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EMPOWERING HIGHER EDUCATION: THE TECH ADVANTAGE IN WORK COORDINATION AND RISK MANAGEMENT FOR FINANCIAL GROWTH

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ABSTRACT
This study examined the relationship of work coordination and Enterprise Risk Management on financial performance in Malaysian public higher education (PHEs). It addresses the gaps on how work coordination and ERM could mitigate financial challenges such as dependence on tuition fees and limited government funding. The responses from 350 key informants across 20 Malaysian PHEs were analyzed using SEM analysis. The findings reveal that work coordination significantly enhances ERM implementation, and ERM implementation positively influence the financial performance, ERM also act as a mediator variable, which has a greater effect on financial performance through work coordination. The findings support the strategic role of ERM in facilitating links between organizational capabilities and financial sustainability. It thus practically recommends increasing capacity through governance structures, investing in digital tools for risk management, and engaging leaders to improve ERM effectiveness. Theoretically, this study extends the Resource-Based View, placing ERM as that critical resource that would turn coordinated efforts into measurable financial outcomes. This study closes the literature gap in risk management in higher education by integrating work coordination and ERM within a comprehensive model of financial sustainability that has pragmatic implications for policymakers and leaders of institutions in strengthening resilience within resource-constrained educational contexts.
Keywords : *enterprise risk management, financial performance, higher education, work coordination*

1. Introduction

The higher education sector in Malaysia is instrumental in facilitating the country's transition toward a knowledge-driven economy (Low, 2024; Nawaz et al., 2020; Qatiti et al., 2023). Notwithstanding significant progress in improving educational standards and attaining global acknowledgment (Ahmad et al., 2023; Amzat et al., 2023; Rana et al., 2023), numerous Malaysian PHEs continue to encounter ongoing financial difficulties. The challenges identified arise from reliance on government funding and tuition fees as the primary sources of income, fluctuations in revenue, and rising operational costs due to digital transformation efforts (Mohd Said et al., 2023). To maintain competitiveness, PHEs must compelled to allocate resources towards sophisticated infrastructures and e-learning platforms, which aggravates their financial burdens. Additionally, intense competition further pressures institutions to generate income independently, resulting in frequent deficits (Sukoco et al., 2021).

While prior studies address work coordination and risk management in various sectors, there is a lack of comprehensive models that connect work coordination and Enterprise Risk Management (ERM) with financial performance, particularly in Malaysian PHEs. The existing literature focuses mainly on ERM in corporate sectors, leaving certain gaps in the literature in understanding its application within the higher education (Setapa et al., 2020). Studies such as Kashif Shad and Lai (2019) emphasize the importance of ERM globally, but its application in Malaysian PHEs remains underexplored. Additionally, studies often fail to investigate how ERM, supported by digital tools, addresses financial sustainability issues specific to PHEs (Abad et al., 2020; Gambetta et al., 2021; Hristov et al., 2024; Mavlutova et al., 2022).

ERM offers a structured approach to identifying, assessing, and mitigating risks, enhancing decision-making and governance (Kashif Shad & Lai, 2019). It has also been proven to be one of the effective frameworks in considering financial risks and ensuring organizational resilience. Moreover, the incorporation of digital tools in ERM demonstrated potentials for improving risk assessments, improving financial reporting, increasing resource optimization, as well as improvement of predictive analytics and real-time reporting (Crawford & Jabbour, 2023; Jia & Wu, 2022; Hameed et al., 2020). However, the adoption of ERM in Malaysian PHEs is still in its infancy, with many institutions still relying on traditional frameworks (Ahmad et al., 2016). This gap necessitates examining how technology-enabled ERM can mitigate financial challenges and improve performance outcomes.

Therefore, this study aims to link work coordination to financial performance in Malaysian PHEs with ERM as the mediating variable. This comprehensive model meets the need, incorporating work coordination, ERM implementation, and financial performance. Hence, the main objectives of this study are: a) to determine the state of work coordination practices in Malaysian PHEs; b) to investigate the relationship of work coordination with ERM implementation and financial performance; c) to examine how ERM implementation mediates the influence of work coordination on financial performance. Thus, this study will address such objectives and will contribute to the literature of ERM and financial sustainability in higher education, including recent developments in digital risk management tools. In doing so, it will provide actionable insight for the administrators and policy makers by emphasizing the strategic role of technology-enhanced ERM in addressing financial challenges in Malaysian PHEs.

2. Literature Review

Sources for this literature review were identified through a cautious selection in relation to the themes of interest which focusing on work coordination and ERM implementation, ERM implementation and financial performance, as well as work coordination and financial performance, between 2019 and 2024. A systematic search via Emerald Insight, Google Scholar, Scopus, and WoS has been carried out to retrieve those peer-reviewing journal articles. Such a review, in this case, represents existing knowledge and thus can be viewed as a reliable starting point of the research. Therefore, based on the review, this study extends the Resource-Based View, placing ERM as that critical resource that would turn coordinated efforts into measurable financial outcomes. This study closes the literature gap in risk management in higher education by integrating work coordination and ERM within a comprehensive model of financial sustainability.

