DOI: 10.55643/fcaptp.1.60.2025.4643

EXAMINING FACTORS INFLUENCING LEAN ACCOUNTING IMPLEMENTATION AND ITS IMPACT ON OPERATIONAL PERFORMANCE: EVIDENCE FROM VIETNAM

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ABSTRACT

This study seeks to answer the question of what factors affect lean accounting implementation and its impact on performance in Vietnamese enterprises. The aim of the study is to examine how organizational, management and cultural factors influence the adoption of lean accounting in Vietnam and assess its role in improving operational efficiency. Using a quantitative approach, the study collected data on 332 respondents from 126 enterprises across a variety of industries, mostly manufacturing enterprises (69%) through a structured survey. Statistical techniques, including hypothesis testing with Structural Equation Modelling (PLS-SEM), show that management support, workforce competence, organizational size, and cultural factors have a positive influence on lean accounting adoption. Meanwhile, the study did not find a statistically significant impact of the current accounting system on the application of lean accounting in enterprises in Vietnam. The study also confirms the positive relationship between lean accounting implementation and operational performance, which implies that enterprises can improve their operational efficiency through the implementation and application of lean accounting. In addition, these findings are significant because they provide the first comprehensive empirical evidence from the Vietnamese context, providing valuable insights for both practitioners and researchers. The results suggest that Vietnamese enterprises should prioritize workforce development and support from managers while considering organizational size and cultural factors in their implementation strategies. This study contributes to the understanding of lean accounting implementation in developing economies and provides practical recommendations for successful adoption.

Keywords: lean accounting, operational performance, management support, vietnamese enterprises

JEL Classification: M41, L25, L60

Received: 19/11/2024
Accepted: 11/02/2025
Published: 28/02/2025

INTRODUCTION

Fierce competition due to globalization has forced businesses to look for more efficient production models. Traditional production models that rely on sales forecasts for production planning have proven to be unsuitable due to problems such as overproduction and excessive inventory at all three stages: storage, production, and consumption. To address these limitations, Toyota introduced a new production management model that later evolved into lean manufacturing. This marked the beginning of adopting a lean philosophy in organizations. Lean manufacturing is quickly demonstrating its advantages, including reduced costs, optimized resources, shortened production time and service delivery, and fewer defective products (Hung, 2024). Over time, the lean philosophy has expanded beyond manufacturing activities and can be applied to all areas of business, it is no longer limited to manufacturing enterprises but can be deployed across many different types of organizations. This development reaches a new level – lean governance, a more comprehensive application of lean principles. With the adoption of lean governance, managers' information needs are also changing, they need information on inefficiencies, such as identifying wasteful activities to be eliminated and tracking the cost savings derived from lean improvements. Therefore, the maintenance of traditional accounting systems has become inconsistent with the lean philosophy because they fail

to meet the new information needs that have the potential to reduce the effectiveness of lean management. Stemming from this need, a new accounting system was born - lean accounting.

Lean accounting has been acknowledged in many countries, especially in industries that have adopted lean manufacturing, such as automotive, electronics, and aerospace (Hines et al., 2004). In the contemporary global business landscape, lean accounting has become an important tool for organizations striving to optimize their financial and operational processes. As an extension of lean management principles, lean accounting aims to align financial activities with lean operational objectives, such as reducing waste, streamlining processes, and facilitating decision-making through simplified financial reporting. Unlike traditional accounting systems that often rely on complex cost allocation and detailed reporting, lean accounting focuses on value stream costing, visual management tools such as box score reporting, and the removal of non-value-added activities from financial processes (Maskell & Baggaley, 2006). Its core objective is to provide timely and relevant information to directly support lean initiatives, waste reduction and effective decision-making across the entire value chain (Cooper & Kaplan, 1988; Kennedy & Widener, 2008).

In developed economies such as the United States and Japan, where lean governance principles are rooted, lean accounting has proven to be an effective tool for successfully linking activities to financial results (Fullerton et al., 2014). However, while lean accounting has been widely studied and applied in these advanced economies, its implementation in developing countries including Vietnam has not been fully exploited. According to Ngo Thi Hai Chau (2024), the application of lean accounting in enterprises in Vietnam is initially only done in multinational corporations, such as electronics corporations (Samsung, LG), automobiles (Toyota, Honda) and apparel have started to integrate lean accounting to complement their lean production systems. Remaining, most of the dominant domestic enterprises in the Vietnamese economy have not yet adopted lean accounting. These enterprises often rely on traditional accounting systems that focus on tax compliance and basic financial reporting, with little emphasis on operational improvement or value flow analysis. Domestic enterprises often organize their accounting apparatus according to a combination model of financial accounting and management accounting; classify costs according to items, not yet classified according to other methods, which greatly affects the analysis for business decision-making. In addition, enterprises in Vietnam have developed cost norms to help managers control costs incurred. However, the construction of new norms only stops at the determination of technical norms in order to calculate the cost of norms in some specific cases such as making decisions to receive orders. In addition, the norm system is used by enterprises as a standard to stimulate workers to save costs. In particular, new enterprises have built norms of direct raw material costs and direct labour costs, general production costs without norms. Cost reports have also been made, usually production and business cost reports according to cost factors, raw material cost reports according to production workshops, production and business cost reports according to items, detailed reports on product costs. Managers, through reports on the use of raw materials, can know which production workshops have saved or wasted raw material costs on the basis of comparing actual consumption data with norms. Business decision-making remains largely based on the experience of managers with little use for the information provided by management accounting. The above situation shows that most enterprises in Vietnam are still applying traditional management accounting and currently, there are no mandatory regulations, and no guidance documents on the application of lean accounting in enterprises.

Much of the existing research has focused on lean accounting in manufacturing enterprises and developed economies, where lean principles have been widely integrated into management and operations. This leaves a gap in understanding how lean accounting is applied in developing countries, where firms face their own challenges such as limited resources, different management environments, and a culture of resistance to change (Fullerton et al., 2014; Kennedy & Widener, 2008). Furthermore, while some research has explored the technical aspects of lean accounting, such as the implementation of value stream costing and simplified reporting, the organizational and cultural factors that influence adoption are of less interest. For example, empirical studies examining the role of management support, workforce capacity, and organizational culture in facilitating or impeding the transition to lean accounting remain scarce. Current studies emphasize the importance of employee management commitment and training but there is little evidence of how these factors interact with current accounting systems and cultural contexts in organizations to improve performance (Bortolotti et al., 2015; Ahmad et al., 2016).

Therefore, this study was conducted to consider the factors affecting the implementation of lean accounting and its role in improving operational efficiency in enterprises in Vietnam.

LITERATURE REVIEW

Background Theories

Contingency Theory

Situational theory holds that there is no one-size-fits-all or "one-size-fits-all" approach to organizational management, decision-making, or accounting systems. Instead, the effectiveness of a management or accounting activity depends on the specific context and environment in which the organization operates. This theory, first introduced by Lawrence & Lorsch (1967) emphasizes that organizations must adapt their structures, processes, and systems to reflect the complexity, uncertainty, and dynamics of their external and internal environments. In other words, the optimal way to manage or run an organization depends on many factors that can vary significantly between different organizations and industries (Islam & Hu, 2012).

The core idea of situational theory is that an organization's effectiveness is not determined by the application of a particular system or practice but by how well that system or practice fits into the organization's specific circumstances. For example, enterprises operating in a stable environment may require different accounting practices than those operating in a dynamic or highly competitive environment. The same applies to organizational size, area of activity, culture, and leadership, all of which affect how a company organizes its management and accounting systems to achieve optimal performance.

In the context of accounting systems, situational theory holds that no single accounting method, including lean accounting, can be effective for all organizations. Instead, the success of lean accounting depends on how well it aligns with the firm's specific external needs, resources, and pressures. This theory goes against the notion that lean accounting can be implemented in a uniform way across all enterprises and emphasizes the importance of adapting accounting systems to suit the unique characteristics of each organization (McVay et al., 2013). There are a number of factors that play an important role in promoting the adoption of lean accounting, these factors include organizational size, management support, workforce competence, and organizational culture all of which can vary greatly between enterprises, especially in a developing economy like Vietnam. Each of these factors should be considered when evaluating whether lean accounting is a suitable and effective system for a particular company.

Diffusion of Innovation (DOI) Theory

Innovation diffusion theory, first proposed by Everett Rogers in 1962, provides a comprehensive framework for understanding how new ideas, technologies, and practices spread within and between organizations. This theory is particularly useful in explaining the processes by which innovations are communicated, adopted, and implemented over time. Rogers (1962) defines diffusion as the process by which an innovation is communicated through certain channels over time between members of a social system. The core of DOI theory lies in understanding the factors that influence the rate of adoption of an innovation, as well as the characteristics of the adopters and the social systems in which diffusion takes place (Murray, 2009).

