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The mediating role of innovation on enabling and coercive control in enhancing HEIs performance

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Abstract
Research aims: In a competitive environment, leaders of higher education institutions (HEIs) must adopt strategies to enhance performance. This study examines the role of management control systems (MCS) in fostering innovation to improve HEIs performance.
Design/Methodology/Approach: Using a quantitative approach, data were collected through surveys from 210 lecturers at private HEIs in Indonesia, employing random sampling techniques. Hypothesis testing was conducted using partial least squares structural equation modeling (PLS-SEM).
Research findings: The results reveal that MCS, encompassing both enabling and coercive control, significantly enhances higher education performance. Additionally, innovation was found to impact performance positively. The results also showed that innovation mediated the relationship between MCS implementation and performance improvement, suggesting that supportive leadership and constructive feedback from leaders not only encourage innovation but also contribute to improving overall organizational outcomes.
Theoretical contribution/Originality: This study is among the first to conceptualize MCS through the dual lenses of enabling and coercive control as a catalyst for innovation in higher education. Integrating management control theory with innovation-driven performance frameworks it contributes to both academic discourse and practical HEIs governance.
Research limitation/Implication: A key limitation is the focus solely on private higher education. Future research should compare private and public higher education, as differing organizational cultures and regulations may influence control system effectiveness and innovation. The findings offer theoretical insights into the relationship between MCS, innovation, and performance in higher education while also providing practical guidance for higher education managers in designing effective strategies.
Keywords: Coercive Control; Enabling Control; Higher Education Performance; HEIs Governance; Innovation; Management Control System

Introduction

Higher education performance has been a topic of great interest over the last few decades (Torre et al., 2017), measured using different perspectives ranging from auditing, assessment, benchmarking, and accreditation (Vlasceanu et al., 2007). Performance in this sector is quite different from others in knowledge, economic base characteristics such as quantity and quality of human resources, human resources in terms of entrepreneurship, basic research, applied research, research and development, research evaluation, action research, creation in terms of knowledge, accumulation sharing utilization and internalization

for industry, and social responsibility (Urdari et al., 2017) also including the performance of internal activities supporting these functions including financial performance (Asif & Searcy, 2014).

Competition between universities highlights the importance of new performance measures to evaluate private and public universities (Torre et al., 2017). As a result, methods for assessing the performance of higher education institutions are subject to revision, and practitioners and scholars are exploring applying new metrics and approaches typical of the private sector (Balaboniene & Vecerskiene, 2014). The competitive environment requires higher education leaders to adopt strategies to improve their performance. Improving quality through accreditation is one strategy that is widely used. The accreditation process is believed to overcome all these challenges. With accreditation, universities are intended to build a reputation for the long term (Arrieta & Avolio, 2020).

Accreditation status can also be used to measure the performance of higher education institutions (HEIs) (Vlasceanu et al., 2007). Accreditation is used not only to see the fulfillment of HEIs standards (compliance) but also to assess the performance of an HEI (Pangkalan Data Pendidikan Tinggi, 2024). Accreditation is an achievement of the performance of an HEI, whether it is a public HEIs, private HEIs, academic HEIs, or religion-based HEIs. In 2023, 7% of public HEIs and 40% of private HEIs have not been accredited, out of a total of 4,004 HEIs in Indonesia.

Accreditation is considered a measure of higher education performance because accreditation indicates that higher education institutions have been comprehensively evaluated by competent examiners and meet minimum standards (Kumar et al., 2020). Accreditation illustrates the performance of higher education by assessing its suitability and provides confidence to students that the HEI and its study programs have been recognized (Iqbal et al., 2024). At the same time, some researchers have found various objectives of universities that use accreditation as a strategy to build reputation in the long term (Arrieta & Avolio, 2020), increase the number of new students (Kumar et al., 2020), increase the number of academic staff (Ibrahim, 2014), improve the reputation of teaching, research, and quality of graduates (Kumar et al., 2020), and reassure students and society that their HEI is recognized (Brittingham et al., 2010).

The unaccreditation of several HEIs in Indonesia indicates that the HEIs performance in general is still not optimal. One solution to overcome this problem is to implement a management control system (MCS). According to Sasmita et al. (2017), MCS plays a crucial role in improving organizational performance, including higher education. By implementing MCS, universities can be more effective in managing resources, improving the quality of education, and achieving the expected accreditation standards. Overall performance is highly dependent on good MCS implementation to achieve planned performance. In this case, MCS consistency and commitment are important factors that facilitate the implementation of governance principles, vision, and sustainable higher education performance (Muktiyanto et al., 2020).

There are several reasons why MCS is so important for an organization (Shurafa & Mohamed, 2016). One of the reasons is, MCS become a tool used by managers to achieve organizational goals through controlling available resources (Ismail, 2016). The purpose of MCS is to provide direction for innovative and efficient strategic efforts with limited resources (Pratolo et al., 2022). If the organization fails to implement MCS, it will result in huge financial losses, damaged reputation, decreased overall performance, and end in organizational failure (Spanò, 2022).