2.1 Technology in Higher Education and Risk Management

Technology is a game-changer that modernizes risk management practices in higher education. This is reflected in the growth of predictive analytics, cloud computing, and artificial intelligence, which also enhance decision-making and risk assessment capabilities in ERM applications (Kahyaoglu & Aksoy, 2021; Zhao, 2022). Prior studies confirm that educational organizations using such technologies achieve better coordination between risk management processes and institutional strategy for a more resilient institution (Hristov et al., 2024; Khaw et al., 2023; Rauf et al., 2023). However, financial constraints and a lack of digital infrastructure have translated to limited adoption of technological innovations in managing risk within PHEs in Malaysia. Study by Ahmad et al. (2016) noted that many Malaysian higher education institutions still rely on traditional, manual approaches to risk management, which are inadequate to address emerging financial and operation-related risks. These outdated approaches hinder their ability to anticipate and respond to challenges efficiently.

Recent studies highlight the potential for digital tools, such as AI-driven risk assessment platforms, to bridge this gap and align the practices with global best practices (Piorkowski, Hind & Richards, 2022; Xia et al., 2023). Therefore, by exploring how Malaysian PHEs can incorporate advanced digital tools into their ERM frameworks, this study addresses a critical gap in the literature. While best practices from around the world emphasize the importance of technology in ERM, little research has been conducted on its application in Malaysian PHEs.

Hence, this study investigates how integrating however tools can enhance the efficiency and effectiveness of ERM in this unique context.

2.2 The Impact of Digital Transformation on Financial Sustainability

Digital transformation has reshaped the operational and financial sustainability of higher education, enabling cost efficiencies and new revenue streams through online programs and digital platforms (Hristov et al., 2024). However, the upfront investment required for these transformations poses significant challenges, particularly for resource-constrained in Malaysian PHEs (Mohd Said et al., 2023).

Most of the literature concerning the digital transformation of higher education, only focused on the long-term gains without discussing the financial pressures it will create in the short term. They identified that the digital transformation acts like a two-edged sword, which improves the long-term financial sustainability while increasing the financial pressures in the short run (Alojail & Khan, 2023; Costa et al., 2022; Mavlutova et al., 2022). These are further compounded by high dependence on tuition fees and increasing competition for students to survive in Malaysian PHEs (Low, 2024).

Though a few existing literature like Neacsu and Georgescu (2023) and Rahi et al. (2023) discusses financial sustainability broadly, however, they failed to outline the nuanced impacts that digital transformation has brought about in Malaysian higher education. While digital transformation has been associated with various improved financial outcomes across the world (Adillah & Fakhrurroja, 2023), however, Malaysian PHEs do not have the suitable regulatory, technological, and cultural contexts to institute this digitation. In addition, only a few studies have examined how digital transformation aligns with ERM practices in mitigating financial risks and improving sustainability within Malaysian PHEs. This study, therefore, serves to address these gaps by establishing how digital transformation, where aligned with ERM strategies, can mitigate financial risks and improves sustainability performance in PHEs.

2.3 Work Coordination

Work coordination helps in aligning departmental effort toward the achievement of objectives, especially regarding risk management. Studies have shown that effective coordination enhances information sharing and decision-making, and ultimately leads to higher performance (Rauf, Jabar & Mansor, 2020; Sukoco et al., 2021). Hristov et al. (2024) emphasize that governance structures must be in a state to give a way promote interdepartmental coordination and collaboration in higher education. Additionally, coordinated effort allows an organization to utilize ERM as a strategic resource in improving the financial performance of the organization (Hameed et al., 2020; Rauf, Jabar & Mansor, 2020).

In Malaysia's PHEs, poor coordination of work has often resulted in discrepancies in risk reporting and ineffective resource allocation (Ahmad et al., 2016). Poor coordination dampens the effectiveness of ERM frameworks, since this relies on smooth coordination in order to operate well. Therefore, by using the RBV, this study postulates that work coordination is an organizational capability that enhances the implementation of ERM frameworks.

While most of the previous studies emphasize that work coordination has a great significance for achieving effective risk management, few studies have addressed the issue of how this aspect influences ERM implementation in Malaysian PHE institutions. Addressing such a gap through this study becomes vital by investigating the relationship between work coordination, ERM, and financial outcomes. Based on the above consideration, the hypothesized relationship can be advanced as follows:

H1: Work coordination positively influences Enterprise Risk Management implementation in Malaysian PHEs.