The theory of innovation diffusion helps explain why some firms adopt lean accounting early, while others oppose or delay adoption. In this study, DOI theory is used to explore what factors facilitate or hinder the adoption of lean accounting and how firms in Vietnam perceive the benefits and challenges of this innovation. For example, enterprises that consider lean accounting to have a relative advantage over traditional accounting systems, such as better cost control and lean manufacturing fit, are more likely to adopt it more quickly. Similarly, enterprises that find lean accounting compatible with their current accounting systems, culture, and practices are more likely to experience fewer barriers to implementation and vice versa.

Resource-Based View (RBV)

The firm's resource-based view is a foundational theory in strategic management, which states that organizations gain and maintain competitive advantage by leveraging their own resources and capabilities. According to Barney (1991), resources are the main driving force that sets enterprises apart and allows them to outperform their competitors. These resources can be classified into two main categories: tangible resources (such as financial capital, physical assets, and technology) and intangible resources (such as employees' skills, knowledge, organizational culture, and brand reputation). RBV argues that enterprises gain a sustainable competitive advantage when they possess valuable, rare, inimitable, and irreplaceable resources.

Barney (1991) argues that firms that effectively manage and exploit their resources by linking them to their strategic objectives are more likely to achieve superior performance. This theory shifts the focus from external market conditions to internal organizational strengths, emphasizing that the structure of resources and competencies within a firm creates

DOI: 10.55643/fcaptp.1.60.2025.4643

the potential for long-term success. The RBV framework is particularly useful for understanding how internal factors, such as workforce skills and technology infrastructure affect a company's ability to innovate and adapt to changing market conditions.

In the context of lean accounting, RBV provides a valuable perspective to analyze how the company's internal resources such as the current accounting system, employee skills and knowledge, and management commitment impact the ability to successfully implement and apply lean accounting practices. Lean accounting, as an initiative, requires not only the application of new processes and principles but also the effective use of internal resources to support this transition.

Socio-Technical Systems (STS) Theory

Socio-Technical Systems theory is a conceptual framework that posits organizations as complex systems composed of two interconnected subsystems: the social system (which includes people, organizational culture, and social structures) and the technical system (which consists of tools, technologies, processes, and infrastructure). The theory, first introduced by Trist & Bamforth (1951), suggests that the successful operation of an organization depends on the harmonious alignment between these two subsystems. STS theory emphasizes that technological innovations or changes in work processes cannot be implemented in isolation from the people and social systems that interact with them. Instead, both the social and technical dimensions must be mutually supportive to achieve organizational goals effectively.

STS theory arose from studies of work environments, particularly in the context of industrial settings, where the introduction of new technologies was often associated with changes in work processes. The theory highlighted that when organizations introduced new technical systems without considering their impact on the workforce or social structures, the outcomes were often suboptimal. This is because the human element - how people interact with technology, how jobs are redesigned, and how teams are structured - plays a critical role in determining whether a new technology will be successful. Trist & Bamforth (1951) found that when the social and technical systems were aligned, organizations experienced higher productivity, improved employee satisfaction, and better overall performance.

STS theory is particularly relevant in situations where organizations are adopting new technologies or innovations, such as lean accounting systems. Lean accounting represents not just a shift in accounting practices but also a transformation in how financial information is processed, reported, and used to support decision-making. This transformation involves both technical changes (e.g., new software, accounting systems, reporting tools) and social changes (e.g., employee skills, roles, and responsibilities). According to STS theory, the success of lean accounting depends on organizations' ability to align these social and technical elements, ensuring that employees are adequately trained, management is supportive, and the technology is compatible with the organization's overall goals.

Experimental study

The size of the company has an impact on the application of lean accounting

Shah & Ward (2003) conducted an extensive survey of 1,757 manufacturing plants and showed a significant positive correlation between plant size and the adoption of lean practices, including accounting systems. Large factories have demonstrated a remarkable willingness to cover costs, set up formal deployment structures, and hire outside support professionals. The study particularly highlights how established infrastructure and systematic approaches by larger organizations have contributed to the implementation of lean accounting practices. In addition, Kennedy & Widener (2008) found that the larger the company, the more complex the management system and the greater the demand for information. Therefore, they have a higher demand for a complex management accounting system with modern tools. In contrast, for small-sized enterprises, the organizational structure is lighter, and the need for information is less, so the management accounting system is often simpler. In addition, Fullerton et al. (2014) studied over 244 U.S. manufacturing enterprises and found that there is strong evidence supporting the advantage of large enterprises in implementing lean accounting. Research has shown that organizations with annual revenues in excess of USD 1 billion achieve significantly higher success rates when lean accounting is implemented than smaller enterprises. The study found that larger enterprises have more advantages from the availability of significant resources, including the financial capacity to deploy, the ability to hire experts to guide, and investment in training programs for employees. These resources allow larger organizations to maintain dedicated teams for lean initiatives and sustain long-term transformation efforts. Moreover, Ahmad et al. (2016) found that larger enterprises are often those that adopt lean accounting early because they have the internal capacity to test new systems and accept the risks associated with organizational change.

However, there has also been research suggesting that it is easier for a small firm to transform its accounting system due to its simpler organizational structure (Innes & Mitchell, 1990), more adaptable accounting practices, and fewer institutional barriers to making changes (Williams & Seaman, 2001). Ahmadi & Daryanto (2013) studied 85 Indonesian manufacturing

enterprises and identified specific obstacles faced by larger organizations. Their findings suggest that although larger enterprises possess more resources, they often face complexity in organizational structures that lead to longer deployment times and more significant resistance to change. The study documented cases where departmental coordination issues and bureaucratic processes slowed down the implementation of lean accounting practices. Agreeing with the above point of view, Bhasin (2012), and Netland & Ferdows (2016) revealed distinct characteristics in the company's scale-based implementation methods, arguing that large enterprises often demonstrate more systematic implementation methods with better documents, processes, and standardization but require a longer time to achieve full implementation. In contrast, smaller enterprises show advantages in terms of speed of deployment and higher levels of employee engagement even though they often have difficulty sustaining these activities over the long term. Despite this, the larger firm size perspective capable of more successful implementation and adoption of lean accounting is being supported by both a theoretical framework and more empirical evidence. Therefore, the paper proposes the following research hypothesis:

H1. Company size has a positive impact on lean accounting adoption.

The support and commitment of management have an impact on the application of lean accounting

Lawrence & Lorsch (1967) argue that organizational performance depends on the alignment of internal factors (such as management commitment) with the external environment or organizational goals. In the context of lean accounting, management plays an important role in aligning the company's strategic objectives with lean principles, ensuring that both operational and financial systems are integrated to support continuous improvement (Mc Vay et al., 2013; ur Rehman et al., 2021).

Transformational Leadership Theory emphasizes the role of visionary leaders in inspiring and motivating employees to embrace change. Transformational leaders are known for their ability to articulate a compelling vision, provide intellectual stimulation, and show individualized consideration for their employees (Bass & Avolio, 1994). In the context of lean accounting, management commitment is essential not only in terms of providing resources but also in promoting a culture of continuous improvement, accountability, and innovation (Ali et al., 2021). Leaders who actively support lean accounting initiatives signal to the organization that these changes are a strategic priority, encouraging employees to engage with and support the adoption process (Kumar & Kumar, 2014).

The adoption of lean accounting represents a significant change in the organization, requiring not only technical adjustments but also changes in the way employees think and approach their work. Management support plays an important role in facilitating this change by creating an environment in which employees feel empowered to participate in the transition. When management demonstrates a clear commitment to the success of lean accounting, it reduces uncertainty and builds trust among employees (Albliwi et al., 2014). This is especially important in organizations where employees have objections to new activities due to concerns about job losses, changes in work processes, or unfamiliarity with new systems. Commitment of senior management is a key determinant of the level of implementation of lean production and lean accounting activities in organizations (Fullerton & McWatters, 2002), enterprises with strong management commitment achieve 65% higher implementation success rates than enterprises with limited support (Fullerton et al., 2014), the study particularly highlights that enterprises with strong management support are more likely to allocate the necessary resources for staff training, system upgrades, and process redesigns, all of which are critical to the implementation of lean accounting adoption.