This study builds upon the MCS framework proposed by (Radtke & Widener, 2016) which integrates (Simons, 1991; Simons et al., 1990) MCS typology and (Adler & Borys, 1996) theoretical perspective. Radtke and Widener (2016) categorize MCS into two distinct but complementary types: enabling control and coercive control. Enabling control fosters transparency, flexibility, and employee participation, creating an environment conducive to ethical values such as trust, fairness, and autonomy (Beuren et al., 2022). Conversely, coercive control involves strict supervision and compliance enforcement, which, while effective for achieving organizational goals, may conflict with values such as integrity and individual autonomy (Radtke & Widener, 2016). The interplay between these two control mechanisms has significant implications for institutional innovation and performance, yet the literature lacks a nuanced understanding of their differential effects across organizational contexts (Van der Steen, 2022).

Previous studies have examined enabling control (Bernd & Beuren, 2022; Dimes & de Villiers, 2020; Toyosaki, 2024; Van Triest et al., 2023; Wijethilake et al., 2018) and coercive control (Bisbe et al., 2019; Doornich et al., 2019; Ekstrom, 2020; Stark & Hester, 2019) separately, this causes differences in research results. The balance of the use of enabling control and coercive control has not been studied much; therefore, this study will examine enabling control and coercive control together.

Previous research has found that MCS has a direct influence on performance (Gupta & Sharma, 2014; Hokayem & Kairouz, 2014; Kardos, 2012; Kim & Miller, 2008; Nofianti & Suseno, 2014), but some studies did not find a strong relationship between MCS and performance (Henri, 2006; Moores & Mula, 2000; Widener, 2007). The ambiguity or gap in the results of this study is due to the fact that previous researchers did not use two types of controls simultaneously, which would affect the effectiveness of MCS implementation in relation to performance.

The higher public awareness of the importance of education requires HEIs to have optimal performance. To achieve optimal performance, universities must innovate in order to be able to adapt to the needs of their stakeholders. Innovating is an organization's desire to obtain improved performance and increased competitiveness (Fagerberg et al., 2005). Innovation can help universities develop new programs or services that can increase their competitiveness and reputation. Innovation can also help universities to adjust to changes in the environment and student needs. Innovation can improve HEIs performance in terms of increasing the number of students, increasing revenue, and increasing reputation (Radianto, 2015).

Innovation is the application of new ideas and capabilities that respond to the environment to achieve success (Marin-Idarraga & Cuartas-Marin, 2019). Previous research states that innovation significantly affects performance (Biswas & Akroyd, 2022; Endenich et al., 2022; Henao-García et al., 2023; Kocak et al., 2017). However, Wijethilake et al. (2018) argues that innovation itself does not lead to improved performance. Innovation does not affect performance if the innovation is not appropriate to the needs of the organization. Innovations that are not implemented properly will also have no effect on organizational performance (Marin-Idarraga & Cuartas-Marin, 2019).

In creating innovation, MCS has a role in producing innovation because it is part of capability. Existing research confirms the significant impact of innovation on institutional performance (Biswas & Akroyd, 2022; Endenich et al., 2022; Henao-García et al., 2023; Kocak et al., 2017). However, some scholars argue that innovation alone does not necessarily lead to improved performance unless it aligns with the institution's strategic needs and is effectively implemented (Marin-Idarraga & Cuartas-Marin, 2019; Wijethilake et al., 2018). MCS plays a crucial role in fostering innovation, as it serves as a structural mechanism that guides organizations in leveraging their innovative capabilities (Alharbi, 2020; Endenich et al., 2022; Nani & Safitri, 2021; Sa'adon, 2019). Nevertheless, the effectiveness of MCS in stimulating innovation remains a subject of debate, as not all MCS applications yield positive outcomes (Lill et al., 2020). This study seeks to bridge this knowledge gap by examining the extent to which enabling and coercive control mechanisms within MCS contribute to innovation and, consequently, to higher education performance.

In addition, this study focuses on private HEIs in Indonesia because although HEIs play an important role in providing higher education for most students in Indonesia, they often face greater challenges than public HEIs in terms of resources, autonomy, and competition (Lambey et al., 2023). Amidst limited resources and a fiercely competitive environment, HEIs need to optimize their management control systems to drive innovation and improve performance. Therefore, the context of HEIs in Indonesia offers a unique and relevant environment to study the role of MCS, innovation, and performance. This research will provide valuable insights for private HEIs top management on how to increase the effectiveness of MCS to drive innovation and improve competitiveness in an increasingly competitive higher education market.

This research makes significant contributions to both theory and practice. From a theoretical perspective, it advances the understanding of MCS in the higher education sector by elucidating its role in driving innovation and institutional performance. Specifically, it provides empirical insights into how MCS mechanisms facilitate innovation within the context of private universities in Indonesia, a developing country. Practically, this study offers valuable guidance for higher education administrators on optimizing MCS implementation to foster innovation and enhance institutional competitiveness. By integrating management control theory with innovation-driven performance frameworks, this research provides a comprehensive perspective on the strategic management of HEIs in an increasingly competitive global education landscape.