2.4 Financial Performance of Malaysian PHEs

Financial performance is a persistent challenge for Malaysian PHEs, driven by revenue volatility, rising operational costs, and competition from private institutions (Mohd Said et al., 2023). Studies such as Low (2024) and Utkirov (2023) highlight the increasing financial pressures faced by these institutions, with many struggling to achieve sustainability without

significant tuition fees or external funding. While previous literature focused on financial performance measurement for corporate sector (Amalia, 2023; Nurul Ichsan et al., 2024), however related research with regard to the PHEs sector has remained limited within the context of Malaysia. Preliminary insights into financial problems facing Malaysian PHEs were provided by Ahmad et al. (2016), yet such findings were due for an update in light of the new regulatory and economic environment.

Although recent studies have stressed strategic financial management and risk mitigation in improving organizational performance (Hameed et al., 2020; Khaw et al., 2023), nevertheless these studies often neglect the unique challenges faced by the Malaysian PHE sector, such as reliance on government funding and tuition fees as well as limited expertise and resistance to implement such strategies effectively, leading to persistent deficits and financial instability. Hence, by integrating the ERM framework and financial performance measures, this study will find ways to make Malaysian PHEs more sustainable to address such challenges. From this, the following hypothesis has been presented:

H2: Enterprise Risk Management implementation positively influences the financial performance of Malaysian PHEs.

2.5 Enterprise Risk Management (ERM) Implementation

Enterprise Risk Management (ERM) has become an essential framework to manage risks to ensure resilience and financial stability in higher education (Khaw et al., 2023; Perera et al., 2022). On a global scale, ERM frameworks are developing to integrate sophisticated technologies and real-time data analysis, allowing institutions to proactively manage risks (Crawford & Jabbour, 2023; Jia & Wu, 2022). However, the implementation of ERM in Malaysian PHEs remains in its infancy, with most of them still using traditional frameworks of risk management which do not possess scalability and efficiency for modern-day challenges (Ahmad et al., 2016).

Although recent literature emphasizes the advantages of incorporating digital tools into ERM, including enhanced risk assessment and more efficient reporting processes (Khaw et al., 2023; Mohd Said et al., 2023), however, in Malaysia, all these advances are beyond the resource and expertise capabilities as well as organizational resistance of Malaysian PHEs (Rauf, Mansor & Jabar, 2021). Thus, this study is crucial in determining how Malaysian PHEs can overcome those barriers to support the alignment of ERM practice to leading practice globally in achieving better financial performance. Therefore, the hypothesis is:

H3: Enterprise Risk Management implementation mediates the relationship between work coordination and financial performance of Malaysian PHEs.

