



Timeliness of management accounting information and firm performance: Evidence from Vietnamese labour-export firms (PLS-SEM)

 **Nguyen Thi Linh**^{1*}
 **Le Thi Tu Oanh**²

^{1,2}University of Labour and Social Affairs, Hanoi, Vietnam.

¹Email: linhnt@ulsa.edu.vn

²Email: oanhlethu@ulsa.edu.vn



(+ Corresponding author)

ABSTRACT

Article History

Received: 25 November 2025

Revised: 10 February 2026

Accepted: 17 April 2026

Published: 15 May 2026

Keywords

Management accounting
information
Management effectiveness
Operational efficiency
Timeliness.

The timeliness of management accounting information is considered a core characteristic reflecting the quality of the information system and serves as a foundation supporting enterprises in enhancing management effectiveness as well as optimizing operational efficiency. For labor export enterprises, the provision of timely information holds particular significance in helping managers respond to the uncertainty of the business environment and meet the requirements of international economic integration. Based on this, the study conducted a survey of 126 labor export enterprises in Vietnam and employed the PLS-SEM model to analyze the data. The overall analysis results indicate that timely management accounting information has a direct positive impact on operational efficiency, with a coefficient $\beta = 0.398$ ($t = 6.299$; $p = 0.000$), and even more strongly on management effectiveness ($\beta = 0.566$; $t = 9.659$; $p = 0.000$). The hypothesis regarding the indirect impact of timely information on operational efficiency through the mediating role of management effectiveness was also confirmed, with the coefficient $\beta = 0.455$ ($t = 7.297$; $p = 0.000$). However, this did not achieve statistical significance. The study not only adds empirical evidence on the role of timeliness in management accounting information but also offers practical recommendations to enhance the capability of providing timely information for enterprises in the specific context of the labor export industry. These findings suggest that the mediating role of management effectiveness may be context-dependent; therefore, subsequent studies should expand to different industries or business environments to verify and compare these results.

Contribution/Originality: This study is among the few works exploring the relationship between the timeliness of management accounting information, management effectiveness, and operational efficiency. The results confirm that management effectiveness plays a full mediating role in the relationship between timeliness in providing management accounting information and operational efficiency. The above findings supplement important empirical evidence along with practical management recommendations.

1. INTRODUCTION

Previous studies have indicated that the primary function of management accounting information is to support managerial needs in planning and control decision-making (Abernethy & Bouwens, 2005; Chenhall & Morris, 1986; Tiessen & Waterhouse, 1983). Similarly, Sprinkle (2003) argues that management accounting information constitutes a critical component of organizational planning and control systems; therefore, the quality of such information plays a pivotal role in supporting decisions that enhance managerial effectiveness. The purpose of this information is to assist managers in planning, decision-making, and performance evaluation (Merchant, 2006). High-quality

management accounting information provides managers with the necessary data to cope with uncertainties in their work, supports them in making appropriate decisions, and consequently improves managerial effectiveness (Moriarty, 1979). The management accounting information system can assist managers in controlling operations and reducing uncertainty, thereby enabling firms to achieve their objectives. This system is required across multiple managerial levels, including top, middle, and lower management, and serves as a guiding framework in the decision-making process to improve managerial effectiveness (Sani & Andriany, 2020). When assessing the quality of management accounting information, timeliness is a critical factor, as information must be available to managers precisely when it is needed. Beyond that point, such information loses its relevance for decision-making. If information is provided with a delay, even when highly reliable, its usefulness is significantly diminished because it cannot support decisions at the appropriate time. Conversely, ensuring that management accounting information is delivered promptly enables managers to identify problems, analyze trends, forecast risks, and thereby select optimal courses of action to enhance managerial effectiveness. Moreover, timeliness facilitates greater coordination across departments, allowing firms to be more proactive in cost control, resource allocation, and the pursuit of business opportunities. Thus, timely management accounting information should be recognized not only as a key indicator of information system quality but also as a fundamental basis for achieving superior managerial effectiveness and maximizing organizational performance in an increasingly competitive environment.

The labor export industry in Vietnam is a specific sector, requiring separate operating licenses and high charter capital. However, this is an industry with long-term development potential, creating fierce competition among enterprises. Based on the business and production operation context, this industry is greatly influenced by economic, social, and political situations domestically and globally. Regarding labor receiving markets, Vietnamese labor export enterprises face intense competition from many countries in the region, such as Indonesia and the Philippines, which are countries with many policies promoting sending workers abroad for employment. Most traditional markets, such as Japan, South Korea, and Taiwan, have tightened labor import policies, leading to labor export enterprises having to exploit new potential markets. Facing this reality, labor export enterprises need a flow of information provided in a timely manner to help managers cope with future uncertainties and the context of global economic integration, thereby enhancing management effectiveness and operational efficiency.

Previous studies have indicated that the primary function of management accounting information is to support management needs in planning and making control decisions. However, the extent to which the timeliness of that information enhances management effectiveness and thereby improves organizational operational efficiency has not yet been fully studied, especially in the context of labor export enterprises in emerging economies. This study aims to examine the impact of timeliness in providing management accounting information on management effectiveness and operational efficiency of enterprises in the context of Vietnamese labor export enterprises. With the above objective, the article answers the following three questions. Question 1: Does timeliness in providing management accounting information have a positive impact on management effectiveness at Vietnamese labor export enterprises? Question 2: Does timeliness in providing management accounting information have a positive impact on operational efficiency at Vietnamese labor export enterprises? Question 3: Does timeliness in providing management accounting information have a positive impact on the operational efficiency of labor export enterprises in Vietnam through management effectiveness as a mediating variable? Therefore, the article addresses the following contents: section 1 presents the theoretical basis, section 2 presents the research methodology, section 3 presents the research results, and section 4 presents the discussion and recommendations.