Literature Review and Hypotheses Development

Resource Orchestration Theory

This research adopts the resource orchestration theory (ROT) perspective to explain how MCS, innovation, and HEIs performance are interrelated. ROT focuses on the active role of management in orchestrating, combining, and utilizing available resources to create value and achieve strategic goals (Sirmon et al., 2011). In the context of HEIs, ROT argues that the effectiveness of MCS in driving performance depends not only on their fit with the external environment but also on management's ability to use MCS as a tool to orchestrate resources associated with innovation, including knowledge, skills and creative ideas (Chadwick & Dabu, 2009).

According to the ROT perspective, the implementation of MCS, both enabling and coercive, influences management's ability to perform three key processes: structuration (acquiring and controlling resources), incorporation (combining resources to create new capabilities), and utilization (using capabilities to create value) (Sirmon et al., 2011). Enabling control facilitates the identification and collection of resources for innovation, as well as building collaborative organizational structures (Iqbal et al., 2024). Coercive control ensures efficient resource allocation and alignment with strategic goals (Alharbi, 2020). Thus, innovation acts as an important mediator, as the effectiveness of MCS in improving HEIs performance depends on management's ability to direct resources toward the creation and implementation of effective innovations (Zheng et al., 2011).

The Effect of MCS Towards HEIs Performance

The strong competition for higher education quality will be related to accreditation and ranking. Therefore, the Indonesian government has strengthened the issue of higher education quality management by officially adopting the Kaizen method in the HEIs education quality assurance system in 2018. This adoption is part of an effort to commit to the application of the total quality management (TQM) philosophy in the realm of higher education, where concern for students, alums, and employer satisfaction is enhanced (Octavianus et al., 2021). In the implementation of Kaizen quality assurance, all programs and activities, both academic and non-academic, must follow quality standards, key performance indicators, and strategies formulated to drive continuous quality improvement. In addition, the Indonesian government is also promoting the issue of strengthening internal control in higher education (Sofyani et al., 2022a).

The main goal of higher education organizations is excellent academic service quality, efficiency, and economy, not profit-oriented. Increased management control for decision-making is also related to the level of institutional performance (Brown, 2001). MCS encourages efficiency in utilizing organizational resources (Pratolo et al., 2022), work is done in accordance with standards, and proper resource allocation results in quality services (Gordon & Kalenzi, 2019).

This fact proves that the issue of MCS in higher education is very important and interesting to research. However, as far as researchers knew, there is less research on MCS in higher education than in business organizations or companies. Previous research on MCS in higher education (Al-Tarawneh & Mubaslat, 2012; Bobe & Taylor, 2010) has not been able to explain in depth some important aspects, such as the right MCS design for HEIs and what strategies HEIs top management need to use in implementing MCS. The most important internal context in achieving HEIs performance is MCS (Gupta & Sharma, 2014; Hokayem & Kairouz, 2014; Kardos, 2012; Kim, 2008; Nofianti & Suseno, 2014).

MCS is a tool used by managers to achieve organizational goals through controlling available resources (Ismail, 2016). MCS is the process by which managers ensure the resources they use are effective and efficient in achieving organizational goals (Chapman, 1998; Davila & Ditillo, 2017). The goal of MCS is to provide direction for innovative and efficient strategic efforts with limited resources (Pratolo et al., 2022). MCS with enabling or coercive control characteristics have two complementary and interdependent roles in organizations (Santos & Beuren, 2022). Both are used to enable employees and managers to seek opportunities, solve problems, and exercise control over the achievement of organizational goals (Ahrens & Chapman, 2004; Burney et al., 2009). Based on the arguments and previous research, the following hypothesis can be formulated

H_{1a}: *Enabling control affects HEI performance.*

H_{1b}: *Coercive control affects HEI performance*

The Effect of MCS Towards Innovation

Much of the literature examines the relationship between MCS and innovation (Beuren et al., 2021; Sa'adon, 2019; Spekle et al., 2017). The literature highlights that positive control systems (enabling) can be used as a tool to increase the capacity to process information and encourage active interaction, as it involves discussions between subordinates and managers. The ongoing dialog and exchange of ideas help them critically evaluate achievements in terms of quality, productivity, and effectiveness of new products or processes introduced (Koufteros et al., 2014). Active communication can help in the learning process and increase employee creativity to innovate (Nani & Safitri, 2021). In increasing innovation, MCS plays a crucial role by providing the structural and informational foundation necessary for developing innovation capabilities. These capabilities are significantly shaped by MCS, as the systems support learning, coordination, and strategic alignment that foster innovation. The use of MCS will increase innovation (Alharbi et al., 2020; Endenich et al., 2022; Nani & Safitri, 2021; Sa'adon, 2019). . However, when the MCS used is negative (coercive control), the use of MCS will have a negative effect on innovation due to restrictions on freedom of creativity (Henri, 2006). Based on previous arguments and research, the following hypothesis can be formulated:

H_{2a}: *Enabling control affects innovation.*

H_{2b}: *Coercive control affects innovation.*

The Effect of Innovation Towards HEIs Performance and Its Role as Mediation

Innovation is the application of the ability of new ideas that have a function to respond to the environment to achieve success (Marin-Idarraga & Cuartas-Marin, 2019). Previous research states that innovation significantly affects performance (Biswas & Akroyd, 2022; Endenich et al., 2022; Henao-García et al., 2023; Kocak et al., 2017). However, Wijethilake et al. (2018) argues that innovation itself does not lead to improved performance.