In addition, Bortolotti et al. (2015) argue that the role of management in promoting lean accounting is not limited to initial adoption but is also important in ensuring the long-term success and sustainability of new operations. Furthermore, Ruiz-de-Arbulo-Lopez et al. (2013) analyzed manufacturing enterprises and showed that management commitment influences lean accounting implementation through both direct impacts and indirect mechanisms. Their longitudinal study confirms that ongoing management support is not only critical during the initial rollout but that in order to maintain lean accounting practices over time, enterprises with ongoing management support are three times more likely to maintain their lean accounting practices after the five-year mark. Based on the theory, the paper proposes the following hypothesis:

H2. Management support and commitment have a positive impact on the adoption of lean accounting.

Workforce competencies have an impact on the adoption of lean accounting

According to Barney (1991), firms gain a competitive advantage when they make effective use of their internal resources, including human capital. In the context of lean accounting, the capacity of the workforce in general and of accountants, in particular, refers to their knowledge, skills and experience - acting as the main resource that allows the company to

DOI: 10.55643/fcaptp.1.60.2025.4643

implement and maintain lean accounting activities. Furthermore, training programs that enhance employees' understanding of lean accounting tools play an important role in building this capacity. Without well-trained employees, enterprises will have difficulty implementing lean accounting effectively, resulting in inefficiency and resistance to change.

Fullerton et al. (2014) argue that the competence of the accounting workforce is one of the most important factors influencing the successful implementation of lean accounting. Their research shows that enterprises that invest in training programs to improve their employees' understanding of lean accounting concepts and tools are more likely to achieve positive results. In particular, the study states that employees who are well-trained in value stream costing and simplified financial reporting are better equipped to integrate lean accounting into the company's operations leading to improved efficiency of decision-making and cost control. These findings underscore the importance of workforce competence as a driver of lean accounting adoption. The above findings were also tested based on the evaluation of previous studies such as Grasso (2006) and McVay et al. (2013).

In addition, Ahmad et al. (2016) explored the role of training in the implementation of lean operations in Australian manufacturing enterprises and highlighted the need for ongoing training and development to ensure successful adoption. Their research demonstrates that enterprises that regularly conduct training sessions for their employees on lean principles, including lean accounting, result in higher levels of cross-departmental employee engagement and a smoother transition to new processes. In contrast, enterprises that do not invest in education and training face greater opposition from employees, due to their fear of having difficulty operating the new accounting system without having access to the concepts, principles, and tools of lean accounting.

In addition, Bortolotti et al. (2015) examined the relationship between workforce capacity and successful implementation of lean operations, the results of which show that organizations with highly skilled workforces are more likely to implement lean accounting successfully because employees adapt more quickly to new systems and processes. The study also highlights the importance of soft skills, such as problem-solving and teamwork, in addition to the technical skills of accountants. Employees who have been trained in both the technical aspects of lean accounting and the principles of lean management are better able to contribute to the initiative's success. These findings are supported by Kennedy & Widener (2008), Hadid & Mansouri (2014) who have argued that enterprises that hold periodic, cross-functional training sessions that help employees understand how lean accounting supports common business goals have seen higher levels of adoption and better performance outcomes. Based on the theory, the paper proposes the following hypothesis:

H3. Workforce competence and training have a positive effect on the adoption of lean accounting.

The current accounting system has an impact on the application of lean accounting

According to Kennedy & Widener (2008), the current accounting system is one of the most important factors affecting the success of the transition to a lean accounting system. Their research shows that enterprises with traditional accounting systems, such as cost per product, face significant challenges when adopting lean accounting. This is because these traditional systems are not designed to support the operating principles of lean manufacturing, such as value stream pricing, and require extensive modification. In contrast, enterprises with more flexible and integrated accounting systems can apply lean accounting principles more easily because their current systems already fit the needs of real-time data and simplified reporting.

Maskell & Baggaley (2006) have emphasized the importance of the adaptability of the current accounting system in their study of lean accounting. They found that enterprises with rigid, outdated accounting systems often had difficulty implementing lean accounting because their systems were too focused on traditional cost control measures, which did not align with lean principles - anything that did not create value had to be discarded. Their research highlights that enterprises with modern modular accounting systems - which allow for customization and flexibility - are better positioned to integrate lean accounting practices. This flexibility allows enterprises to transition from traditional methods to lean methods without having to invest in their entire accounting infrastructure.

Fullerton et al. (2014) explored how the technological capabilities of a firm's current accounting system influence lean accounting adoption. The results show that enterprises with integrated accounting software - such as enterprise resource planning (ERP) systems - are more successful in adopting lean accounting because they provide real-time data, support value stream costing, and facilitate simplified financial reporting. In addition, Ahmad et al. (2016) enterprises with centralized accounting systems that provide real-time data are more likely to adopt lean accounting successfully because these systems can be easily integrated with lean production processes. Meanwhile, O'Connor & Deng (2008) examined the relationship between existing accounting structures and the adoption of innovative accounting practices, including lean accounting. Research shows that enterprises with traditional hierarchical accounting systems - where financial data is processed in a highly centralized manner - are less likely to successfully adopt lean accounting. This is because these

systems are too slow and cumbersome to provide the real-time financial data needed for lean decision-making. Based on the theory, the paper proposes the following hypothesis:

H4. The current accounting system has a positive impact on the application of lean accounting.

Cultural factors that have an impact on the application of lean accounting

According to Noori (2015), company culture is a group of human behaviours and attitudes, the company culture is reflected in the way the company conducts its operations and treats employees, consumers and the wider community. In addition, it can be expressed through the way of expressing freedom in decision-making, the way of expressing and proposing new ideas of employees (Shook, 2010).

Bortolotti et al. (2015) argue that cultured organizations that emphasize constant innovation and empower employees are more likely to successfully adopt lean accounting. In particular, enterprises that foster a culture of collaboration and open communication have been able to overcome resistance to change and integrate lean accounting practices into their operations. In contrast, organizations with a hierarchical, rigid culture face difficulties in implementing lean accounting because employees are less willing to accept new activities that break established habits and standards. Similarly, Ahmad et al. (2016) explored how organizational culture influences the adoption of lean practices in Australian enterprises and found that organizations with a culture of openness to change can adapt quickly to new accounting practices because employees are more willing to accept the principles of lean management and vice versa. Consistent with the above views, many studies have shown that the absence of lean culture is an important barrier affecting lean adoption (Sarhan et al., 2018; Demirkesen et al., 2019) as well as lean accounting (Grasso, 2006). Based on the theory, the paper proposes the following hypothesis:

H5. Cultural factors have a positive influence on the application of lean accounting.

The application of lean accounting has an impact on the performance of enterprises

Netland & Ferdows (2016) provide compelling evidence of the effectiveness of lean operations in improving operational performance. Their four-year investigation of 45 Volvo production plants across the globe revealed a particular trend in improving performance following the launch of lean operations. The most striking finding was the concentration of benefits in the initial implementation phase, especially in the first two years when factories achieved a 20% productivity increase, a 15% reduction in unit costs, and a 30% improvement in delivery efficiency. This pre-loaded improvement model shows that organizations can expect significant initial returns on their lean investments, although the rate of improvement tends to stabilize in subsequent years.

Mia & Winata's (2014) study of 76 manufacturing enterprises in Australia revealed a strong correlation ($r = 0.62$) between lean accounting adoption and Just-in-Time (JIT) performance, highlighting a symbiotic relationship between accounting practices and operational systems. A particularly important finding is that the mediating role of information technology in this relationship shows that the efficiency of lean accounting is enhanced when supported by the right technology infrastructure.

Rahman et al. (2010) conducted a study of 187 Thai manufacturing enterprises, the results demonstrated significant operational improvements, including a 24% reduction in production time, an 18% improvement in product quality at the first time, and a significant 32% reduction in inventory levels. The main takeaway from their research is the superior performance of enterprises that implement integrated lean accounting systems compared to those that choose to implement them in part. This suggests that the full benefits of lean accounting are best realized when it is implemented as part of a comprehensive lean transformation strategy rather than as an individual initiative.

Fullerton et al. (2014) conducted a study on 244 manufacturing enterprises and found a significant positive relationship between lean accounting activities and operational performance. Their findings show that enterprises implementing lean accounting have improved operational efficiency by 23%, as shown by reducing waste, improving product lead times, and improving quality metrics. Research demonstrates that lean accounting provides more relevant and timely information for operational decision-making, leading to improved performance outcomes.