2. LITERATURE REVIEW

According to Sari and Noviana (2022), the management accounting system is an effective organizational control mechanism, providing useful information to predict potential consequences from different choices and actions. Management accounting information is used as a basis for policy formulation, evaluation, and control in

organizations. The more reliable the management accounting information is, the more effective managers' decisions become. Therefore, the quality of management accounting information holds particularly significant importance for managers. According to Chenhall and Morris (1986), the quality of management accounting information is evaluated through four aspects, including the scope of information, the timeliness of information, the aggregation of information, and the integration of information. The timeliness of management accounting information is reflected through reporting frequency and reporting speed. Frequency relates to how regularly information is provided to managers. Meanwhile, speed refers to the time period from when the need for information arises until the information is available for users to use (Chia, 1995). The timeliness of information is a prerequisite for information to always be ready when users need it, because after that point, the information will lose its meaning in decision-making. Sari and Noviana (2022) emphasized that managers need timely information to respond quickly to unusual events and implement remedial measures promptly.

Managerial effectiveness is defined as the outcomes and results generated by managers in alignment with their roles within the organization over a given period. This effectiveness can also be assessed based on the extent to which managers perform key managerial functions, including planning, investigating, coordinating, supervising, staffing, negotiating, and representing (Mahoney, Jerdee, & Carroll, 1965). Managerial effectiveness is employed as an important indicator to evaluate a manager's ability to generate revenue through the efficient and consistent utilization of organizational resources. This reflects the capacity to optimize resources in order to achieve the firm's predefined business objectives (Demerjian, Lev, & McVay, 2012). Managerial functions serve as instruments to support the implementation of a firm's strategic objectives; therefore, when these functions are effectively performed, they reflect the overall organizational performance. AniĖei and Chraif (2012) explained that managerial effectiveness is employed both as a measure of performance and as a predictor of future performance, particularly in terms of the capacity to improve it. The role of managers is crucial in achieving a firm's key milestones. Timely and effective decision-making is essential for deploying resources and capturing outcomes from emerging opportunities. Timely and effective decision-making is critically important for deploying resources and capturing outcomes from emerging opportunities (Bertrand & Schoar, 2003). Amalia, Astuty, and Sari (2019) shared a similar view, suggesting that managerial capability serves as a measure of a firm's development. In line with this perspective, Inam Bhutta, Sheikh, Munir, Naz, and Saif (2021) emphasized that in emerging markets, effective managers are those who ensure the optimal utilization of scarce resources in a challenging environment through their expertise and experience. They apply their skills and knowledge to achieve sustainable growth. Hence, managerial effectiveness is regarded as a key driver in optimizing resource utilization.

Organizational performance is a broad concept that has attracted considerable attention from researchers worldwide. According to Griffin (2003), it is an indicator reflecting a firm's ability to meet shareholder expectations and sustain its position in the market. Performance also reflects the outcomes of how effectively a company utilizes its human, financial, and physical resources. Similarly, Richard, Devinney, Yip, and Johnson (2009) contend that organizational performance is the outcome of input factors and capital, and serves as a prerequisite for a firm's survival and success in the modern business environment. Most definitions of performance emphasize financial indicators such as sales levels, sales growth, profitability, and stock price, which align with the common objective of enhancing corporate economic value. However, an increasing number of perspectives argue that non-financial indicators, such as market share position, new product introduction, product quality, and corporate social responsibility, should also be considered to broaden the conceptualization of organizational performance (Venkatraman & Ramanujam, 1986). Organizational performance is regarded as a multidimensional construct that encompasses various aspects of corporate development. Specifically, it includes: financial performance, measured by indicators such as profit, return on assets, and return on investment; product-market performance, reflected in sales and market share; shareholder return, assessed through total shareholder return and economic value added; and other internal outcomes, including

corporate social responsibility and sustainable contributions to society (Richard et al., 2009; Venkatraman & Ramanujam, 1986).

Empirical studies around the world have indicated a positive relationship between timeliness in providing management accounting information and management effectiveness. Specifically, timely management accounting information helps managers respond quickly in unexpected situations (Chia, 1995). Many works have systematized and affirmed the role of management accounting information. Chenhall and Morris (1986) and Gul (1991) conducted studies aimed at evaluating the role of environmental uncertainty on the relationship between management accounting information and operational efficiency, thereby showing that management accounting information can help managers improve management effectiveness. Building on this line of research, Irawati, Hidayat, and Putra (2018) confirmed that the timely provision of management accounting information exerts a positive and significant influence on managerial effectiveness. Similarly, Aminah (2021) also determined that the timeliness of management accounting information has a significant impact on management effectiveness. Several other studies further support this relationship. For instance, Agbejule (2005) in a survey of 11 Finnish companies across telecommunications, construction, metal, electricity, and chemical industries, obtained results consistent with those of Gordon and Narayanan (1984) and Gul (1991). In the Portuguese context, Pires and Alves (2022) examined 114 large manufacturing firms and found that the timely provision of management accounting information is highly beneficial for decision-making. Based on the synthesis of the above arguments, combined with the need for timely management accounting information at Vietnamese labor export enterprises in implementing management effectiveness, the author proposes a research hypothesis.

H₁: The timeliness of management accounting information has a positive impact on managerial effectiveness in Vietnamese labor export enterprises.