Innovation does not affect performance if the innovation is not appropriate to the needs of the organization. Innovations that are not implemented properly will also have no effect on organizational performance (Marin-Idarraga & Cuartas-Marin, 2019). Innovation will improve performance if it is done correctly and in accordance with market needs (Subramanian, 1996). It is important to remember that the success of innovation depends not only on the concept but also on effective implementation. Managing innovation well, conducting in-depth market research, and understanding the process of efficient product or service development is key to getting the maximum benefit from innovation (Choi et al., 2013).

In addition, HEIs top management needs to communicate with its customers, track performance metrics, and continuously monitor market feedback to ensure that innovations remain relevant and add value. With a good approach, innovation can be a powerful tool to improve performance (Sa'adon, 2019). Based on the arguments and previous research, the following hypothesis can be formulated

H_3: *Innovation affects HEI performance.*

Theoretically, the implementation of MCS, whether enabling or coercive, influences HEIs' ability to allocate resources, encourage collaboration, and direct efforts to create new solutions to challenges faced (Sirmon et al., 2011). Innovation, in turn, enables HEIs to develop new programs, improve teaching quality, and enhance competitiveness (Fagerberg et al., 2005). Thus, innovation becomes the bridge that links MCS effectiveness with improved performance. This study, based on ROT, aims to empirically test whether and how innovation mediates the relationship between enabling and coercive control and HEI performance.

H_{4a}: *Innovation mediates the effect of enabling control on HEIs performance.*

H_{4b}: *Innovation mediates the effect of coercive control on HEIs performance.*

The research model that describes the influence between variables in this study is depicted in Figure 1.

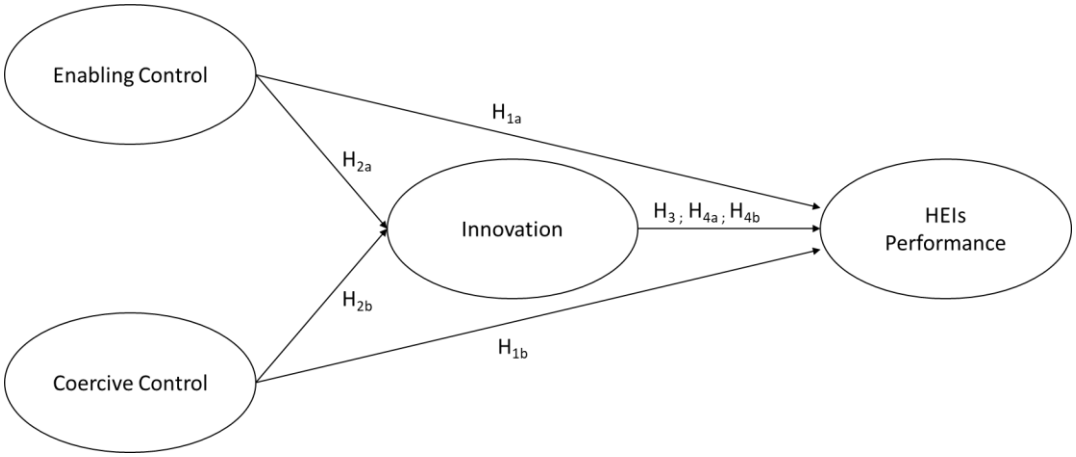

Figure 1 Research Model

Research Method

Data Collection

This research uses a quantitative survey approach. The population and sample of this study were all lecturers of HEIs in Indonesia who have worked at the college for at least 3 years. To ensure an in-depth understanding of internal systems, active involvement in Tri Dharma, accurate long-term assessment, and reduced early experience bias, this study selected permanent lecturers with at least three years of experience in higher education as respondents (Cable et al., 2013; Schein, 2017). This experience enables lecturers to provide valuable insights into the effectiveness of MCS on teaching, research, and community service (Hackman & Oldham, 1976; Locke & Latham, 2002), while providing a realistic perspective on their impact on innovation and college performance (Ittner et al., 2003; Kaplan & Norton, 1996), thus minimizing the bias that may exist in newly joined lecturers (Wanous, 1992).