In the Asian context, Mamat et al. (2015) investigated 115 Malaysian manufacturing enterprises and found that the implementation of lean accounting was positively associated with performance measures. Their structural equation model results show a strong positive correlation between lean accounting activities and key performance indicators, including shorter completion times ($\beta = 0.58$, $p < 0.01$), improved quality performance ($\beta = 0.62$, $p < 0.01$), and enhanced production efficiency ($\beta = 0.54$, $p < 0.01$). Based on the theory, the paper proposes the following hypothesis:

H6. The application of lean accounting has a positive impact on the performance of enterprises.

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AIMS AND OBJECTIVES

To identify and analyze the key factors affecting the adoption of lean accounting in Vietnamese firms. This objective focuses on understanding the challenges and enablers of lean accounting implementation in the context of Vietnam. The study will examine factors such as organizational size, management support, workforce capabilities, accounting system flexibility, and cultural dynamics to determine how they influence the adoption process. By identifying these factors, the study aims to provide a roadmap for firms that are considering transitioning to lean accounting.

To assess the role of lean accounting in improving operational performance in the context of Vietnam. The second objective is to evaluate the impact of lean accounting on operational performance. Specifically, the study will investigate whether lean accounting leads to measurable improvements in areas such as cost efficiency, productivity, lead time, and waste reduction. This assessment will help firms understand the potential return on investment from adopting lean accounting practices, thereby encouraging broader adoption across industries.

Provide practical recommendations for business managers to successfully implement and apply lean accounting.

Together, these objectives will provide a comprehensive analysis of the factors affecting the implementation, and adoption of lean accounting, and its impact on performance at enterprises. The findings will provide valuable insights for both academics and practitioners, contributing to the growing volume of research on lean accounting in developing countries, including Vietnam.

METHODS

The paper uses SPSS 22 and AMOS 20 (Arbuckle, 2011) to examine the PLS-SEM linear structure model, thereby looking for evidence of key factors affecting the adoption of lean accounting at enterprises. At the same time, assess the role of lean accounting in improving operational performance in the Vietnamese context.

For optimal results, the authors conducted a validation process including: Following Anderson & Gerbing (1988), the linear structural model analysis process includes: (i) Scale test: Overall Cronbach's alpha coefficient > 0,7 and corrected item-total correlation > 0,3; (ii) Exploratory Factor Analysis (EFA): Appropriateness of the measure with 0,5≤ Kaiser-Meyer-Olkin (KMO) ≤ 1, Bartlett's test of sphericity with a significance level (Sig) ≤ 0,05, factor extraction variance > 50%, Eigenvalues > 1, factor loadings require > 0,5 (Hair et al., 1998); (iii) Confirmatory Factor Analysis (CFA): The model is considered suitable when the Chi-square test has a P value > 0.05. However, the disadvantage of Chi-square is that it depends on the size of the research sample. The larger the sample size, the larger the Chi-quare, thereby reducing the suitability of the model. Therefore, in addition to P-value, the standards used are CMIN/df, in some practical studies, people distinguish between 2 cases: CMIN/df < 5 (with sample N > 200); or CMIN/df < 3 (when N < 200), the model is considered suitable (Kettinger et al., 1995). In this study, because the research sample of the graduate student N = 332 > 200, the article will use the standards of Kettinger et al. (1995), accepting CMIN/df < 5; GFI, TLI, CFI > 0.9; RMSEA < 0.08, the case of RMSEA < 0.05 according to Steiger (1990) is considered very good. In addition, according to Zikmund et al. (2000), if GFI < 0.9, the model's suitability to market data is also acceptable. According to Awang (2012) and Forza & Filippini (1998), the model is acceptable if the values 0.8 < TLI, CFI < 0.9, CMIN/df < 5, RMSEA ≤ 0.08. (iv) Structural equation modelling (SEM).

The research model is shown in Figure 1, with the economic equation of the study corresponding to the model as:

LAA = f (ORS, MAS, WOC, EAS, CUF) (1)

OPP = f (LAA) (2)

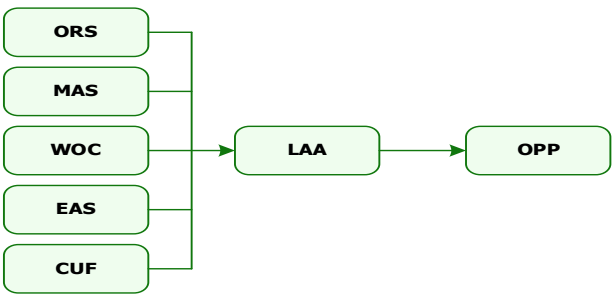

Figure 1. Research Model.

Variables in the PLS-SEM quantitative model are measured using a 5-level Likert scale (Likert, 1932), the scale is constructed in 5 levels, with the number 1 describing total disagreement, the number 2 disagreeing, the number 3 being a neutral rating, the number 4 agreeing, the number 5 strongly agreeing. The number of scales measuring the variables of this study is built on the basis of the foundation theory and the research overview, shown in Table 1 as follows:

Table 1. Describe the scale, observation.

No.	Notation	Survey Question Content	Source
I	**Organizational Size (ORS)**		
1	ORS1	My organization has sufficient resources (financial, human, technological) to support the implementation of lean accounting.	Hofer et al. (2012)
2	ORS2	The size of my organizational economy affects my ability to implement lean accounting activities.	Shah & Ward (2007)
3	ORS3	The number of full-time employees in my organization.	O'Connor & Deng (2008)
II	**Management Support (MAS)**		
4	MAS1	Senior management actively supports lean accounting practices in my organization.	Kennedy & Widener (2008)
5	MAS2	My company leadership is strongly committed to the long-term success of lean accounting.	Fullerton & McWatters (2002)
6	MAS3	Senior management allocates sufficient resources (time, budget, personnel) to implement lean accounting.	Bhasin (2012)
III	**Workforce Capabilities (WOC)**		
7	WOC1	Employees in my organization have the knowledge needed to implement lean accounting.	Fullerton et al. (2014)
8	WOC2	Employees are trained in lean accounting principles and practices on a regular basis.	Ahmad et al. (2016)
9	WOC3	Training programs are effective in improving employees' understanding of lean accounting.	Bortolotti et al. (2015)
IV	**Existing Accounting Systems (EAS)**		
10	EAS1	My company's current accounting system is flexible to adapt to lean accounting activities.	Maskell & Baggaley (2006)
11	EAS2	Traditional accounting practices (e.g., standard costing) act as a significant barrier to lean accounting adoption.	Johnson & Kaplan (1987)
12	EAS3	Existing accounting systems integrate well with lean management practices.	Kennedy & Huntzinger (2005)
V	**Cultural Factors (CUF)**		
13	CUF1	My organization's culture is open to adopting new methods such as lean accounting.	Bhasin & Burcher (2006)
14	CUF2	My organization's culture promotes collaboration between the accounting department and other departments.	Hines et al. (2004)
15	CUF3	The extent to which employees object to the adoption of lean accounting methods.	Hadid et al. (2016)
VI	**Lean Accounting Application (LAA)**		
16	LAA1	My company uses the value stream costing method to allocate costs to specific value streams rather than to products or departments.	Maskell & Baggaley (2006), Kennedy & Widener (2008).
17	LAA2	My company has simplified financial reporting to align with lean principles (e.g., using simple language and easy-to-understand reporting).	Maskell & Baggaley (2011), Fullerton et al. (2014).
18	LAA3	My company has applied box score reports to track operational performance, financial performance, and usage capacity.	Maskell & Baggaley (2004), Cokins (2013)
19	LAA4	My company has regularly abandoned traditional costing methods (e.g., standard costing) in favour of lean accounting methods.	Johnson & Kaplan (1987), Maskell & Kennedy (2007).
20	LAA5	My company has streamlined the accounting process to reduce waste (e.g., eliminating unnecessary transactions or reports).	Hines et al. (2004), Kennedy & Huntzinger (2005).
21	LAA6	My company's accounting system provides timely and relevant financial and non-financial information adequately to support lean decision-making.	Fullerton & McWatters (2002), Ittner & Larcker (1998).
22	LAA7	My company regularly applies the principles of continuous improvement to the accounting process.	Bhasin & Burcher (2006), Maskell & Baggaley (2006).
VII	**Operational Performance (OPP)**		
23	OPP1	Lean accounting has helped reduce my company's operating costs.	Kennedy & Widener (2008); Fullerton et al. (2014); Netland & Ferdows (2016)
24	OPP2	Lean accounting has improved productivity in my department.	Fullerton et al. (2014); Fullerton & Wempe (2009); Netland & Ferdows (2016)
25	OPP3	The time taken to complete the delivery of a product or service has been significantly reduced after the application of lean accounting.	Fullerton & Wempe (2009); Netland & Ferdows (2016).
26	OPP4	The quality of products or services has been significantly improved thanks to the application of lean accounting methods.	Mia & Winata (2014); Bortolotti et al. (2015); Mamat et al. (2015).
27	OPP5	Lean accounting has significantly enhanced customer satisfaction.	Shah & Ward (2007); Mia & Winata (2014).
28	OPP6	Lean accounting has improved employee engagement and productivity in their day-to-day tasks.	Hadid et al. (2016); Mia & Winata (2014); Mamat et al. (2015).