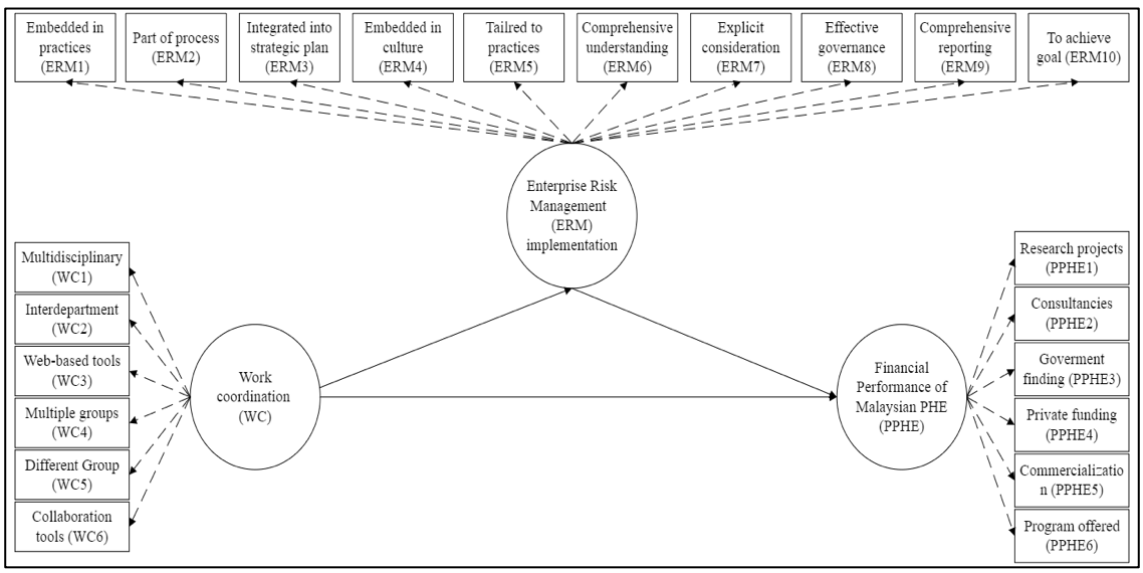

Fig. 1. Research framework

3. Methodology

This study utilizes the quantitative approach through Covariance Based Structural Equation Modelling (CB-SEM) using IBM SPSS Amos 23. Quantitative approach allow for standardized data collection across a large sample, enabling statistical analysis of relationships between variables (Tshabangu, Ba' & Madondo, 2021). This approach is critical by employing a multi-stage sampling strategy, combining both probability and non-probability sampling methods to investigate the relationship between work coordination, ERM implementation, and financial performance in Malaysian PHEs. Abowitz and Toole (2010) have supported a multi-stage sampling method for ensured coverage and representation. Thus, the first stage of non-probability purposive sampling identified the key informants for 20 Malaysian PHEs based on experience and direct involvement in risk management and financial decision-making, that aligns with the objectives of this study. Then, the stratification was made using probability sampling on the key informants into three groups which are risk committees, internal auditors, and top managements. The advantage of this approach is that it will enable a strong analysis of ERM practices and its financial implications.

3.1 Sampling Frame

The target population frame for this study comprises 20 Malaysian PHEs as listed by the Malaysian Ministry of Higher Education in 2024. From this frame, a sample size of 350 key informants were identified through non-probability purposive sampling. These identified key informants were further divided into three groups through probability stratified sampling which comprising of 60 risk committees, 94 internal auditors, and 196 from top management. The internal auditors and top managements will be selected based on a random selection. The sample size for both of these groups are determined based on Krejcie and Morgan (1970) and Saunders and Townsend (2016) which are 75 and 130, respectively. In regard to the risk committee, the probability census sampling will be employed since the population is rather small and manageable hence easy to access during data collection (Kothari, 2004). Therefore, this study will involve all the risk committees, n = 60. Thus, the total sample size this study was n = 265. Below are the Table 1 that shows the distribution of key informants of this study.

Table 1 - Distribution of respondents by university

No.	University Name	Target Respondents			Total	Sample Size			Total
		RC	IA	TM		RC	IA	TM	
1.	UTM	3	6	15	24	3	5	10	18
2.	UM	3	8	7	18	3	6	5	14
3.	UKM	3	5	13	21	3	4	9	16
4.	USM	3	6	12	21	3	5	8	16
5.	UPM	3	7	9	19	3	6	6	15
6.	UUM	3	4	14	21	3	3	9	15
7.	UIAM	3	4	11	18	3	3	7	13
8.	UNIMAS	3	3	9	15	3	2	6	11
9.	USIM	3	3	12	18	3	2	8	13
10.	UTeM	3	5	10	18	3	4	7	14
11.	UiTM	3	10	9	22	3	8	6	17
12.	UMT	3	5	11	19	3	4	7	14
13.	UMP	3	3	7	13	3	2	5	10
14.	UTHM	3	4	9	16	3	3	6	12
15.	UniMAP	3	3	8	14	3	2	5	11
16.	UniSZA	3	4	10	17	3	3	7	13
17.	UMK	3	2	7	12	3	2	5	9
18.	UPNM	3	3	9	15	3	2	6	11
19.	UPSI	3	4	9	16	3	3	6	12
20.	UMS	3	5	5	13	3	4	3	10
21.	Total	60	94	196	350	60	75	130	265

Note: RC = risk committees; IA = internal auditors; TM = top managements

3.2 Participant Details

These include risk committees responsible for overseeing ERM frameworks and compliance such as Director of Risk/Quality, Deputy Director of Risk/Quality and Risk Manager while internal auditors who been appointed by University are responsible professionals tasked with assessing financial performance in terms of the income generation and risk management practices. Finally, top management includes those individuals who are involved in strategic decisions about the institution and providing institutional governance: for example, the Vice-Chancellor, Deputy Vice-Chancellor, Assistant Vice Chancellor, Chief Operating Officer, Bursar, Registrar, Chief Information Officer, Chief Librarian, and Legal Advisor. Overall, participants were selected based on their roles and their familiarity with institutional risk management and financial strategies. The selection criteria included three to ten years of experience in related positions, directly related to either ERM implementation or financial decision-making processes. This will ensure that the collected data are representative of the diverse practices and perspectives in Malaysian PHEs. Data collection took six months in 2024 and was done via online survey questionnaires which were sent to the institutional e-mail lists.

4. Instruments

The survey of this study has been divided into sections: A, B, C, and D in this self-administered questionnaire. Section A: Questions on institutional and respondent profile have been included in the section. Section B: Items on work coordination have been presented. Items were adapted from Rodriguez and Edwards (2019), which has been used to measure implementation of ERM. From different Pre-Testing, Pilot-Testing, and Exploratory Factor Analysis, the results have come out that these 6 items are appropriate for measuring performance in PHE.