The determination of the sample size refers to the suggestion of Hair et al. (2010), which states that in survey research, the ideal sample size is between 5 to 20 times the number of items of all research variables used. This study determines the option of 10 x 17 items from the 4 research variables used, therefore the minimum sample size targeted is 170 respondents. After collecting data through questionnaires sent directly to respondents, 210 valid questionnaires were collected to be used as data in this study.

Variabels Measurement

The scales used for each variable were adapted from previous studies and developed by the researcher to suit the place and purpose of the study. The scale for all variables used a 5-point Likert scale, with 1 representing “strongly disagree” and 5 representing “strongly agree”.

HEIs performance is measured using 3 indicators (Iqbal et al., 2024), namely teaching performance (Dicker et al., 2019; Goos & Salomons, 2017), research performance (Yaakub & Mohamed, 2020), and service performance (Asif & Searcy, 2014; Badri & Abdulla, 2004; Hui et al., 2003; Nedwek & Neal, 1994). Enabling control is measured using 5 indicators (Beuren & Santos, 2019), coercive control is measured using 4 indicators (Adler & Borys, 1996), and innovation is measured by 5 indicators used by Al-Jayyousi et al. (2019). The detailed composition of the research instruments, including the specific indicators used to assess HEIs performance, enabling control, coercive control, and innovation, are presented in Table 1.

Table 1 Research Instrument

Variable	Item	Indicators
HEI Performance	HEIP1	My HEIs shows strong performance in teaching activities.
	HEIP2	My HEI shows strong performance in research activities.
	HEIP3	My HEIs shows strong performance in service/community engagement.
Enabling Control	EC1	There are incentives to share information and encourage interaction between leaders.
	EC2	There are opportunities provided to learn and solve problems collaboratively.
	EC3	I have the freedom to innovate when facing obstacles.
	EC4	I am given flexibility in achieving goals and carrying out activities.
	EC5	The system promotes continuous improvement, transparency, and operational flexibility.
Coercive Control	CC1	There is a lack of trust between management and employees.
	CC2	Management emphasizes strict compliance and top-down control.
	CC3	There is minimal informal communication between staff and management.
	CC4	There is a lack of face-to-face interaction between controllers and those being controlled.
Innovation	INV1	The HEIs regularly develops information systems and databases.
	INV2	The HEIs actively develops new academic or support programs.
	INV3	The HEI seeks to continuously improve the technology it uses.
	INV4	There are incentives and rewards provided for innovation and development.
	INV5	The HEIs pays attention to and supports staff morale in relation to innovation.

Data analysis was conducted using structural equation modeling (SEM) techniques estimated from partial least squares (PLS) using SmartPLS v.3.3 software. This technique allows estimating a series of separate but interdependent multiple regression equations simultaneously by specifying a structural model (Hair et al., 2014). Validation was conducted using PLS bootstrapping analysis with bias-corrected and accelerated (BCa), and a significance of 0.05 on a two-tailed test.

Result and Discussion

Demographic Profile

The demographic profile of the 210 respondents (Table 2) from Indonesian HEIs reveals that the majority were male (68.6%), while 31.4% were female. In terms of age, the largest group was between 25-34 years old (53.3%), followed by those aged 35-49 years (41.0%), and a smaller group of respondents were more than 50 years old (5.7%). Regarding educational background, most held a Master's degree (86.2%), with the remaining having a Doctoral degree (14.8%). Geographically, the respondents were primarily from universities on the island of Sumatra (68.6%), followed by Java (21.9%), Kalimantan (5.2%), and Sulawesi (4.3%).

Table 2 Demographic Characteristics of Respondents

Item	Frequency	%
Gender		
Male	144	68.6
Female	66	31.4
Age		
25-34 y.o.	112	53.3
35-49 y.o.	86	41.0
> 50 y.o.	12	5.7
Educational background		
Master Degree	181	86.2
Doctoral Degree	29	14.8
Islands		
Sumatra	144	68.6
Java	46	21.9
Kalimantan	11	5.2
Sulawesi	9	4.3

Measurement Model Assessment (Outer Model)

The assessment of the measurement model (Figure 2) is the initial stage in PLS-SEM to establish internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2022). *First*, the factor loadings of each construct/variable were assessed, and items that had factor loadings less than 0.600 were dropped one by one unless the average variance extracted (AVE) value of their main construct exceeded the threshold value of 0.5 (Hair et al., 2022). *Second*, reliability (alpha values) and validity were also assessed and found to be higher than their respective threshold values of 0.700 (Hair et al., 2022). *Third*, the values of the AVE for each construct were also found to be higher than the recommended value of 0.500 (Hair et al., 2014; 2019). *Fourth,* Discriminant validity is a critical aspect of construct validity that tests whether a concept or construct is truly distinct from other constructs, both conceptually and statistically. In this study, discriminant validity was assessed using the Fornell-Larcker criterion, which compares the square root of the AVE of each construct to the correlations between that construct and others. Discriminant validity is established when the square root of a construct's AVE is

greater than its highest correlation with any other construct in the model (Hair et al., 2014; 2022). The detailed results of the factor loadings, reliability, and validity assessments are presented in Figure 2, Tables 3, and 4.