Most empirical studies around the world have indicated a positive relationship between timeliness in providing management accounting information and operational efficiency. Specifically, Chong and Chong (1997) and Mia and Winata (2014) both concluded that the use of timely management accounting information has a positive influence on the operational efficiency of manufacturing enterprises in Australia. Similarly, a study in Malaysia also showed that the quality of management accounting information, reflected in timeliness, has a significant impact on operational efficiency (Ismail, Isa, & Mia, 2018). Saleh and Al-Nimer (2022) also conducted a study and confirmed the clear impact of management accounting information on the performance of manufacturing firms in Jordan. However, some studies have reported contrasting results. The study by Dahal (2022) on 223 managers at manufacturing companies in Nepal showed that there is no relationship between management accounting information and operational efficiency. Although modern management accounting techniques are being used increasingly, information from these techniques is not significantly related to the operational efficiency of Nepalese enterprises. Despite these contradictory results, the majority of academic works support this positive relationship. Gachora, Maina, and Mburugu (2020) researched a large sample of 488 industrial companies in Kenya, and the results reinforced the positive relationship between the impact of accounting information systems provided on time and financial efficiency. Providing timely management accounting information allows enterprises to quickly receive, filter, and transmit information to users, thereby enhancing operational efficiency (Tsai, Chang, Lin, & Cheng, 2020). In particular, for products with short life cycles, timely information enables managers to capture profit opportunities and improve organizational performance. Furthermore, timely management accounting information provides managers with systematic data on market dynamics, customer demand, and competitors' activities, thereby supporting decision-making and fostering innovation (Tsai et al., 2020). Based on the synthesis of the above arguments, combined with the need for timely management accounting information at Vietnamese labor export enterprises in implementing operational efficiency, the author proposes a research hypothesis.

H₂: The timeliness of management accounting information has a positive impact on organizational performance in Vietnamese labor export enterprises.

The management accounting information system is an indispensable component in the organizational structure, playing a role in regulating and promoting performance. This system provides necessary measures, such as authorization mechanisms to communicate objectives, participation, and information feedback. The core purpose of the management accounting information system is to provide timely information to support the monitoring and evaluation of operational activities in the organization (Hall, 2008). Timely provision of management accounting information enables managers to make successful long-term economic decisions (Hoque & James, 2000). In the context of fierce competition, many studies have indicated that improving the management accounting system helps enhance the organization's capacity to generate accurate and useful information for the effective decision-making process. This has a positive impact on management effectiveness and thereby improves the overall operational efficiency of the organization (Hoque & James, 2000). Providing timely management accounting information adds value to users by supporting planning, control, and decision-making activities. This ultimately improves the overall performance of the firm (Deswanto & Siregar, 2018). In addition, this system also has the function of monitoring the effectiveness of internal processes, related activities, and the competitive capacity of the company (Pedroso & Gomes, 2020). Based on the above arguments, the author proposes the following research hypothesis.

H₃: The timeliness of management accounting information positively influences the organizational performance of Vietnamese labor export enterprises through managerial effectiveness as a mediating variable.

3. METHODOLOGY

To adjust the measurement scale to suit the characteristics of labor export enterprises in Vietnam, the author conducted in-depth interviews with experts. Interview subjects included enterprise managers, specifically directors and chief accountants. Data collected from the interviews were carefully recorded and converted into text. This information was then systematized in the form of data tables according to a thematic tree structure. Based on this database, the author performed content analysis aimed at extracting essential information, serving the process of adjusting and perfecting the measurement scale.

Building on the findings of Mahoney et al. (1965); Hall (2008); Hoque and James (2000); Kaplan and Norton (1996); Hart and Ahuja (1996); Le (2020); Chenhall and Morris (1986); Christina and Brahmana (2024) and Agbejule (2005) the results of qualitative research, the author proposes the measurement scales for the variables as presented in Table 1.

Table 1. Coded scale table.

Scale	Code	Sources
Timeliness of information	MAT	Chenhall and Morris (1986), Christina and Brahmana (2024), and Agbejule (2005) as well as insights from qualitative research
Information is provided immediately upon request.	MAT1	
Information is automatically delivered once it is recorded in the firm's information system.	MAT2	
Reports are provided regularly and systematically according to managerial requirements.	MAT3	
Information about events is reported to managers immediately as the events occur.	MAT4	
Managerial effectiveness	MP	Mahoney et al. (1965) and Hall (2008), as well as insights from qualitative research
Activities related to setting objectives, policies, and action directions.	MP1	
Activities involving information exchange within the organization to coordinate and adjust procedures, policies, and plans.	MP2	
Activities assessing actual results against plans and providing recommendations for future actions.	MP3	
Activities related to directing, leading, and developing personnel.	MP4	
Activities aimed at market expansion or signing new contracts.	MP5	

Scale	Code	Sources
Activities promoting the organization's collective interests through speeches, consultations, or interactions with external individuals or groups.	<i>MP6</i>	
Organizational performance	FP	Hoque and James (2000); Kaplan and Norton (1996); Hart and Ahuja (1996) and Le (2020), as well as insights from qualitative research
Revenue growth rate.	<i>FP1</i>	
Actual return on equity (ROE) compared to expected levels.	<i>FP2</i>	
Actual return on assets (ROA) compared to expected levels.	<i>FP3</i>	
Actual return on sales (ROS) compared to expected levels.	<i>FP4</i>	
Timely and appropriate cost reduction.	<i>FP5</i>	
Actual results of foreign market development compared to expectations.	<i>FP6</i>	
Actual results of domestic market development compared to expectations (Local regions, target labor groups, etc.).	<i>FP7</i>	
Actual evaluation results from employees participating in dispatched labor orders compared to expectations.	<i>FP8</i>	
Actual evaluation results from labor-receiving companies compared to expectations.	<i>FP9</i>	
Actual evaluation results of human resources compared to expectations.	<i>FP10</i>	

The study employs the PLS-SEM model and analyzes the data using SmartPLS 4.1.1.2 software. The research procedure includes the following steps: (i) testing the measurement model; (ii) testing the structural model; (iii) examining the direct effects of the timeliness of management accounting information on managerial effectiveness, and on organizational performance; (iv) testing the indirect effect of the timeliness of management accounting information on organizational performance through managerial effectiveness as a mediating variable; and (v) testing the total effect of the timeliness of management accounting information on organizational performance within the overall model.