Items in Section C are on ERM implementation. The instruments are 10 items adapted from Lundquist (2015). To Section D, the performance of PHE construct has been measured in the current study by using the modified instruments by Wang and Berens (2015) and Asif and Searcy (2014). All responses for Section B and C are measured using a five-point Likert Scale, that is, 1 – Strongly disagree and 5 – Strongly agree. However, for the Likert scale in Section D, the present research followed Donaldson et al. (2013), Casillas et al. (2010), and Wearn et al. (2023) in using the percentage in the measurement of financial performance over the last 3 years as follows: 1 = decreased more than 20%, 2 = decreased 1 to 20%, 3 = unchanged, 4 = increased 1 to 20%, and 5 = increased more than 20%. This is because according to Carton and Hofer (2010), most of the financial measures are generally expressed in terms of percentages as well as to describe the financial performance of an organization more precisely (Cooper, 1993; Shrader & Simon, 1997; Zahra & Bogner, 2000).

4.1. Data Analysis

Out of 20 Malaysian PHEs, there are only 18 that participate in the survey conducted by this research since there is no response recorded for Universiti Malaysia Terengganu (UMT) and Universiti Malaysia Perlis (UniMAP). This would help in finding the highest top five participating universities in the research survey with high percentages > 6.0%. In general, UTM Universiti Teknologi Malaysia, UUM Universiti Utara Malaysia and USM Universiti Sains Malaysia, 8.1, 7.6, and 7.1 percent, respectively. It is followed by UKM and UPSI at 6.7%, Universiti Malaya UM, Universiti Islam Antarabangsa Malaysia IIUM, Universiti Pertahanan Nasional Malaysia UPNM, Universiti Putra Malaysia UPM, and Universiti Sultan Zainal Abidin UnisZA, posting 6.2%. The remaining percentage, 32.8%, was shared among the rest, each ranging from 2.0 percent to 5.7 percent.

By age group, most of the respondents were above 40 years old. About 83.3 percent of the total respondents belonged to this group. Of these, 49.5 percent are between 40 to 49 years of age while over 50 years of age represent about 33.8 percent. Others represent the 30 to 39 years of age group, 12.9 percent, and below 30 years of age group, 3.8 percent. With regard to gender, the sample has shown the present working ratio between males and females within Malaysia. This is evidenced by the fact that male respondents outbalanced their female counterparts by 26.6 percent, making the respective percentages 63.3 percent for males and 36.7

percent for females. In relation to the position of the respondent, 54.8% were working as top management, 34.8 percent as internal auditor, while the risk committees had 10.5% of the total. Again, all of them have had tertiary education, considering that they are the senior personnel of the department.

Only 1 respondent 0.5% that holds Diploma qualification, while the rest of them hold a bachelor's degree and above which 30 percent of the respondents having a bachelor's degree or an advance diploma in their respective fields, followed by 32.4 percent of the respondents have a master's degree and 78 of the respondents have Doctoral degree which amounted to 37.1 percent. What's more, more than 70 percent of respondents have more than 10 years of working experience, which indicates that the respondents had ample time to develop experience in their respective professional fields and hence may be relatively capable and reliable regarding the questionnaires provided without any bias, which is important to ensure the validity of this study. In contrast, 17.1 percent have between 5-10 years of working experience. This leaves the remaining percentage for less than 5 years of work experience not even to a third of respondents at 7.1 percent.

Hence, the proportion of the respondents who had less than 5 years of work experience in dealing with risk management was 41.4%, but over half of this percentage had 5 to over 20 years of experience in dealing with risk management at 58.5%. Thus, it shows that their experiences are more than enough to answer the survey fairly and without bias, hence ensuring validity for the present study.

4.2. Measurement Model

Reliability analysis was performed to determine whether the instrument of investigation of work coordination, ERM implementation, and financial performance of Malaysian PHEs was reliable. From Table 2, against this background, the Cronbach's Alpha value for all the constructs was above 0.7. According to Awang (2012), Awang et al. (2011), Hair et al. (2010) and Sekaran and Bougie (2016), if the Cronbach's Alpha value is more than 0.6 then the instruments are reliable to use for research.

Table 2 - The reliability assessment, Descriptive statistics and CFA of measurement model

Labels	Items	α	CR	AVE	M	SD	SFL	*t*-value
Work coordination		0.93	0.90	0.68				
wc1	The organization encourages multidisciplinary work.				3.88	0.86	0.89	a
wc2	The organization encourages interdepartmental work.				3.80	0.80		
wc3	There are good web-based collaboration tools.				3.89	0.84	0.79	14.04*
wc4	People in organization are willing to work with multiple groups.				3.84	0.82	0.81	14.81*
wc5	There are guiding principles for working with different groups.				3.79	0.82	0.81	14.62*
wc6	There are standards for using collaboration tools.				3.81	0.80		
Enterprise risk management implementation		0.96	0.95	0.72				
erm1	Risk management is embedded in organizations practices and processed in relevant, effective, and efficient way.				3.52	0.76	0.80	a
erm2	Risk management is part of, not separate from, organizational processes.				3.57	0.87	0.84	14.36*
erm3	Risk management plan is integrated into other organizational plans (e.g.: strategic plan).				3.60	0.86	0.86	14.95*
erm4	Risk management is embedded in the culture and practices of the organization.				3.51	0.84	0.85	14.54*
erm5	Risk management is tailored to				3.52	0.80		