Table 3 Cross Loading, Reliability, and Convergent Validity Result

	CC	EC	INV	HEIP	Cronbach's Alpha
Coercive Control (CR = 0.937; AVE = 0.789)					
CC1	**0.755**	0.643	0.724	0.565	0.909
CC2	**0.872**	0.441	0.439	0.602	
CC3	**0.940**	0.712	0.739	0.732	
CC4	**0.891**	0.444	0.481	0.628	
Enabling Control (CR = 0.956; AVE = 0.813)					
EC1	0.616	**0.872**	0.697	0.616	0.942
EC2	0.647	**0.887**	0.845	0.771	
EC3	0.580	**0.906**	0.785	0.784	
EC4	0.678	**0.941**	0.848	0.807	
EC5	0.483	**0.922**	0.816	0.663	
Innovation (CR = 0.950; AVE = 0.793)					
INV1	0.697	0.823	**0.802**	0.666	0.934
INV2	0.521	0.763	**0.904**	0.713	
INV3	0.524	0.801	**0.925**	0.818	
INV4	0.578	0.828	**0.954**	0.861	
INV5	0.844	0.756	**0.897**	0.854	
HEIs Performance (CR = 0.884; AVE = 0.718)					
HEIP1	0.835	0.800	0.814	**0.904**	0.805
HEIP2	0.448	0.674	0.764	**0.808**	
HEIP3	0.540	0.548	0.626	**0.823**	

Note: CC = Coercive Control; EC = Enabling Control; HEIP = HEIs Performance; INV = Innovation

Table 4 Discriminant Validity Result

	CC	EC	HEIP	INV
CC	0.867			
EC	0.665	0.906		
HEIP	0.736	0.809	0.846	
INV	0.708	0.885	0.875	0.898

Note: CC = Coercive Control; EC = Enabling Control; HEIP = HEIs Performance; INV = Innovation

As presented in Table 4, all diagonal values (representing the square root of AVE for each construct) are higher than the corresponding values in the rows and columns, indicating that each construct shares more variance with its indicators than with other constructs. For example, the square root of AVE for EC (0.906) is greater than its correlation with CC (0.665), INV (0.885), and HEIP (0.809). This supports the conclusion that the constructs in this study possess adequate discriminant validity. Establishing discriminant validity strengthens the reliability of the model by confirming that the constructs measure conceptually different concepts, thus avoiding multicollinearity issues and enhancing the interpretability of the path coefficients (Henseler et al., 2015). Therefore, the discriminant

validity results confirm that the measurement model is robust and suitable for further hypothesis testing.

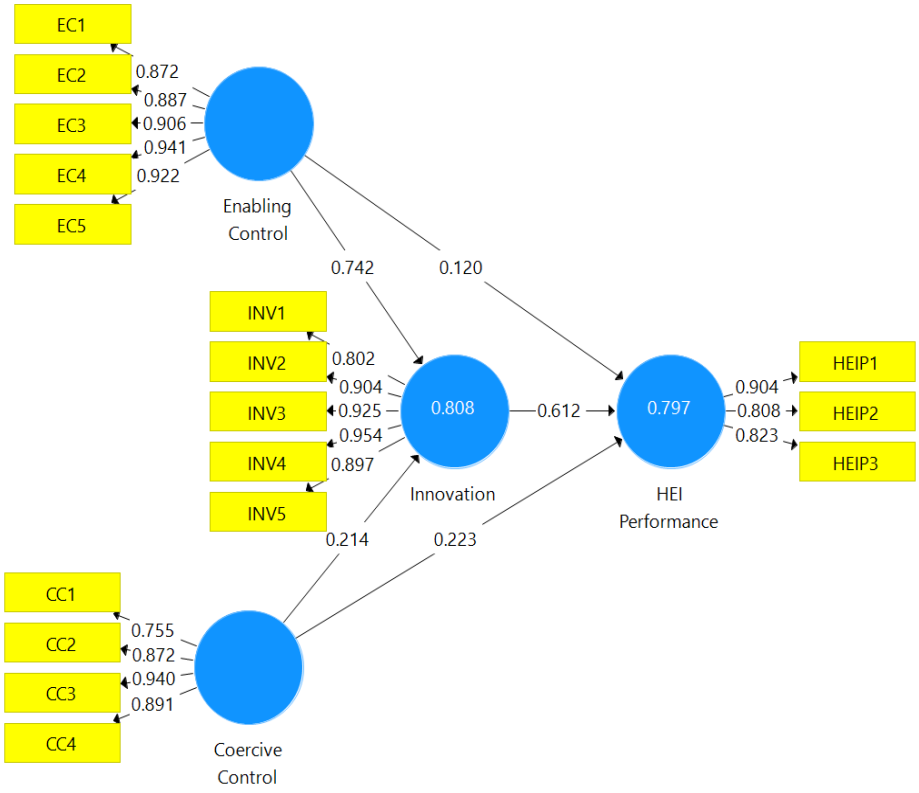

Figure 2 Measurement Model Assessment

Hypothesis Testing (Inner Model)

The inner model shows the relationship between latent variables and other variables under study. Inner model evaluation with the bootstrapping test produces the coefficient of determination R-square, Q-square, path coefficients, and latent variable correlations. The results of the inner model evaluation are described in Table 6.