Survey subjects were senior or middle-level managers (CEO, CFO, general director, heads/deputy heads of departments...) working in Vietnamese labor export enterprises with a minimum working period of 3 years at the surveyed unit. The purpose was to ensure that data collection subjects had sufficient understanding of research issues associated with enterprise practices to be able to answer the survey questionnaire thoroughly. Survey subjects were selected using the convenience sampling method from a comprehensive data framework. Survey subjects were selected through the list of labor export enterprises on the website <http://www.dolab.gov.vn> of the Department of Overseas Labor Management under the Ministry of Labor, War Invalids and Social Affairs, previously, and the Ministry of Home Affairs from March 1, 2025. Contact information of enterprises was obtained from the website <http://www.dolab.gov.vn> and <http://www.QHTVLNN.MOLISA.gov.vn>, which are continuously updated databases of the Department of Overseas Labor Management and the Fund for Supporting Overseas Employment of the Ministry of Labor, War Invalids and Social Affairs.

The study conducted data collection by sending 350 survey questionnaires to labor export enterprises in Vietnam through both direct and online forms. In total, 155 responses were collected from enterprise managers, achieving a response rate of 44.29%. For the 55.71% of survey questionnaires that were not responded to, this could be explained by the sensitive nature of the labor export industry; thus, many managers were not open to sharing internal information. After the data cleaning process, 126 valid responses were used for subsequent analyses.

Table 2 presents the market presence of the surveyed firms, 49.4% of enterprises operate in a single market, 23.5% operate in two markets, and 27.1% have expanded operations to three or more markets. In terms of ownership, the non-state sector dominates with 80.4%, while state-owned enterprises account for only 19.6%. Regarding workforce size, most enterprises employ between 10 and 50 workers (51.2%), followed by those with 51–100 workers (22.6%), over 200 workers (15.7%), and 101–200 workers (10.5%); no enterprise has fewer than 10 employees.

Concerning years of operation, 29.5% of enterprises have been operating for 3–5 years, 30% for 6–10 years, and 40.5% for more than 10 years.

Table 2. Characteristics of surveyed enterprises.

Category		Frequency	Percent
Market presence	1 Market	62	49.4
	2 Market	30	23.5
	>= 3 Market	34	27.1
Ownership	State-owned	25	19.6
	Non-state	101	80.4
Workforce size	< 10	0	0
	10 - 50	65	51.2
	51 - 100	28	22.6
	101 - 200	13	10.5
	> 200	20	15.7
Years of operation	3 - 5	37	29.5
	6 - 10	38	30
	>10	51	40.5

Table 3 presents the profile of the survey participants, indicating that they were primarily business managers. Analysis of the sample shows that 69.3% were senior managers, while 30.7% were middle-level managers. Regarding job positions, the majority of participants belonged to the Board of Directors (69.2%), followed by specialized departments: Operations Department (14%), External Affairs Department (10.1%), and Recruitment Department (6.7%). The age distribution of respondents is notable, with the 40–50 age group accounting for the largest share (45.7%). Other age groups included 30–40 years (27.6%) and over 50 years (23.2%), while those under 30 years represented a very small proportion (3.5%). Finally, in terms of tenure, most participants had 6–10 years of work experience (44.8%), which is higher than those with over 10 years of experience (30.7%) and 3–5 years of experience (24.5%).

Table 3. Demographic information of survey respondents.

Category		Frequency	Percent
Management level	Senior manager	87	69.3
	Middle-level manager	39	30.7
Job position	Board of directors	87	69.2
	External affairs department	13	10.1
	Recruitment department	8	6.7
	Operations department	18	14
	Other	0	0
Age	Under 30 years old	4	3.5
	30–40 years old	35	27.6
	40–50 years old	58	45.7
	Over 50 years old	29	23.2
Tenure in the company	3 - 5	31	24.5
	6 - 10	56	44.8
	> 10	39	30.7

4. RESEARCH RESULTS

4.1. Measurement Model Evaluation Results

The reliability analysis of the measurement scales, presented in Table 4 and obtained using SmartPLS 4, indicates a high level of data consistency. Specifically, Cronbach's Alpha (CA) coefficients range from 0.833 to 0.922, while Composite Reliability (CR) coefficients range from 0.888 to 0.943. According to Hair et al. (2019), CA and CR values above 0.70 are considered acceptable. These values reflect the internal consistency of the observed variables within

each construct. In this study, all constructs significantly exceed these minimum thresholds, confirming that the measurement scales exhibit good reliability. Consequently, these results provide a solid foundation for subsequent steps in the measurement model analysis, including the assessment of convergent validity and discriminant validity.

Table 4. Reliability assessment results of the measurement scales.

Scale	CA	CR
FP	0.932	0.943
MAT	0.833	0.888
MP	0.904	0.926

Table 5 shows the results regarding convergent validity; all observed variables met the criteria for outer loadings. Specifically, the MAT scale had loading coefficients of observed variables ranging from 0.749 to 0.874, showing the strong contribution of each variable to measuring this concept. Similarly, the MP scale with variables having loading coefficients from 0.717 to 0.896 and the FP scale with variables having loading coefficients from 0.715 to 0.846 all exceeded the standard threshold of 0.7 proposed by Hair et al. (2019). This demonstrates that each observed variable effectively measures the concept it represents. In addition, the average variance extracted (AVE) of the scales was respectively 0.666 (MAT), 0.679 (MP), and 0.615 (FP), all greater than the threshold of 0.5. According to Fornell and Bookstein (1982), this confirms the convergent validity of the scales.

Table 5. Results of convergent validity evaluation.

