https://doi.org/10.59865/abacj.2024.53

MANAGEMENT ACCOUNTING PRACTICES AND FINANCIAL PERFORMANCE OF HOTEL BUSINESS IN THAILAND: ARE CONTINGENCY THEORY PERSPECTIVES STILL RELEVANT DURING THE COVID-19 PANDEMIC?

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Abstract

This study examines the impact of perceived uncertainty on management accounting practices (MAPs) and financial performance in Thai hotels during the COVID-19 pandemic. Using Generalized Structured Composite Analysis (GSCA), results show that uncertainty significantly influences MAP implementation, enhancing financial performance. MAPs partially mediate the relationship between uncertainty and performance, indicating their role in addressing uncertainty but not fully explaining performance outcomes. This research highlights that MAPs should be seen not just as reactive measures but as proactive tools for building resilience in dynamic environments, offering insights into contingency theory application.

Keywords: Contingency Theory, Management Accounting Practices, Budgeting, Cost Management, Profitability Analysis, Hotels, GSCA, VUCA world

1. INTRODUCTION

The acronym VUCA—volatility, uncertainty, complexity, and ambiguity—originated from the U.S. Army War College in 1987 to describe leadership challenges in the post-Cold War era (Ahir et al., 2020). While initially used in military contexts, VUCA has since been embraced by various sectors, including business and leadership, to describe environments marked by rapid change and unpredictability, such as the stock market and global economy. Leaders in these contexts must adapt quickly, making decisions with incomplete information (Ru-zhe et al., 2023). This applies even in industries such as hospitality, where the impact of VUCA is unavoidable. Thailand's hotel industry, closely tied to tourism, contributed 1.03 trillion Baht (6.1%) of GDP in 2019. Despite a significant downturn in 2021 due to COVID-19, recovery is projected for 2022-2023, with a full rebound to pre-pandemic levels expected by 2026 (Lunkam, 2021). Thailand remains a top tourist destination.

The world's uncertainty rate has increased dramatically since the 2010s, reaching the

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'Declaration of Generative AI and AI-assisted technologies in the writing process':

During the preparation of this work the authors used ChatGPT in order to check grammar and improve readability of the manuscript. After using this tool/service, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

all-time highest point of the last 60 years by the end of 2019 (Ahir et al., 2020). Furthermore, the specific year - 2020 could be considered as a representative example of how uncertainty has evolved. The emergence of the COVID-19 pandemic at the beginning of 2020 caused several paradigm shifts from individual to organizational, and personal to professional, across industries (Howe et al., 2020) as people needed to change consumption behavior (Srisawasdi et al., 2024), which in turn, could negatively affect the performance of the hotel business. As a result, hotels and related business organizations needed to develop competitive strategies (Chen & Eyoun, 2021; Meesing, 2021; Peng & Potipiroon, 2022; Prasongthan, 2022; Prompatanapak et al., 2022; Kim et al., 2022; Chutiphongdech et al., 2023; Kumar et al., 2023; Meeprom & Suttikun, 2024) and financial control measures to improve and sustain their competitive advantages. Nevertheless, investigations into how hotels make use of MAPs as management control systems during perceived high uncertainty is still lacking. Furthermore, there is little research and little knowledge on management accounting in the tourism and hotel industries (Pellinen, 2003). Research in management accounting has consistently focused on sizable manufacturing companies.

This study examines whether contingency theory remained relevant during the COVID-19 pandemic by investigating the influence of perceived uncertainty on the implementation of management accounting practices (MAPs) and financial performance. Despite the pandemic's decline, concerns persist regarding VUCA, impacting revisit intentions (Ru-zhe et al., 2023).

The gap in the literature is that, first of all, from the studies that incorporate contingency theory to formulate a conceptual framework, most were carried out before the COVID-19 pandemic; however, the results are still inconclusive. Lastly, regarding statistical approaches, many previous studies examined the effect of MAPs on firm performance using various statistical techniques such as multiple regression analysis (MRA) and structural equation modeling without mentioning about how to choose the types of structural equation modeling. (Zenri, 2007; Farrar & Guo, 2017; Oyewo et al., 2024).

Factor-based structural equation modeling (SEM) employs a factor-based measurement model, while composite-based SEM utilizes a composite or component-based measurement model (Cho et al., 2022). Despite the prevalence of contingency-based management accounting studies employing factor-based SEM, many lack justifications for their choice of using a structural model. This research highlights the significance of using Generalized Structural Composite Analysis (GSCA) to validate a composite-based measurement model, conducting structural path analysis, and assessing the predictive power of the emergent constructs. Inappropriate modeling approaches may lead to parameter estimation biases, resulting in flawed conclusions.

The paper commences with a literature review, followed by research methods, and GSCA applications, and concluding with the discussion, contributions, and limitations of the study.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Contingency Theory and Uncertainty

Contingency theory asserts that effective management requires context-specific strategies, particularly in uncertain environments. This study examines business uncertainty through perceived environmental uncertainty (PEU) and task uncertainty (TU), especially relevant for hotels disrupted by the COVID-19 pandemic. This study delves into the strategic role of MAPs within contingency theory, emphasizing their importance for organizational resilience amid uncertainty. Uncertainty in this research is attributable to perceived environmental uncertainty (PEU) and task uncertainty (TU).