	the business practices of the organization.							
erm6	The organization has a current, correct, and comprehensive understanding of its risk.				3.51	0.83		
erm7	All decision-making within the organization involves the explicit consideration of risks.				3.64	0.84	0.83	14.15*
erm8	Risk management is seen within the organization as providing the basis for effective governance.				3.68	0.89	0.84	14.24*
erm9	Comprehensive and frequent external and internal reporting on significant risks and risk management contributes substantially to effective governance.				3.74	0.86	0.88	15.38*
erm10	Administrators regard effective risk management implementation as an important to achieve the organizational objectives.				3.74	0.90	0.87	15.21*
Financial performance of Malaysian PHE		0.94	0.94	0.72				
pphe1	Income generated from research projects.				3.66	0.82	0.85	a
pphe2	Income generated from consultancies.				3.51	0.68	0.86	15.76*
pphe3	Income from public funding.				3.65	0.75	0.85	15.49*
pphe4	Income from private fundin215g.				3.65	0.76	0.84	15.22*
pphe5	Income from commercialization.				3.63	0.67	0.84	15.41*
pphe6	Income generated from program offered.				3.62	0.98	0.86	16.01*

Note: n = 210; a – loadings are fixed to unity to scale the latent variable; *<p.001; SFL = standardized factor loading

Table 2 presents the descriptive statistics of work coordination, ERM implementation, and financial performance of Malaysian PHE. Statements of perceptions by RC, IA, and TM on the coordination of work, implementation of ERM, and financial performance of Malaysian PHEs. In general, all the items are above 3.5 on average. Since the study was using a 5-point scale, logically, all the items that featured in this study were at a good level since the mean value ranged from 3.51 to 3.89 because the work by Rist et al. (2013) classifies such values as good. Awang et al. (2014) and Salem et al. (2019) argued that before modeling the structural model and conducting SEM, the study needs to establish a measurement model of all latent constructs in the model for unidimensionality, validity, and reliability. Confirmation involved a procedure called Confirmatory Factor Analysis. Afterwards, all the validated constructs from CFA procedures were combined, and the measurement model was presented. This comprised exogenous, endogenous, and mediating variables whereby work coordination would fall under the exogenous variable, financial performances of Malaysian PHE, which are considered the endogenous variables, while the mediating variable will be the ERM implementation.

The results of CFA, the variance of the measurement error, and the measurement model of all the constructs are presented in Table 2. It was indicated that CFA had a poor fit according to the full data to the measurement model. However, though all the factor loading for the items is above the value of. 60, fitness index for GFI =. 750 is still below the required level (> .80). This is because some of the items in the measurement model happen to be repetitive in nature. Modification indexes are the output computed by the software and allow one to check item redundancies. Items with MI > 15.0 are indicative of redundancies between two items and thus either have to be deleted or correlated to achieve good fit for the measurement model (Aziz et al., 2015).

Therefore, after several MI have been carried out, through the deletion of the items according to its lower loading, such as wc6, erm6, erm5, and wc2, data fit well with the model: GFI =.81 and other fitness indices were: RMSEA =.03, TLI =.98, CFI =.98, Chisq/df = 1.171. Table 3 depicts Fitness Indexes for the measurement model. In this regards, this study posits

that index values have attained the threshold point for Construct Validity as affirmed by Awang et al. (2011), Awang (2012), Awang et al. (2014), and Bentler & Bonett (1980). Therefore, this study considers the model valid because it has dropped only 4 items out of the 22 items in the model. This is because the dropping of items is not supposed to exceed 20% of the total number of items in a model. Otherwise, the very specific constructs itself is deemed to be invalid because it failed the 'confirmatory' itself (Aziz et al. 2015).

Table 3 - Fitness Indices

Name of category	Fitness Indexes	Acceptance level	Result	Comments
Absolute fit	Goodness of fit index	GFI > 0.80	0.81	Achieved
	Root mean square error of approximation	RMSEA < 0.08	0.03	Achieved
Incremental fit	Tucker-Lewis indices	TLI > 0.90	0.98	Achieved
	Comparative-fit indices	CFI > 0.90	0.98	Achieved
Parsimonious fit	Chi Square/Degrees of Freedom	Chisq/df < 3.0	1.171	Achieved

Once the Fitness Indexes was accepted then the research should be evaluating the Convergent Validity and reliability via the value of Average Variance Extracted (AVE) and Composite Reliability (CR). In general, the minimum value for AVE is considered to be 0.5, while for CR, it is taken as 0.6. The results showed that for the constructs and all their items part of this measurement model, the required value has been achieved. This would imply that for further analysis, all items of the model can be retained. Results for AVE as an indication of Convergent Validity and CR as an indication of Construct Reliability are summarized in Table 2. The Discriminant Validity is checked by the development of the Discriminant Validity Index Summary presented in Table 5. From the information in Table 5, one can be sure that all the constructs in this model achieved Discriminant Validity because the diagonal value is higher compared to the values in its row and column (Aziz et al., 2015).