Scale	Items	Loadings	AVE
MAT	MAT1	0.797	0.666
	MAT2	0.840	
	MAT3	0.749	
	MAT4	0.874	
MP	MP1	0.854	0.679
	MP2	0.897	
	MP3	0.863	
	MP4	0.855	
	MP5	0.741	
	MP6	0.717	
FP	FP1	0.780	0.615
	FP2	0.785	
	FP3	0.717	
	FP4	0.846	
	FP5	0.715	
	FP6	0.830	
	FP7	0.826	
	FP8	0.775	
	FP9	0.771	
	FP10	0.788	

Fornell–Larcker and HTMT were used to assess the discriminant validity of the scale. Table 6 shows that the square root of the extracted variance ($\sqrt{\text{AVE}}$) for each research concept exceeded the highest correlation value between that concept and other concepts. Specifically, the $\sqrt{\text{AVE}}$ values for FP, MAT, and MP were 0.784, 0.816, and 0.824, respectively, higher than their corresponding highest correlation coefficients (0.768, 0.566, and 0.393). This confirms that the scales meet the discriminant validity requirements according to Fornell and Bookstein (1982). In addition to this result, Table 7 shows the HTMT coefficients between pairs of variables were all smaller than the recommended threshold of 0.85, except for the FP–MP pair which had a value of 0.828, although close to the threshold, it was still within the acceptable limits as recommended by Henseler, Ringle, and Sarstedt (2015) and Hair et al. (2019). Therefore, it can be affirmed that the scale in the study ensures discriminant validity.

Table 6. Fornell–Larcker discriminant validity results.

Variables	FP	MAT	MP
FP	0.784		
MAT	0.393	0.816	
MP	0.768	0.566	0.824

Table 7. Results of discriminant validity (HTMT ratio).

Variables	FP	MAT	MP
FP			
MAT	0.434		
MP	0.828	0.647	

4.2. Structural Model Assessment Results

Table 8 presents the results of multicollinearity assessment using Variance Intensity Factor (VIF), showing that most observed indices have VIF values below the threshold of 5, which is within the acceptable range recommended by Hair et al. (2019). Some indicators within the FP and MP constructs exhibit VIF values ranging from 3 to just below 5, reflecting a moderate correlation among the indicators, but not exceeding the critical warning threshold. Notably, the FP4 indicator has a VIF of 5.382, slightly above the recommended threshold of 5. However, this value remains close to the limit and does not exceed 10, the threshold at which many previous studies Neter, Kutner, Nachtsheim, and Wasserman (1996) consider multicollinearity to be severe.

From a content perspective, FP4 represents a critical aspect within the conceptual structure of the latent FP construct. Removing this indicator could compromise the comprehensiveness and reliability of the construct, resulting in a loss of theoretical information. Moreover, the FP construct has already demonstrated convergent and discriminant validity in prior assessments, indicating that the overall validity of the measurement scale is not substantially affected by the presence of FP4. Therefore, although FP4 exhibits a VIF slightly above the threshold of 5, considering both statistical and theoretical perspectives, this indicator is retained in the model to ensure the completeness and conceptual integrity of the FP measurement scale.

Table 8. Variance inflation factor (VIF).

Scale	VIF	Scale	VIF
FP1	3.606	MAT1	1.981
FP2	2.893	MAT2	2.809
FP3	2.347	MAT3	1.864
FP4	5.382	MAT4	3.099
FP5	1.918	MP1	3.821
FP6	4.092	MP2	3.829
FP7	4.789	MP3	3.191
FP8	3.934	MP4	2.932
FP9	3.754	MP5	2.328
FP10	4.506	MP6	1.727

4.3. Assessment of Adjusted R^2 and Predictive Relevance of the Model

Table 9 shows that the coefficient of determination of the FP variable reached $R^2 = 0.601$, with adjusted $R^2 = 0.591$. The results indicated that approximately 59.1% of the variation in FP was explained by the independent variables in the model, reflecting a relatively high level of explanation according to Hair et al. (2019). For the MP variable, the R^2 value reached 0.321 and adjusted $R^2 = 0.315$, showing that the explanatory variables accounted for approximately 31.5% of the variation in MP. Thus, the research model achieved significant explanatory power between the independent variables and dependent variables, and demonstrated the stability and suitability of the model.

Table 9. Adjusted coefficient of determination.

Variables	R-square	R-square adjusted
FP	0.601	0.591
MP	0.321	0.315

Analysis results of direct relationships in the structural model (Figure 1) showed differences between variables. Specifically, MAT had a strong positive impact on MP with $\beta = 0.566$, $t = 9.659$ ($p < 0.001$), and MP played a decisive role on FP with $\beta = 0.804$. However, a notable finding was that the direct impact from MAT to FP had no statistical significance ($\beta = -0.062$; $p = 0.321 > 0.05$). This suggests that, in the context of Vietnamese labor export enterprises, timely management accounting information itself, if not utilized through effective management decisions, cannot directly create improvements in operational efficiency.

Contrary to the results of direct path coefficients, the overall impact table (Table 10) provided a more comprehensive view of the relationship between these variables. The total impact of MAT on FP reached a significantly positive value ($\beta = 0.398$; $t = 6.299$; $P = 0.000$), showing that the timely information system contributed nearly 40% to the improvement of the overall operational efficiency of labor export enterprises. The substantial increase of this coefficient compared to the direct impact was precisely the result of the indirect path through the mediating variable MP (MAT $\rightarrow$ MP $\rightarrow$ FP) with a coefficient reaching 0.455 ($t = 7.297$; $P = 0.000$).

Table 10. Results of hypothesis testing indirect effects and moderating effects.

Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
MAT $\rightarrow$ FP	0.398	0.403	0.063	6.299	0.000
MAT $\rightarrow$ MP	0.566	0.573	0.059	9.659	0.000
MP $\rightarrow$ FP	0.783	0.782	0.068	11.411	0.000
MAT $\rightarrow$ MP $\rightarrow$ FP	0.455	0.462	0.062	7.297	0.000