DOI: 10.55643/fcaptp.1.60.2025.4643

The model comprises 7 scales and 28 observed variables

In addition, to ensure the size of the study sample in the SEM analysis, based on Bentler's (1987) recommendation, a ratio of 5 to 10 surveys for each survey question is proposed. Kline (2023) recommends a minimum sample size of 200 for any SEM analysis or 10 cases per one observation, whichever is greater. Accordingly, the minimum sample size in this study is n = 10*i (i is the number of observed variables in the model), corresponding to this study, the sample size will be 10*28 = 280 votes. In order to improve the reliability of the survey information, the study selects the largest sample for the model according to one of the above principles.

Respondents were targeted at CFOs/CFOs; Accounting Managers; Accountants; Production Managers; Information Technology Managers and other employees from 126 enterprises across various industries in Vietnam, including manufacturing enterprises, such as electronics, textiles, and food processing; services, such as logistics and consulting, construction, and other industries. These individuals have roles that are directly or indirectly related to the implementation, management, and outcomes of lean accounting activities. Each of these positions plays an important role in financial decision-making, operational efficiency, and organizational change, which are core elements of the objectives of the study.

This study uses stratified random sampling methods to ensure that enterprises are diverse in types of activities (Production, services and construction) and geographical location (The survey ensures representation from major economic regions in Vietnam: In the North such as Hanoi, Hai Phong and industrial parks in Bac Ninh and Hai Duong; Central: Da Nang and neighbouring provinces; South: Ho Chi Minh City, Binh Duong and Dong Nai). By using stratified random sampling, this study minimizes sampling bias and enhances the study's ability to generalize its findings as the sample more accurately reflects the diversity of enterprises operating in Vietnam.

The questionnaire consists of two parts, the first part includes demographic information such as gender, age group, education level, position in the company, years of experience, and type of company. The second part includes the ORs, Mas, WOC, EAS, CUF, LAA, and OPP variables and the corresponding scales. First of all, the questionnaire will undergo a pre-examination with a small sample of 2 Finance Directors, 1 Chief Accountant and 2 lecturers in the accounting industry to ensure that the survey is clear, reliable and suitable for the research objectives. Feedback from this inspection will be incorporated for refinement prior to the formal survey. The official survey will be distributed both online and in-person to maximize the participation of the target audience. Online surveys are administered through Google Drive, while in-person surveys are conducted at the respondents' workplaces.

Data collection period from February 6, 2024, to June 16, 2024. The research results are based on 332 valid responses, ensuring sufficient data to conduct statistical analysis. The authors cleaned the data and entered the survey data into an Excel spreadsheet before running the model using SPSS 22 and AMOS 20 software.

During the data collection process, this study strictly adheres to research ethics and ensures the anonymity and privacy of all participants. Participants were fully informed about the purpose of the study, and how their data would be used, participation in the survey was entirely voluntary, with no pressure or obligation placed on respondents to complete the questionnaire.

RESULTS

Descriptive Statistical Analysis

The results of the demographic analysis from the survey sample are presented in Table 2 below.

Table 2. Statistics describing the sociological characteristics of the survey subjects. *(Source: compiled from the survey results)*

No.	Sociological characteristics of the survey subjects		Amount	Rate (%)
1	Gender	Male	184	55.4
		Female	148	44.6
2	Age	18 to 25 years	46	13.9
		26 to 35 years	98	29.5
		36 to 45 years	79	23.8
		46 to 55 years	65	19.6
		Over 55 years	44	13.2

(continued on next page)

Table 2. Continued.

No.	Sociological characteristics of the survey subjects		Amount	Rate (%)
3	Education	PhD	14	4.2
		Master	87	26.2
		Bachelor	231	69.6
4	Duty	CFO/Financial Controller	42	12.7
		Accounting Manager	74	22.3
		Accountant	102	30.7
		Production Manager	65	19.6
		IT Manager	38	11.4
		Others	11	3.3
5	Experience	1-5 years	43	12.9
		6-10 years	106	31.9
		11-15 years	96	28.9
		Over 16 years	87	26.3
6	Industry Type	Manufacturing	229	69.0
		Services	39	11.7
		Construction	40	12.0
		Others	24	7.30

Gender distribution: The sample included 184 males (55.42%) and 148 females (44.58%). This shows a relatively balanced gender distribution, with slightly higher male representation. The not-so-significant difference indicates good gender representation in the study.

Age distribution: The largest age group is 26 to 35 years old (29.52%), followed by 36 to 45 years old (23.79%). The age group from 46 to 55 accounted for 19.57%, while the age group from 18 to 25 accounted for 13.86% and over 55 years accounted for 13.25%. The age distribution shows the concentration of respondents between the ages of 26 and 45 (53.31%), which is usually the age group most involved in middle to senior positions. Younger employees (18-25 years old) and older employees (over 55 years old) are under-represented, which reflects the nature of the positions surveyed.

Education: The majority of respondents have a bachelor's degree (69.58%), followed by a Master's degree (26.20%), only 4.22% of respondents have a PhD. This suggests that most respondents have a college degree or higher, which are those with a professional background in accounting, finance, or management. The high proportion of those with bachelor's and master's degrees suggests that the survey targets highly educated professionals.

Regarding job positions: The most common job titles are Accounting (30.69%), followed by Head of Accounting Department (22.29%) and Head of Production Department (19.57%). CFO/CFO and IT Manager accounted for 12.65% and 11.44% of respondents, respectively, while other titles accounted for 3.31%. This distribution shows that the survey is primarily aimed at respondents with accounting and finance-related expertise, with a good representation of operations and IT managers. The survey results are consistent with the study's focus on lean accounting and operational performance, as these roles are likely to be most directly affected by the adoption of lean operations.

In terms of work experience: The majority of respondents have experience of 6-10 years (31.93%), followed by those with experience of 11-15 years (28.91%) and over 16 years (26.20%). The least experienced group are those with 1-5 years of experience, accounting for only 12.95%. This data shows that most respondents are experienced professionals, with more than 85% having more than 6 years of experience. This level of experience is important because it is correlated with a deeper knowledge of the company's operations and accounting systems, making these responses more reliable for research.

In terms of industry type: The largest proportion of respondents came from the Manufacturing industry, accounting for 68.98% of the sample. Services accounted for 11.75%, Construction accounted for 12.05% and other industries accounted for 7.22%. A majority of valid responses from manufacturing enterprises indicate that the survey is highly relevant to industries that typically adopt lean methods. However, the inclusion of service and construction industries increases the diversity of the sample, supporting the generalizability of research across different fields.

The demographic analysis in Table 2 shows a well-balanced sample in terms of gender, education, and experience, with a broad representation of respondents from finance, accounting, and manufacturing operations. Strong representation of the manufacturing industry is consistent with the research focus on lean accounting, as lean principles are particularly

DOI: 10.55643/fcaptp.1.60.2025.4643

relevant in the manufacturing environment. However, the survey of other industries such as services and construction enhances the generalizability of the study's findings. Overall, the template is suitable for investigating the impact of lean accounting on operational performance.

Determine the reliability coefficient of the scale

The specific results of testing the reliability of the Cronbach's Alpha scale are presented in Table 3 below.