That means no problem of multi-collinearity has taken place in this model. Once all the requirements to test for Unidimensionality, Validity, and Reliability of the Measurement Model are met, thus, this Confirmatory Factor Analysis model can proceed with the development of the Structural Equation Modeling.

Table 4 - Discriminant validity test

Construct	PPHE	WC	ERMI
Financial performance of Malaysian PHE (PPHE)	.85		
Work coordination (WC)	.31	.83	
Enterprise risk management implementation (ERMI)	.34	.37	.85

Note: The bold numbers in diagonal row are the square root AVE values

4.3 Structural model testing

Structural model testing The estimated direct effect between constructs is shown in Table 5. In brief, the results indicate that work coordination is positively related to the financial performance of Malaysian PHEs ($\beta = .20$, $p < .05$). In addition, expectedly, work coordination is related to ERM implementation positively, with a value of $\beta = .14$, $p < .05$, significant. Results are presented in the following table and thus, it shows that ERM implementation is significantly related to financial performance of Malaysian PHEs: $\beta = .23$, $p < .05$.

Table 5 - Results

Predictor Variables	Criterion Variables	β	*t*-value	p-value	Result
Work coordination	Financial performance of Malaysian PHE	.20	2.31	.021**	Significant
Work coordination	ERM implementation	.14	2.18	.030**	Significant
ERM implementation	Financial performance of Malaysian PHE	.23	2.06	.039**	Significant

Note: ERM = Enterprise risk management, ***p-value < .001; p-value < .01; **p-value < .05

From this result obtained, the researcher, therefore, wanted to test whether ERM implementation mediates the relationship between work coordination and financial performance of Malaysian PHE. The meditation effects of ERM implementation in the relationship between

work coordination and financial performance of Malaysian PHE were assessed following the procedure suggested by Awang (2014; 2015) and are presented in Table 7 and Figure 2.

Table 6 - Decision criteria for mediation effect

Decision	X → M	M → Y	X → Y
	p	p	p
Full Mediation	S	S	NS
Partial Mediation	S	S	S
No Mediation	NS*	NS*	

Note: p = sig. value; S = Significant; NS = Not significant; One or both the paths is/are non-significant

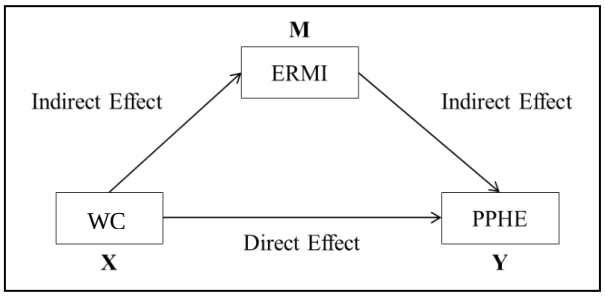

Fig. 2. Indirect and direct effect between WC, ERMI and PPHE

Type of mediation from the result of Table 7 is "partial mediation" since the direct impact of work coordination on the financial performance of Malaysian PHE and indirect effects (X → M, M → Y) are significant. Thus, the results explained that ERM implementation mediated the relationship between work coordination and financial performance of Malaysian PHE. This result met criteria of the following decision:

Table 7 - Decision criteria for work coordination

Relationship	β	*t*-value	p-value	Result	Type of Mediation
Work coordination → ERM implementation	0.14	2.18	0.030**	Significant	Partial mediation
ERM implementation → Financial performance of Malaysian PHE	0.23	2.06	0.039**	Significant	
Work coordination → Financial performance of Malaysian PHE	0.20	2.31	0.021**	Significant	

5. Discussion on the findings

This paper discusses the relationship between work coordination and ERM implementation and financial performance in Malaysian PHEs. In general, such findings support all three hypotheses: a) work coordination positively influences ERM implementation ($\beta = 0.642$, $p < 0.01$), hence confirming that work coordination enhance risk management processes; b) ERM implementation significantly improves financial performance ($\beta = 0.593$, $p < 0.01$), hence proving that ERM does assure strategic value in underpinning the mitigation of risks and optimization of resources; and c) ERM mediates the relationship between work coordination and financial performance, indirect effect (0.321, $p < 0.01$), hence, underlining the strategic enabling role played by ERM. These findings indicate that ERM significantly mediates coordination efforts and financial outcomes, providing theoretical and practical implications for Malaysian PHEs. This is consistent with the prior studies on organizational performance, the positive association suggests that coordinated work significantly reinforces ERM implementation through its collaborative governance structures (Sukoco et al., 2021; Hristov et al., 2024). This is in line with the study by Tan and Lee (2021), who identified that work coordination improve ERM adoption significantly across industries. These findings also confirm that ERM implementation enhances financial performance which was identified in previous studies by Hameed et al. (2020), Khaw et al. (2023), and Rauf, Mansor & Jabar (2021).