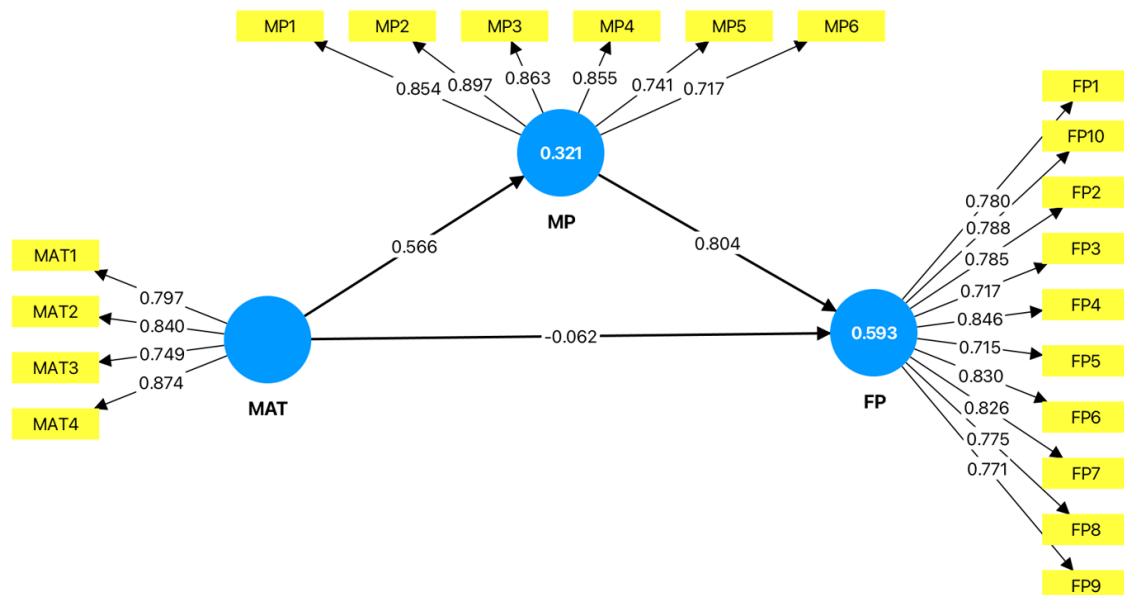
**Figure 1.** Partial least squares (PLS) algorithm result.

Table 11 presents the conclusions regarding the research hypotheses. Thus, the research model confirmed the full mediating role of MP. The hypothesis about the positive impact of MAT and MP was accepted with statistical significance at the absolute level. Although the direct impact of MAT on FP had no statistical significance, through the mediating role of MP, this impact carried positive directional significance.

Table 11. Conclusion of the research hypotheses.

Hypothesis	Content	Conclusion
H1	The timeliness of management accounting information provision has a positive impact on managerial effectiveness in Vietnamese labor export enterprises.	Accepted
H2	The timeliness of management accounting information provision has a positive impact on organizational performance in Vietnamese labor export enterprises.	Accepted through the full mediating role of management effectiveness
H3	The timeliness of management accounting information provision has a positive impact on organizational performance in Vietnamese labor export enterprises through managerial effectiveness as a mediating variable.	Accepted

5. CONCLUSION

Research results from 126 Vietnamese labor export enterprises, analyzed using SmartPLS 4.1.1.2 software, supported 3 hypotheses with the full mediating role of management effectiveness.

Firstly, Hypothesis H1 is supported. The results indicate that the timeliness of management accounting information provision has a positive impact on managerial effectiveness in Vietnamese labor export enterprises. This suggests that when management accounting information is provided promptly, managers have the necessary information to clearly identify objectives, policies, and courses of action; to compare actual figures with planned targets and adjust operations accordingly; and to develop human resources effectively, thereby enhancing overall managerial performance... This has significant practical implications in the context of the labor export industry, which is strongly influenced by external factors such as fluctuations in the international labor market, the labor import policies of partner countries, and changes in domestic legal regulations. For these enterprises, the provision of timely management accounting information enables managers to promptly grasp market changes (e.g., expanding or contracting labor-receiving markets), adjust operational plans (e.g., shifting domestic labor recruitment markets), and allocate resources effectively (e.g., human resource development). Therefore, the timeliness of information not only helps enterprises minimize operational risks but also enhances their competitive capacity, ensuring that management activities are directed toward optimizing efficiency and achieving sustainable development. These findings are consistent with previous studies. Chenhall and Morris (1986) demonstrated that timeliness is one of the four key attributes of management accounting information that supports more effective managerial decision-making. Gul (1991) and Chong (1998). Their study also indicated that managerial effectiveness improves when management accounting information is provided in a timely manner, particularly in volatile business environments that require rapid responses.

Second, hypothesis H2 was accepted with the full mediating role of management effectiveness. Research results indicated that timeliness in providing management accounting information has a positive impact on operational efficiency at Vietnamese labor export enterprises when evaluated in the overall relationship of the study. This shows that when management accounting information is provided on time, managers use this information effectively, leading to enhanced operational efficiency of the enterprise through the increase of growth indicators such as revenue growth, ROE, ROA, ROS, and cost reduction. In the context where the labor export industry is strongly influenced by fluctuations in international labor supply and demand, changes in legal policies, and increasing competition levels, having timely information helps enterprises respond flexibly, maintain stability in operations, and achieve higher operational efficiency, such as the growth rate of financial indicators (revenue, ROA...); the growth of non-financial indicators (expansion of labor receiving markets, increased partner satisfaction level...). This result is consistent with previous studies. Hall (2008) also affirmed that enhancing the timeliness characteristic in management information has a positive relationship with operational efficiency, especially in contexts with high levels of uncertainty and

competition. Gachora et al. (2020) and Tsai et al. (2020) shared research results when stating that timely information helps managers seize profitable opportunities and improve operational efficiency.

Third, hypothesis H3 was accepted, timeliness in providing management accounting information has a positive and same-direction impact on the operational efficiency of labor export enterprises in Vietnam through management effectiveness as a mediating variable. The results confirm the full mediating role of management effectiveness in the relationship between the timeliness of management accounting information and the operational efficiency of enterprises. At the same time, the results also reflect the specificity of the labor export industry; in this context, timely information about markets, costs, competitors... does not directly increase operational efficiency or competitive position, but this information plays the role of a foundational database for managers to perform their management functions well, thereby indirectly promoting operational efficiency. This result is consistent with previous studies. Hall (2008) demonstrated that providing and utilizing quality management information, including the timeliness factor, not only has a direct impact on operational results but also influences them indirectly by enhancing the organization's management capabilities, such as its ability to learn, monitor, and make informed decisions. In addition, studies by Gul (1991) and Chong (1998) also confirmed that operational efficiency tends to be significantly improved when a relationship exists between management information and appropriate management mechanisms, thereby emphasizing the mediating role of management effectiveness in this relationship.