Table 3. Scale analysis results for variables in the PLS-SEM model. *(Source: Statistics obtained by using SPSS 22 software)*

Variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Organizational Size (ORS): α = 0.828				
ORS1	18.00	10.420	0.649	0.790
ORS2	18.30	10.571	0.654	0.789
ORS3	18.13	10.996	0.667	0.788
Management Support (MAS): α = 0.833				
MAS1	14.58	7.320	0.647	0.798
MAS2	14.88	7.407	0.663	0.793
MAS3	14.71	7.686	0.700	0.784
Workforce Capabilities (WOC): α = 0.871				
WOC1	11.02	11.082	0.727	0.831
WOC2	11.08	11.090	0.720	0.834
WOC3	11.13	11.129	0.731	0.830
Existing Accounting Systems (EAS): α = 0.790				
EAS1	10.96	4.284	0.566	0.766
EAS2	11.35	4.074	0.650	0.736
EAS3	11.10	4.043	0.671	0.715
Cultural Factors (CUF): α = 0.824				
CUF1	7.30	2.792	0.661	0.776
CUF2	7.28	2.867	0.691	0.755
CUF3	7.14	2.747	0.687	0.768
Lean Accounting Application (LAA): α = 0.823				
LAA1	11.10	4.810	0.681	0.768
LAA2	10.97	4.873	0.651	0.776
LAA3	11.07	4.831	0.655	0.774
LAA4	10.84	5.017	0.589	0.801
LAA5	11.24	4.912	0.643	0.782
LAA6	11.18	4.902	0.642	0.784
LAA7	11.09	4.823	0.672	0.793
Operational Performance (OPP): α = 0.856				
OPP1	15.27	7.096	0.756	0.806
OPP2	15.41	7.538	0.589	0.848
OPP3	15.34	7.213	0.667	0.828
OPP4	15.25	7.457	0.584	0.849
OPP5	15.22	6.862	0.770	0.800
OPP6	15.21	6.861	0.771	0.801

The test results show that all scales have Cronbach's Alpha coefficient >0.6 and are quite high; the lowest is 0.790, and the highest is 0.871. In addition, the total variable correlation coefficients are >0.3. Therefore, it can be confirmed that the scales of the study are reliable and can be used to analyze the discovery factor in the next step.

Exploratory Factor Analysis

EFA factor analysis for independent variables. Processing results from SPSS software for independent variables are as follows:

Table 4. Test the KMO index. *(Source: Statistics obtained by using SPSS 22 software)*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.821
Bartlett's Test of Sphericity	Approx. Chi-Square	4116.217
	df	486
	Sig.	0.000

Table 4 shows that the KMO coefficient = 0.821 > 0.5, Bartlett's Test = 0.000 < 0.05 shows that the observed variables related to the EFA analysis are correlated.

Table 5. Variance extracted for factors and observations. *(Source: Statistics obtained by using SPSS 22 software)*

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		Rotation Sums of Squared Loadingsa	
	Total	% of Vari-ance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.684	23.872	23.872	6.684	23.872	23.872	6.118
2	4.173	14.902	38.775	4.173	14.902	38.775	3.957
3	2.415	8.623	47.398	2.415	8.623	47.398	2.865
4	2.211	7.896	55.294	2.211	7.896	55.294	3.219
5	1.873	6.689	61.983	1.873	6.689	61.983	3.491
6	1.577	5.633	67.616	1.577	5.633	67.616	3.098
7	1.557	5.562	73.178	1.557	5.562	73.178	1.948
8	.937	3.345	76.523				
9	.889	3.176	79.699				
10	.853	3.047	82.746				
11	.744	2.659	85.405				
12	.571	2.040	87.444				
13	.536	1.915	89.360				
14	.438	1.563	90.922				
15	.399	1.425	92.348				
16	.394	1.407	93.754				
17	.333	1.191	94.945				
18	.258	.922	95.867				
19	.239	.853	96.720				
20	.200	.715	97.436				
21	.173	.619	98.054				
22	.145	.518	98.573				
23	.127	.453	99.026				
24	.091	.326	99.352				
25	.071	.253	99.605				
26	.059	.210	99.815				
27	.032	.113	99.929				
28	.020	.071	100.000				
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

DOI: 10.55643/fcaptp.1.60.2025.4643

Table 5 shows that the total variance extracted is 73.178 > 50%, so EFA analysis is appropriate. The Eigenvalues coefficient is 1.557 > 1, which is significant at a stop coefficient of 1.557, the factors explaining 73.178% of the variation of the data.

Table 6. Rotated Component Matrix[a]. Note: a/ - rotation converged in 7 iterations. *(Source: Statistics obtained by using SPSS 22 software)*

Pattern Matrix[a]							
	Component						
	1	2	3	4	5	6	7
LAA5	.908						
LAA6	.905						
LAA2	.893						
LAA1	.849						
LAA4	.837						
LAA7	.803						
LAA3	.725						
OPP1		.953					
OPP3		.908					
OPP4		.775					
OPP2		.768					
OPP5		.751					
OPP6		.720					
ORS2			.887				
ORS1			.872				
ORS3			.832				
MAS3				.930			
MAS2				.890			
MAS1				.867			
WOC3					.861		
WOC2					.790		
WOC1					.773		
EAS1						.908	
EAS2						.894	
EAS3						.751	
CUF2							.791
CUF1							.772
CUF3							.669

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

The analysis results in Table 6 show that the observed variables have been grouped into 07 groups of variables with the order of the observed variables kept the same as the variables that were originally constructed, the factor loading coefficients are all greater than 0.5, so these 07 groups of variables ensure convergent value and discriminant value. The original theoretical model remains unchanged and has practical significance.

Confirmatory factor analysis and linear structure model

Confirmatory factor analysis (CFA) was used to test the model fit and reliability of the final scale. The results of Confirmatory Factor Analysis and the estimation of the Partial Least Squares Structural Equation Modelling are illustrated in Figure 2.

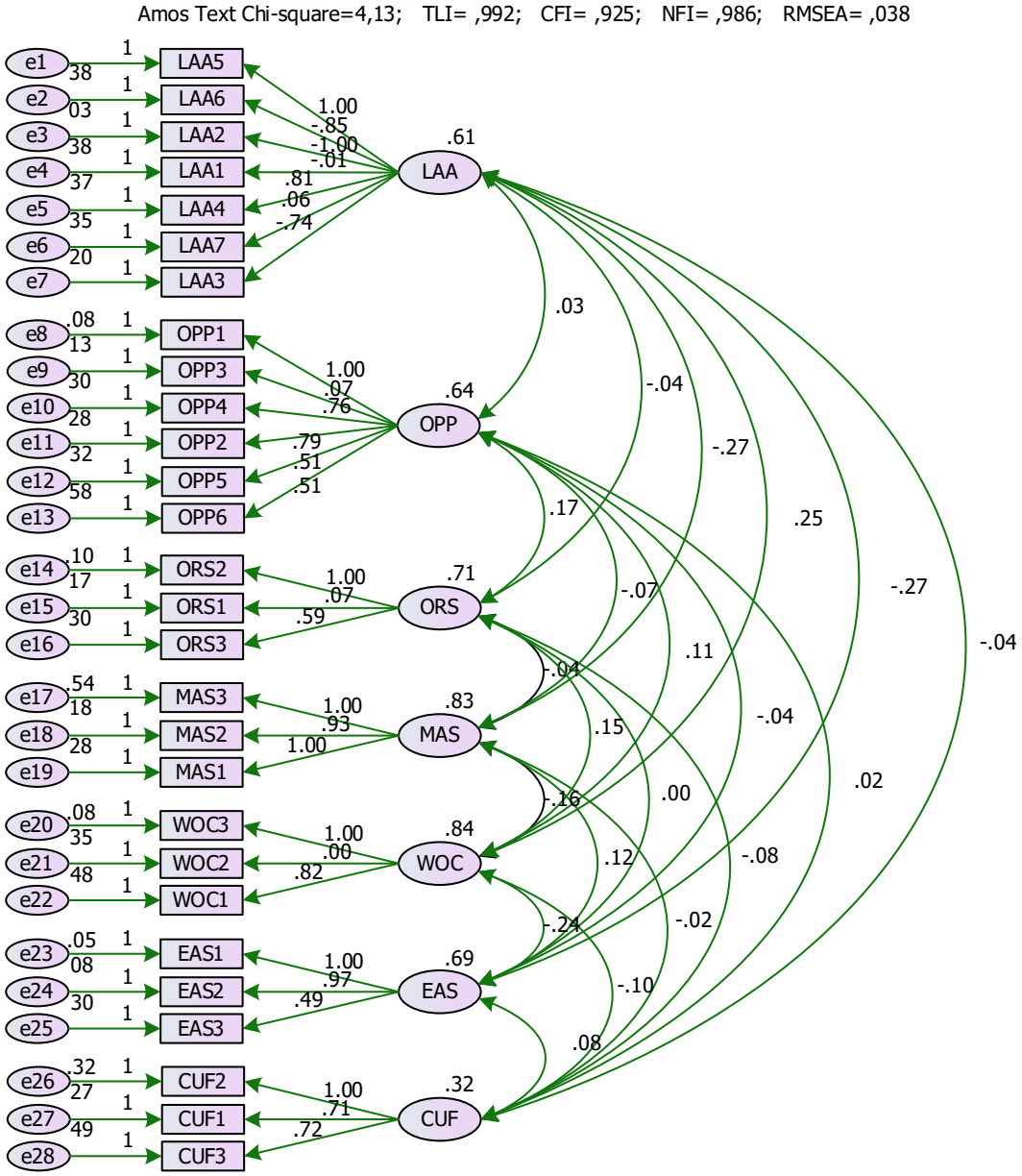

Figure 2. Summary of confirmatory factor analysis. *(Source: Data analyzed by the authors using AMOS 20 software)*

The results of the confirmatory factor analysis indicate that the adjusted Chi-squared value divided by degrees of freedom (Cmin/df) is 4.13, which is in the range ≤ 5. TLI value = 0.992, greater than 0.9; CFI value = 0.925 and greater than 0.9; NFI value = 0.986, greater than 0.9; and RMSEA value = 0.038, which is less than 0.05. Therefore, it can be concluded that the integrated model is suitable for market data as it meets the test criteria.

