explores and confirms the effects of internal control on the managerial and financial autonomy of Vietnamese public universities. *Second*, this paper indicates the impacts of internal control and autonomy mechanisms on the performance of public universities in Vietnam environment. From research findings, the study has proposed recommendations for improving the internal control of Vietnamese public universities within the autonomy mechanism.

Nonetheless, the paper still has some limitations, including a small sample size, not including the government role in the model, and cultural factors. These barriers, therefore, challenge internal control, autonomy, and impact Vietnamese public universities. This might be a helpful research gap for future studies.

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Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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