The study conducted at Vietnamese labor export enterprises has provided important empirical evidence regarding the role of timeliness in management accounting information. The findings demonstrate that timeliness has a direct and positive impact on both management effectiveness and operational performance, underscoring how the provision of fast, timely, and relevant information can support managers in planning, decision-making, and enhancing the enterprise's operational outcomes. Simultaneously, the hypothesis concerning the mediating role of management effectiveness receives strong support, indicating that the impact of timeliness on operational performance occurs through both direct and indirect mechanisms. This finding reflects the specific nature of the labor export industry, where operational results are heavily influenced by external factors such as international labor market volatilities, changes in legal policies, and global competitive pressures. Based on these research findings, several recommendations can be offered. Labor export enterprises should prioritize investment in modern management accounting systems to ensure their capability to deliver timely information, while also emphasizing the enhancement of analytical capacity and information utilization among their management teams. Additionally, enterprises need to integrate management accounting data with close monitoring of external environmental factors so they can make appropriate and timely strategic decisions.

6. LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Although this study plays a significant role in highlighting the mediating role of management effectiveness in the relationship between timely management accounting information and operational performance, several limitations still exist.

First, the mediating role of management effectiveness may be context-dependent. This study was conducted in the context of Vietnamese labor export enterprises, so future studies could expand to different industries or environments to verify and compare the findings.

Second, timeliness is just one of many characteristics of management accounting information. Future research could assess the impact of other management accounting information characteristics, such as aggregation, on management effectiveness and operational performance in enterprises.

Third, the impact of management accounting information on operational performance may be subject to mediating effects or moderating effects from various other variables, such as the level of market risk and managerial characteristics. Therefore, future research could further enrich this relationship by examining these mediating and moderating effects.

Funding: This study received no specific financial support.

Institutional Review Board Statement: The study involved minimal risk and adhered to ethical guidelines for social science fieldwork. Formal approval from an Institutional Review Board was not required under the policies of University of Labor and Social Affairs, Vietnam. Informed verbal consent was obtained from all participants, and all data were anonymized to ensure participant confidentiality.

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

Disclosure of AI Use: The author used OpenAI's ChatGPT (GPT-4) to edit and refine the wording of the Introduction and Literature Review. All outputs were thoroughly reviewed and verified by the author.

REFERENCES

- Abernethy, M. A., & Bouwens, J. (2005). Determinants of accounting innovation implementation. *Abacus*, 41(3), 217-240. <https://doi.org/10.1111/j.1467-6281.2005.00180.x>
- Agbejule, A. (2005). The relationship between management accounting systems and perceived environmental uncertainty on managerial performance: A research note. *Accounting and Business Research*, 35(4), 295-305. <https://doi.org/10.1080/00014788.2005.9729996>
- Amalia, K., Astuty, W., & Sari, E. N. (2019). *The influence characteristics of management accounting information system on managerial performance in stars hotels in medan City*. Paper presented at the Multi-Disciplinary International Conference University of Asahan.
- Aminah, S. (2021). *The influence of broad scope, Timelines, aggregation, integration, and decentralization on managerial performance at PT. Tasma Puja*. Pekanbaru City: Sultan Syarif Kasim State Islamic University of Riau.
- AniĖei, M., & Chraif, M. (2012). *A model for the core competences validation using behavioral anchored rated scales within the Romanian Agency for Employment as a changing organization*. Paper presented at the International Conference on Humanity, History and Society (ICHHS 2012), Bangkok, Thailand, Apr. 2012, International Proceedings of Economics Development and Research (IPEDR).
- Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics*, 118(4), 1169-1208. <https://doi.org/10.1162/003355303322552775>
- Chenhall, R. H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *The Accounting Review*, 61(1), 16-35. <https://doi.org/10.2308/TAR-4490476>
- Chia, Y. M. (1995). Decentralization, management accounting system (MAS) information characteristics and their interaction effects on managerial performance: A Singapore study. *Journal of Business Finance & Accounting*, 22(6), 811-830. <https://doi.org/10.1111/j.1468-5957.1995.tb00390.x>
- Chong, V. K. (1998). Testing the contingency «fit» between management accounting systems and managerial performance: A research note on the moderating role of tolerance for ambiguity. *The British Accounting Review*, 30(4), 331-342. <https://doi.org/10.1006/bare.1998.0073>
- Chong, V. K., & Chong, K. M. (1997). Strategic choices, environmental uncertainty and SBU performance: A note on the intervening role of management accounting systems. *Accounting and Business Research*, 27(4), 268-276. <https://doi.org/10.1080/00014788.1997.9729553>
- Christina, V., & Brahmana, S. S. (2024). The usefulness of management accounting information system characteristics according to the perception of users. *Jurnal Ekuilnomi*, 6(2), 340-347. <https://doi.org/10.36985/36bn4w30>
- Dahal, R. K. (2022). Management accounting practices and organizational performance. *Problems and Perspectives in Management*, 20(2), 33-43. [https://doi.org/10.21511/ppm.20\(2\).2022.04](https://doi.org/10.21511/ppm.20(2).2022.04)
- Demerjian, P., Lev, B., & McVay, S. (2012). Quantifying managerial ability: A new measure and validity tests. *Management Science*, 58(7), 1229-1248. <https://doi.org/10.1287/mnsc.1110.1487>