Table 5 Coefficient of Determinance (R^2) Test Result

Variable	R Square	Adjusted R Square
INV	0.797	0.794
HEIP	0.808	0.806

Note: INV = Innovation; HEIP = HEIs Performance

Based on Table 5, it can be obtained that the adjusted R square value of innovation is 0.794. It means that 79,4% of innovation variables are influenced by enabling control and coercive control, and the adjusted R square value of HEIP is 0.806. It means that 80.6% of the HEIP variable is influenced by INV, EC, and CC.

Table 6 Hypothesis Testing Result

Hypothesis		Original Sample	Sample Mean	Std. Deviation	T-Statistics	P-Values
Direct Effect Test						
EC → HEIP	H_{1a}	0.573	0.572	0.048	11.946	0.000
CC → HEIP	H_{1b}	0.355	0.357	0.053	6.683	0.000
EC → INV	H_{2a}	0.742	0.742	0.047	15.742	0.000
CC → INV	H_{2b}	0.214	0.216	0.046	4.668	0.000
INV → HEIP	H_3	0.612	0.614	0.058	10.608	0.000
Mediation Effect Test						
EC → INV → HEIP	H_{4a}	0.454	0.456	0.055	8.243	0.000
CC → INV → HEIP	H_{4b}	0.131	0.132	0.030	4.336	0.000

Note: CC = Coercive Control; EC = Enabling Control; HEIP = HEIs Performance; INV = Innovation

Table 6 presents the results of the direct and mediation effect tests using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that all proposed hypotheses are supported, as reflected by the statistically significant p-values ($p < 0.05$). However, beyond mere significance, the analysis also reveals the direction and magnitude of each relationship.

Based on the Table 6, the path coefficient of EC is 0.573, indicating a strong positive effect on HEIP. This suggests that when HEIs implement control systems that emphasize participation, flexibility, and transparency, they experience significant improvements in key institutional outcomes such as teaching quality, research productivity, and service excellence. In comparison, CC also exerts a positive effect on HEIP, although to a lesser extent, with a coefficient of 0.355. This implies that structured, top-down control mechanisms—despite often being perceived negatively—can still enhance performance when strategically aligned with institutional goals.

In addition to its direct impact on performance, EC also shows a strong and positive relationship with INV, as indicated by a coefficient of 0.742. This finding highlights the role of participative and adaptive control systems in stimulating innovative activities within HEIs, such as developing new academic programs, adopting advanced technologies, or fostering creative thinking among staff and faculty. Meanwhile, CC also demonstrates a positive, albeit weaker, influence on INV (0.214), suggesting that formalized procedures and compliance-oriented mechanisms can still support innovation when designed to provide clarity and standardization in innovation processes.

Finally, the link between INV and HEIP is both strong and significant (0.612), confirming that innovation is a critical driver of institutional effectiveness. Innovative HEIs are better positioned to adapt to changing environments, enhance their competitiveness, and deliver high-quality services. Moreover, EC exerts a significant indirect effect on HEIP through INV (0.454), indicating that innovation partially mediates this relationship. In other words, EC not only improves performance directly but also indirectly by fostering innovation. Similarly, CC shows a significant, though weaker, indirect effect on HEIP

through INV (0.131), reinforcing the notion that even rigid control systems can contribute to institutional success when they enable innovation as an intermediary outcome.

This study examines the role of MCS, particularly enabling control and coercive control, in driving HEIs performance. The findings suggest that both control mechanisms may significantly influence institutional performance, aligning with previous research (Gupta & Sharma, 2014). However, earlier studies by Henri (2006), Widener (2007), and Moores & Mula (2000) did not establish a strong relationship between MCS and performance, indicating ongoing debate within the literature. Our findings support the perspective of Kim (2008), who argues that MCS plays a critical role in shaping institutional outcomes.
Literature suggests that individuals generally respond positively to formalized control systems when these systems provide motivation, empowerment, and clarity in task execution (Adler & Borys, 1996; Mahama & Cheng, 2013; Van Veen-Dirks et al., 2021). Conversely, when control mechanisms focus excessively on enforcement and compliance, they may generate resistance and negatively impact organizational dynamics. This study suggests that a balanced implementation of enabling and coercive control may help create an optimal environment for both accountability and innovation, ultimately enhancing institutional performance.

The increasing global competition for higher education quality, accreditation, and rankings has led governments to strengthen quality assurance mechanisms. In Indonesia, for example, the adoption of the Kaizen methodology in higher education quality management in 2018 reflects a commitment to TQM principles (Octavianus et al., 2021). The Kaizen approach emphasizes continuous improvement, requiring all academic and non-academic programs to adhere to predefined quality standards, key performance indicators, and strategic initiatives. Simultaneously, the Indonesian government has emphasized the need for stronger internal controls to enhance HEI performance (Sofyani et al., 2022).