However, this study adds to the sophistication by articulating specific financial benefits, including increased availability of finance and efficiency of cost for Malaysian PHEs. Unlike

previous research, which has focused on corporate sectors, this study develops a contextual understanding of how ERM can respond to the particular financial challenges of PHEs, such as reliance on government funding, tuition fees and managing operational costs on digital transformation. ERM also acts as a mediator to enhance the relationship between work coordination and financial performance, as the well-coordinated effort will be transformed into an actionable risk mitigation strategy. This can be supported by Crawford and Jabbour (2023), which stated that ERM amplifies organizational capabilities by streamlining decision-making processes.

The mediating role of ERM in this study underlines the latter's capacity to operationalize the benefits of work coordination into tangible financial outcomes. In return, institutions with strong coordination frameworks will contribute to higher ERM effectiveness, thus, lead to improved financial performance such as cost efficiency and revenue stability. This result implies that ERM amplifies this effect by providing a systematic approach in risk identification, prioritization, and mitigation. For instance, coordinated teams are able to identify potential risks more comprehensively, and thereafter ERM processes ensure that those are dealt with systematically. Therefore, this mediating role is very critical in Malaysian PHEs, whose resource constraints call for judicious apportioning of effort and budget.

Hence, this study is contrast with prior studies that focused on ERM across general sectors (Horvey & Odei-Mensah, 2023; Mahama et al., 2020) or examined financial sustainability while neglecting the frameworks of risk management (Low, 2024; Otero-González, Durán-Santomil, & Marouf, 2022). Thus, this study fills the gap in knowledge by integrating work coordination and ERM specifically within the Malaysian PHEs into a comprehensive framework. This approach illustrates their influence on financial performance in Malaysian PHEs, aiming to address financial difficulties. It also extends to give practical solutions to problems faced in different sectors, thereby bridging the gap between theory and application.

6. Theoretical and Practical Implications

This study extends the theoretical understanding of ERM by broadening its application domain to higher education, particularly in Malaysia PHEs. By adapting Resource-Based View (RBV), this study indicates that effective work coordination serves as an important organizational capability that enhances the effectiveness of ERM, thus improving financial performance. The integration lays the foundation for further study on ERM in other resource-scarce sectors. In practice, for higher education they need to establish cross-departmental task forces that will enhance work coordination and integrate ERM into daily operations. They should also implement and apply predictive analytics and AI-driven platforms in enhancing the processes of risk assessment and reporting according to global best practices (Piorkowski, Hind & Richards, 2022; Xia et al., 2023). Apart from that, top management should support ERM initiative in ways that include alignment with strategic objectives and resourcing in response to the hindrances (Ahmad et al., 2016). Therefore, it is recommended that policymakers develop ERM guidelines specific for the higher education sector, drawing on best practices from existing international frameworks. These might include subsidies for developing ERM digital tool kits or conducting risk management-related training programs for leaders at higher education. These will make higher education more resilient and financially sustainable.

7. Conclusion and Future Research Directions

This study has highlighted the critical interrelationship that exists between work coordination, ERM implementation, and financial performance in Malaysian PHEs. The findings showed that effective work coordination positively influenced ERM implementation, which again significantly influenced financial performance. In addition, ERM acts as a mediator that strengthens the influence of work coordination on financial performance. These findings underpin the strategic importance of integrating ERM frameworks into the institutional governance practices in light of addressing the specific financial challenges facing Malaysian PHEs. Therefore, this study will contribute to the broad discourse of financial sustainability in higher education because it will be able to demonstrate how important ERM as a strategic

enabler. In other words, given the critical gaps in existing research, this study provide specific steps by identifying actionable strategies that Malaysian PHEs may pursue in enhancing the nexus between risk management, work coordination, and financial sustainability within higher education.

Although the findings are useful specifically for Malaysian PHEs, they also offer useful implications for similar organizations in developing economies facing budgetary pressures and resource limitations. Future research could explore how cultural, regulatory, and technological factors influence ERM adoption in other contexts. Longitudinal studies on how ERM integration affects financial performance would also be a great contribution to the literature. In conclusion, by addressing critical gaps in existing research, this study provide specific steps by identifying actionable strategies that Malaysian PHEs may pursue in enhancing the relationship between risk management, work coordination, and financial sustainability within higher education.

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