- Deswanto, R. B., & Siregar, S. V. (2018). The associations between environmental disclosures with financial performance, environmental performance, and firm value. *Social Responsibility Journal*, 14(1), 180-193. <https://doi.org/10.1108/SRJ-01-2017-0005>
- Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, 19(4), 440-452. <https://doi.org/10.1177/002224378201900406>
- Gachora, W. S., Maina, K. J., & Mburugu, K. N. (2020). The Influence of value innovation strategy on the financial performance of manufacturing firms in Kenya. *The Journal of Social Sciences Research*, 6(12), 995-1000. <https://doi.org/10.32861/jssr.612.995.1000>
- Gordon, L. A., & Narayanan, V. K. (1984). Management accounting systems, perceived environmental uncertainty and organization structure: An empirical investigation. *Accounting, Organizations and Society*, 9(1), 33-47. [https://doi.org/10.1016/0361-3682\(84\)90028-X](https://doi.org/10.1016/0361-3682(84)90028-X)
- Griffin, M. (2003). Organizational performance model. *Journal of Business and Management*, 10(4), 45-67.
- Gul, F. A. (1991). The effects of management accounting systems and environmental uncertainty on small business managers' performance. *Accounting and Business Research*, 22(85), 57-61. <https://doi.org/10.1080/00014788.1991.9729418>
- Hair, J. J. F., Hult, M. G. T., Ringle, M. C., Sarstedt, M., Castillo, A. J., Cepeda, C. G. A., & Roldán, J. L. (2019). *Manual de partial least squares structural equation modeling (PLS-SEM)*. Spain: OmniaScience.
- Hall, M. (2008). The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial performance. *Accounting, Organizations and Society*, 33(2-3), 141-163. <https://doi.org/10.1016/j.aos.2007.02.004>
- Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business strategy and the Environment*, 5(1), 30-37.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115-135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hoque, Z., & James, W. (2000). Linking balanced scorecard measures to size and market factors: Impact on organizational performance. *Journal of Management Accounting Research*, 12(1), 1-17. <https://doi.org/10.2308/jmar.2000.12.1.1>
- Inam Bhutta, A., Sheikh, M. F., Munir, A., Naz, A., & Saif, I. (2021). Managerial ability and firm performance: Evidence from an emerging market. *Cogent Business & Management*, 8(1), 1879449. <https://doi.org/10.1080/23311975.2021.1879449>
- Irawati, L., Hidayat, R., & Putra, M. A. (2018). The influence of timely management accounting information on managerial effectiveness. *Journal of Business and Management Studies*, 14(3), 250-262.
- Ismail, K., Isa, C. R., & Mia, L. (2018). Evidence on the usefulness of management accounting systems in integrated manufacturing environment. *Pacific Accounting Review*, 30(1), 2-19. <https://doi.org/10.1108/PAR-04-2015-0010>
- Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, 74(1), 75-85.
- Le, M. H. (2020). The relationship of competition, strategy, management accounting information and business performance. *Journal of Business Research*, 45(2), 78-92.
- Mahoney, T. A., Jerdee, T. H., & Carroll, S. J. (1965). The job(s) of management. *Industrial Relations*, 4(2), 97-110.
- Merchant, K. A. (2006). Measuring general managers' performances: Market, accounting and combination-of-measures systems. *Accounting, Auditing & Accountability Journal*, 19(6), 893-917. <https://doi.org/10.1108/09513570610709917>
- Mia, L., & Winata, L. (2014). Manufacturing strategy and organisational performance: The role of competition and MAS information. *Journal of Accounting & Organizational Change*, 10(1), 83-115. <https://doi.org/10.1108/JAOC-10-2011-0048>
- Moriarty, S. (1979). Communicating financial information through multidimensional graphics. *Journal of Accounting Research*, 17(1), 205-224. <https://doi.org/10.2307/2490314>
- Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. (1996). *Applied linear statistical models* (4th ed.). United States: McGraw-Hill.

- Pedroso, E., & Gomes, C. F. (2020). The effectiveness of management accounting systems in SMEs: A multidimensional measurement approach. *Journal of Applied Accounting Research*, 21(3), 497-515. <https://doi.org/10.1108/JAAR-05-2018-0059>
- Pires, R., & Alves, M.-C. G. (2022). The impact of environmental uncertainty on accounting information relevance and performance: A contingency approach. *Economies*, 10(9), 211. <https://doi.org/10.3390/economies10090211>
- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management*, 35(3), 718-804. <https://doi.org/10.1177/0149206308330560>
- Saleh, Q. Y., & Al-Nimer, M. B. (2022). The mediating role of the management accounting information system in the relationship between innovation strategy and financial performance in the Jordanian industrial companies. *Cogent Business & Management*, 9(1), 2135206. <https://doi.org/10.1080/23311975.2022.2135206>
- Sani, C., & Andriany, Y. (2020). The influence of management accounting information systems, human capital and environmental uncertainty on managerial performance: A case study on employees in the financial management sector of PT. *Pareso Jurnal*, 2(4), 269-290.
- Sari, I. P., & Noviana, M. (2022). The effect of characteristics of management accounting system information (broadscope, timeliness, aggregation, and integration) and decentralization of managerial performance. *Jurnal Aplikasi Manajemen*, 20(4), 902-910. <https://doi.org/10.21776/ub.jam.2022.020.04.12>
- Sprinkle, G. B. (2003). Perspectives on experimental research in managerial accounting. *Accounting, Organizations and Society*, 28(2-3), 287-318. [https://doi.org/10.1016/S0361-3682\(01\)00058-7](https://doi.org/10.1016/S0361-3682(01)00058-7)
- Tiessen, P., & Waterhouse, J. H. (1983). Towards a descriptive theory of management accounting. *Accounting, Organizations and Society*, 8(2-3), 251-267. [https://doi.org/10.1016/0361-3682\(83\)90033-8](https://doi.org/10.1016/0361-3682(83)90033-8)
- Tsai, M.-H., Chang, J.-H., Lin, Y.-S., & Cheng, K.-C. (2020). The impact of product innovation on performance: The influence of uncertainty and managerial accounting information systems. *Journal of Business Research*, 118, 297-306.
- Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: A comparison of approaches. *The Academy of Management Review*, 11(4), 801-814. <https://doi.org/10.5465/amr.1986.4283976>