The primary objective of HEIs is to ensure the quality of academic services while maintaining efficiency and sustainability rather than maximizing financial profits. Effective management control is essential for strategic decision-making and institutional performance(Brown, 2001). Internal controls not only enhance resource utilization efficiency (Pratolo et al., 2022) but also ensure compliance with standards, leading to higher service quality and institutional credibility (Gordon & Kalenzi, 2019). The findings indicate that MCS may play an important role in institutional performance (Gupta & Sharma, 2014; Hokayem & Kairouz, 2014; Kardos, 2012; Kim & Miller, 2008; Nofianti & Suseno, 2014). By guiding the strategic use of resources, MCS enables managers to improve operational efficiency and long-term sustainability (Ismail, 2016). In line with existing research, this study confirms that MCS provides a structured framework for innovation and strategic decision-making (Chapman, 1998; Davila & Ditillo, 2017). The ability of MCS to balance efficiency, control, and innovation is key to achieving superior performance in HEIs.

In an era of rapid change, universities must innovate continuously to meet stakeholder expectations and remain competitive. Innovation may be essential for universities to

develop new programs, improve service delivery, and enhance institutional reputation (Fagerberg et al., 2005). Innovation also enables universities to respond to shifts in student needs, industry demands, and technological advancements. However, not all innovation translates into improved performance effectiveness depending on alignment with institutional goals and market needs (Marin-Idarraga & Cuartas-Marin, 2019). Poorly implemented innovation may fail to generate meaningful impact (Subramanian, 1996).

Innovation success depends not only on the concept itself but also on its execution. Research underscores the importance of well-managed innovation processes, market research, and efficient resource allocation (Choi et al., 2013). Effective innovation management requires continuous monitoring of performance metrics, engagement with stakeholders, and adaptation to external feedback (Sa'adon, 2019). This study finds that MCS can serve as a mechanism to facilitate innovation, supporting its integration into institutional strategies and ensuring its sustainability. In today's dynamic environment, innovation is a critical driver of organizational success. As globalization, technological advancements, and evolving student expectations reshape higher education, universities must continuously develop new academic offerings, administrative processes, and service models. By integrating MCS with innovation strategies, HEIs can create an adaptive institutional culture that fosters long-term growth and competitiveness.

This study contributes to MCS literature by expanding the understanding of how both enabling and coercive control mechanisms influence institutional performance in HEIs. By integrating MCS with innovation-driven performance frameworks, this research provides a nuanced perspective on how MCS, when effectively implemented, can foster innovation and improve HEI performance. The findings suggest that innovation acts as a crucial mediator in the relationship between MCS and performance, offering new insights into the dynamics of management control in the higher education sector. Furthermore, this research extends the application of MCS theory from corporate settings to the context of higher education, particularly in Indonesia, a developing country with unique challenges.

From a practical standpoint, this study offers valuable guidance for higher education administrators, policymakers, and education leaders in designing and implementing effective MCS strategies. Specifically, the findings emphasize the importance of a balanced approach to MCS, where enabling control mechanisms foster creativity and employee engagement while coercive controls ensure compliance and operational efficiency. By leveraging MCS to stimulate innovation and improve accountability, HEIs can enhance their overall performance and competitiveness in a globalized and increasingly competitive higher education landscape. The study also highlights the role of innovation in driving institutional success, suggesting that HEIs should prioritize the development and integration of innovative strategies to remain relevant and responsive to changing stakeholder needs.

Conclusion

This research aimed to investigate the role of MCS, specifically enabling and coercive controls, in fostering innovation and enhancing performance within Indonesian HEIs. Employing a quantitative survey approach, data were collected from 210 lecturers at private HEIs and analyzed using PLS-SEM. The findings indicated that both enabling and coercive controls within MCS positively and significantly impact HEI performance. Furthermore, innovation was found to mediate the relationship between MCS and HEI performance.

While this study provides important insights, it has several limitations that open avenues for future research. *First*, this research focuses solely on private HEIs, which operate under different regulatory frameworks and financial models compared to public HEIs. Future studies should conduct comparative analyses between private and public HEIs to assess how organizational culture, governance structures, and funding mechanisms influence the relationship between MCS, innovation, and performance. *Second*, while this study captures the perspectives of lecturers and staff, future research could incorporate insights from students, alums, and industry partners to provide a more holistic understanding of HEI performance. A multi-stakeholder approach could yield richer insights into how innovation and control systems impact broader institutional outcomes. *Third*, this study focuses on the Indonesian higher education sector, which has unique regulatory and competitive dynamics. Future research could explore the applicability of these findings in other national and regional contexts, examining whether similar MCS innovation performance relationships hold across diverse higher education ecosystems. Longitudinal studies could also provide deeper insights into the evolving role of MCS in higher education performance over time.

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