The study uses a linear structure model (SEM) to test the model and research hypotheses, the results are shown in Figure 3.

DOI: 10.55643/fcaptp.1.60.2025.4643

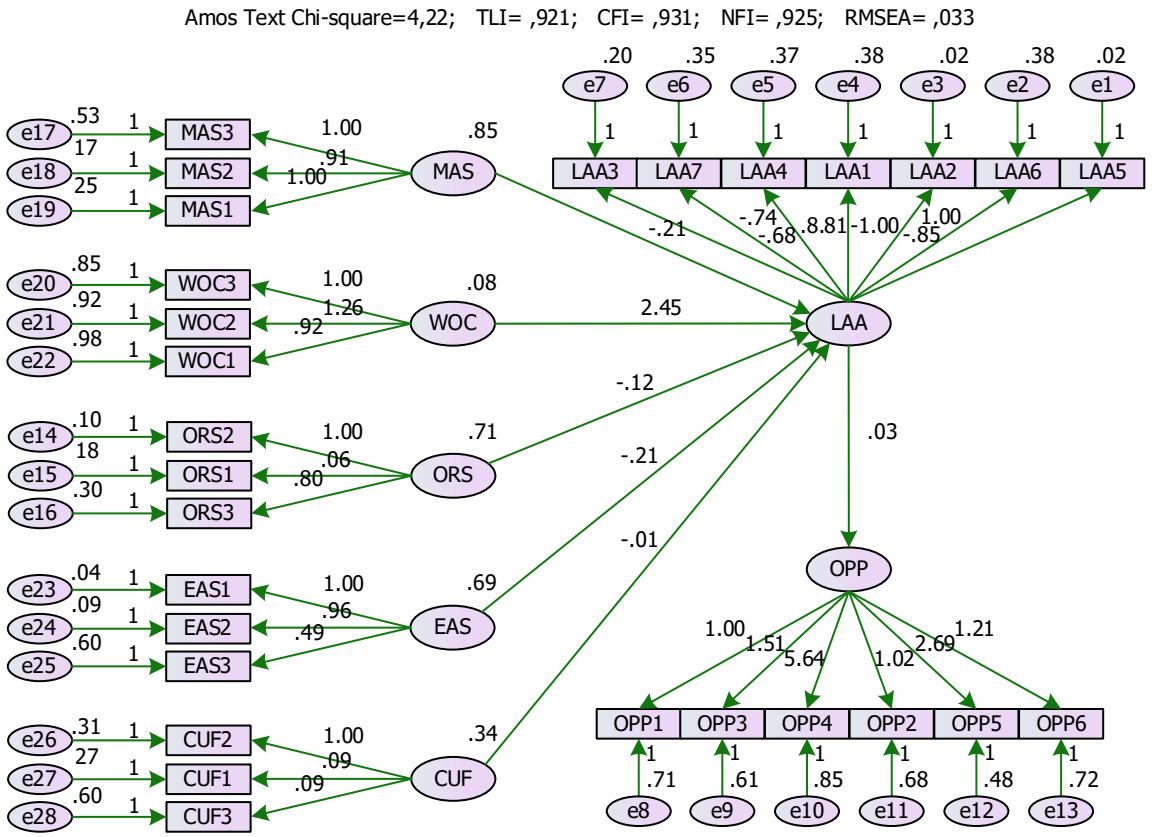

Figure 3. Results of model regression estimation. *(Source: Data analyzed by the authors using AMOS 20 software)*

The results from Figure 3 show that the adjusted Chi-squared value divided by degrees of freedom (Cmin/df) is 4.22 in the range of ≤ 5. The TLI = 0.921 value is greater than 0.9; the CFI = 0.931 value exceeds 0.9; the NFI = 0.925 value exceeds 0.9; and the RMSEA = 0.033, which is less than 0.05. Thus, it can be seen that the model is suitable for real data because it meets the accreditation criteria.

Table 7. Hypothesis test results. *(Source: Statistics obtained by using AMOS 20 software)*

Hypothesis	Impact			Estimate	S.E.	C.R.	P	Label
H2	LAA	<---	MAS	0.209	0.040	5.187	***	Accept
H3	LAA	<---	WOC	2.452	0.469	5.233	***	Accept
H1	LAA	<---	ORS	0.117	0.043	2.728	0.006	Accept
H4	LAA	<---	EAS	0.209	0.043	4.909	0.929	Refuted
H5	LAA	<---	CUF	0.006	0.072	0.089	***	Accept
H6	OPP	<---	LAA	0.027	0.065	0.420	0.015	Accept

Table 7 presents the results of hypothesis testing with the significance level of the estimated coefficients: P ≤ 0.05; confidence level ≥ 95%, hypotheses H1, H2, H3, H5 and H6 are accepted, hypothesis H4 is rejected.

DISCUSSION

The results of the study show important findings related to factors affecting the application of lean accounting in Vietnamese enterprises. Management support has a positive and significant impact on the adoption of lean accounting. This close relationship is consistent with previous research by Fullerton et al. (2014), Kennedy & Widener (2008), Bhasin (2012), and Fullerton & McWatters (2002) who found that management commitment is critical to a successful lean accounting implementation. Similarly, the strong positive impact of workforce capacity on the adoption of lean accounting, this finding

supports the studies of Maskell & Baggaley (2006), Kennedy & Widener (2008), Bortolotti et al. (2015), Ahmad et al. (2018), which emphasizes the importance of workforce competence in the application of lean accounting. Organizational size also has a statistically significant positive impact on lean accounting adoption, which is consistent with previous studies showing that larger firms are more likely to adopt innovative accounting methods (Hofer et al., 2012; Shah & Ward, 2003; O'Connor & Deng, 2008). However, this result is in part contrary to the findings of Williams & Seaman (2001), Bhasin (2012), and Ahmadi & Daryanto (2013) who argue that smaller firms have an advantage in implementing accounting changes. Cultural factors also play an important role in the positive impact of the application of lean accounting, the results of the study emphasize that corporate culture is a factor that facilitates the successful implementation of lean accounting, which is consistent with the conclusions in the studies of Bortolotti et al. (2015), Bhasin & Burcher (2006), Hines et al. (2004), Hadid et al. (2016). However, while this study shows that cultural factors have a statistically significant impact on the adoption of lean accounting, other studies - such as Zhao et al. (2012) - have reported conflicting results on the influence of culture on the adoption of lean practices. This difference is due to the unique cultural context in Vietnam, where the economy is increasingly deeply integrated with the context of globalization, which has fostered a more adaptive and creative business environment than in other countries.

Interestingly, the study did not find a statistically significant impact of the current accounting system on the adoption of lean accounting in firms in Vietnam. This is believed to be the main difference between this study and some previous studies that lie in the role of the current accounting system. In the present study, current accounting systems were found to have no statistically significant impact on lean accounting adoption, in contrast to the findings of Wouters & Wilderom (2008) which argue that current accounting systems supporting real-time data and performance measurement significantly enhance lean accounting adoption. This difference may be due to the difference in the technology infrastructure available at Vietnamese enterprises compared to those in other regions.

The study also found that the adoption of lean accounting has a positive effect on the company's performance. Although the impact is relatively small, its statistical significance supports the theoretical framework showing that lean accounting activities contribute to improved operational performance. This is thought to be consistent with the research of Fullerton & Wempe (2009), Taj & Morosan (2011), Fullerton et al. (2014), and Hadid et al. (2016) on the performance benefits of lean accounting implementation in firms.

Policy implications for managers

The study's findings provide some important practical implications for company managers who are considering or implementing lean accounting practices to enhance operational performance.

First, hypothesis H2 demonstrates that management support has a significant positive effect on lean accounting adoption ($\beta = 0.209$, $p < 0.001$). The significant impact of management support on the adoption of lean accounting highlights the critical role of leadership in driving successful accounting initiatives. Managers must actively support lean accounting initiatives by providing the necessary resources, setting clear goals, and fostering an environment that encourages innovation. Specifically, managers need to take the following actions: (i) Establish a clear vision and goals for lean accounting implementation; (ii) Allocate sufficient resources, including financial capital and human resources for lean accounting implementation; (iii) Actively participate in the implementation process, managers need to directly participate in the transition rather than just shouting slogans; (iv) Create formal communication channels to address challenges and objections during implementation; (v) Should build a reward system that encourages the application of lean principles.

Second, the results for Hypothesis H3 reveal a strong positive relationship between workforce competence and lean accounting adoption ($\beta = 2.452$, $p < 0.001$). The positive impact of workforce capacity underscores the need for managers to invest in building a skilled workforce and adapting new accounting methods. Lean accounting requires a workforce that is not only proficient in traditional accounting practices but also in lean principles in general, such as value stream costing and real-time financial reporting. Therefore, managers should focus on professional development for their accounting teams and operations. To achieve this, managers need to: (i) Develop comprehensive training programs focused on lean accounting principles and practices; (ii) Encourage accounting and finance staff to study to achieve professional certifications; (iii) Create cross-functional teams to enhance knowledge sharing between departments, especially the accounting department and the production department.

Third, hypothesis H1 confirms that organizational size has a statistically significant positive impact on lean accounting adoption ($\beta = 0.117$, $p = 0.006$). Larger organizations tend to have more resources, such as financial capacity and skilled personnel, which facilitate the implementation of lean accounting practices. However, managers of SMEs should not be discouraged. While larger organizations may have more resources, SMEs can still implement lean accounting by developing implementation strategies that fit the size of their business, adopting a phased approach. Managers of smaller enterprises

DOI: 10.55643/fcaptp.1.60.2025.4643

should start by implementing lean accounting in specific areas or departments where it may have the most immediate impact, such as inventory management or cost of production calculations. Over time, as the benefits become apparent, lean accounting activities will be progressively expanded across the organization.

Fourth, contrary to expectations, hypothesis H4 finds that the current accounting system does not have a statistically significant impact on lean accounting adoption ($\beta = 0.209$, $p = 0.929$). This suggests that existing systems, whether traditional or modern, do not strongly influence the adoption of lean accounting in Vietnamese enterprises. The lack of significant impact from existing accounting systems suggests that managers should not feel constrained by outdated or inflexible systems. Instead of focusing on the limitations of existing systems, managers should explore new accounting technologies and software that are compatible with lean principles. Managers should consider adopting modern, cloud-based accounting systems that provide real-time data integration and adjustable reporting features. This flexibility will allow enterprises to better support lean accounting and adapt their financial systems to changing operational needs without being hindered by legacy systems.

Fifth, hypothesis H5 confirms that cultural factors have a positive and significant impact on lean accounting adoption ($\beta = 0.006$, $p < 0.001$). Organizations with a culture of openness to innovation and collaboration between departments are more likely to successfully implement lean accounting practices. Managers in Vietnamese enterprises must strive to foster a culture of continuous improvement and be open to innovation. To do this, managers need to: (i) Promote thinking that encourages employees to identify inefficiencies and propose solutions; (ii) Managers should model and apply lean principles in their own decision-making and operational strategies; (iii) In addition, managers should create incentive policies to reward employees for their contributions to lean initiatives, thereby bringing lean accounting into the company's organizational culture.

CONCLUSIONS

This study explored the factors affecting the implementation of lean accounting and its role in improving operational performance in enterprises in Vietnam. The study identified several key factors that positively influence lean accounting adoption, including management support (MAS), workforce competency (WOC), organizational size (ORs), and cultural factors (CUF). These findings underscore the importance of leadership, employee skills, and organizational readiness in driving a successful transition to lean accounting practices. Notably, the study found that the Existing Accounting System (EAS) had no significant impact on lean accounting adoption, suggesting that enterprises are not constrained by their current system and may instead focus on implementing more flexible and modern accounting tools. Research also demonstrates that the adoption of lean accounting contributes to improved operational performance (OPP), although the efficiency is relatively modest. This indicates that while lean accounting can enhance a company's operational efficiency, its impact can be enhanced when combined with other lean management activities. Interestingly, the study found no significant relationship between current accounting systems and lean accounting implementation, in contrast to some previous research in the Western context. These findings contribute to both the theoretical understanding and practical application of lean accounting in developing economies, especially Vietnam. Research shows that Vietnamese enterprises should prioritize workforce development, ensure a strong management commitment, and consider organizational size and cultural factors when implementing lean accounting practices. The results also highlight the need for context-specific approaches to implementing lean accounting as some of the findings differ from previous studies in developed economies. Future studies could explore the long-term sustainability of lean accounting practices in Vietnamese firms and further explore new factors that could affect the relationship between lean accounting and operational performance.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

Conceptualization: *Pham Huy Hung, Nguyen Thi Hong Lam*

Data curation: *Pham Huy Hung, Nguyen Thi Phuong*

Formal Analysis: *Pham Huy Hung, Nguyen Thi Hong Lam*

Methodology: *Pham Huy Hung, Nguyen Thi Hong Lam*

Software: *Pham Huy Hung, Nguyen Thi Phuong*

Resources: *Pham Huy Hung, Nguyen Thi Phuong, Nguyen Thi Hong Lam*

Supervision: *Pham Huy Hung, Nguyen Thi Hong Lam*

Investigation: *Pham Huy Hung, Nguyen Thi Hong Lam*

Visualization: *Pham Huy Hung, Nguyen Thi Phuong, Nguyen Thi Hong Lam*

Project administration: *Pham Huy Hung, Nguyen Thi Phuong*

Funding acquisition: *Pham Huy Hung, Nguyen Thi Hong Lam*

Writing – review & editing: *Pham Huy Hung, Nguyen Thi Phuong*

Writing – original draft: Pham Huy Hung, Nguyen Thi Phuong, Nguyen Thi Hong Lam

FUNDING

The Authors received no funding for this research.

CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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ФАКТОРИ, ЩО ВПЛИВАЮТЬ НА ВПРОВАДЖЕННЯ ОЩАДЛИВОГО ОБЛІКУ ТА ЙОГО РОЛЬ У ПІДВИЩЕННІ ОПЕРАЦІЙНОЇ ЕФЕКТИВНОСТІ: ДОСВІД В'ЄТНАМУ

Це дослідження має на меті відповісти на питання, які фактори впливають на впровадження ощадливого обліку та його вплив на результати діяльності в'єтнамських підприємств. Мета дослідження – вивчити, як організаційні, управлінські та культурні фактори впливають на впровадження ощадливого обліку у В'єтнамі, та оцінити його роль у підвищенні операційної ефективності. Використовуючи кількісний підхід, у рамках дослідження було зібрано дані про 332 респондентів зі 126 підприємств різних галузей, переважно виробничих (69%), шляхом структурованого опитування. Статистичні методи, включаючи перевірку гіпотез за допомогою моделювання структурних рівнянь (PLS-SEM), показують, що підтримка керівництва, компетентність персоналу, розмір організації та культурні фактори мають позитивний вплив на впровадження ощадливого обліку. Водночас дослідження не виявило статистично значущого впливу поточної системи бухгалтерського обліку на застосування ощадливого обліку на підприємствах В'єтнаму. Дослідження також підтверджує позитивний зв'язок між упровадженням ощадливого обліку та операційними показниками, що означає, що підприємства можуть підвищити свою операційну ефективність завдяки впровадженню та застосуванню ощадливого обліку. Крім того, ці результати є важливими, оскільки вони є першими комплексними емпіричними даними з в'єтнамського контексту, що надають цінну інформацію й для практиків, і для дослідників. Результати свідчать про те, що в'єтнамським підприємствам слід надавати пріоритет розвиткові персоналу й підтримці з боку керівництва, ураховуючи при цьому розмір організації та культурні фактори у своїх стратегіях упровадження. Це дослідження сприяє розумінню впровадження ощадливого обліку в країнах, що розвиваються, та надає практичні рекомендації щодо його успішного впровадження.

Ключові слова: ощадливий облік, операційна ефективність, управлінська підтримка, в'єтнамські підприємства

JEL Класифікація: M41, L25, L60

DOI: 10.55643/fcaptp.1.60.2025.4643