Perceived environmental uncertainty (PEU) is defined as the extent to which managers find it difficult to estimate the outcome of an event. PEU arises from various uncertainties, for instance, economics, politics, society, technology, competition, and customer demands (Chenhall, 2003). The shift toward anticipatory tools reflects the need for organizations to adapt to volatile environments by enhancing their decision-making capacity. PEU alone does not fully account for the observed variations in the role and effectiveness of management control (Hartmann & Maas, 2011). Therefore, task uncertainty is also considered to measure the overall uncertainty of hotels. Building on this, the following hypothesis is proposed:

H1a: The level of perceived environmental uncertainty (PEU) is a first-order construct of business uncertainty.

Task uncertainty (TU) is referred to as the level of uncertainty from work processes, production processes, software, personnel programs, and bodies of work knowledge (Chenhall, 2003). Task uncertainty is actually a function of task difficulty and task variability. For the hotel business, examples of task variability are uncertainty about the level of services, sufficient personnel, and food and beverage preparation (Mollanazari & Abdolkarimi, 2012). Task uncertainty may be able to measure overall uncertainty. Based on these insights, the following hypothesis is proposed:

H1b: The level of task uncertainty (TU) is a first-order construct of business uncertainty.

2.2 Management Accounting Practices (MAPs)

Management Accounting Practices (MAPs) encompass a comprehensive process that includes the identification, measurement, accumulation, analysis, preparation, interpretation, and communication of financial information to facilitate managerial decision-making, planning, evaluation, and control. In the hotel industry, key components of MAPs, as identified in the literature, incorporate budgeting, cost management, and profitability analysis (Bataineh, 2018; Petera & Soljakova, 2020).

Budgeting is defined as the extent to which hotels use budgeting for planning and control. Components of budgeting are conceptualized into zero-based budgeting (ZBB), incremental budgeting (IN), flexible budgeting (FL), and activity-based budgeting (ABB), as they all play a major role in effective planning and control of organizational resources (Pavlatos & Paggious, 2009; Souza & Lunkes, 2016).

Zero-based budgeting (ZBB) is a budgeting approach that begins the budgeting process from a "zero base," focusing exclusively on current activities while disregarding historical financial data. This method is particularly effective in dynamic environments where adaptability is crucial (Wetherbe & Montanari, 1981; Garrison et al., 2021). In ZBB, budgets are created based on specific project details and objectives, ensuring each expense is justified and aligned with current strategic goals. Although ZBB can be resource-intensive and time-consuming due to the rigorous analysis needed to evaluate each activity's relevance, its ability to manage significant expenditures is noteworthy. By encouraging a thorough review of activities before budget approvals, ZBB cultivates a culture of cost consciousness and strategic alignment, enabling organizations to remain agile in the face of changing business landscapes (Hayes & Cron, 1988). Thus, ZBB is a valuable management accounting practice for optimizing resource allocation and enhancing overall performance.

Incremental budgeting (IN) is a budgeting method that starts with historical financial data, using past figures as a baseline for developing the current budget. Adjustments are then made to account for changes in input costs and anticipated operational variations. This approach is practical due to its straightforward implementation and reduced time requirements compared to zero-based budgeting. In the hotel sector, where operations across various units—such as food and beverage services—are consistent and well-defined, incremental budgeting remains effective (Garrison et al., 2021; Nnoli et al., 2016). Hotels typically maintain comprehensive historical records of service lines, including room services and food sales, providing a valuable foundation for budget preparation. By leveraging this past performance data, hotels can efficiently develop budgets that align with their operational realities. Consequently, incremental budgeting streamlines the budgeting process while supporting financial performance and operational effectiveness, making it a pragmatic choice for hotel management.

Flexible budgeting (FL) is a crucial financial management tool for hotels, allowing them to assess costs, revenues, and profits based on varying activity levels (Uyar & Bilgin, 2011). This approach enables organizations to adjust budgets in response to fluctuations in occupancy rates, seasonal demand, and other external factors, enhancing financial oversight and aligning with strategic objectives (Lomova et al., 2016). The widespread adoption of flexible budgeting in the hotel industry (Akmese, 2016) highlights its practicality and effectiveness. Such adaptability is vital for maintaining performance standards in an environment marked by rapid change and uncertainty, fostering a proactive approach to resource management and operational control.

Activity-Based Budgeting (ABB) is an advanced budgeting system that enhances management in shared service departments by providing detailed insights into capacity utilization and resource allocation, surpassing traditional budgeting methods (Moustafa, 2005). This approach focuses on creating budgets tied to specific activities, allowing organizations to effectively monitor revenues and expenses related to each operational function. For instance, hotels can analyze costs and revenues linked to services such as housekeeping, food and beverage, and event management, facilitating informed resource allocation and operational adjustments (Pavlatos et al., 2021). As a result, ABB becomes a vital tool for optimizing hotel operations, offering a robust framework for comprehensive financial analysis and strategic planning.

As previously discussed, the following hypotheses are proposed to confirm the measurement model:

H2a: The extent of zero-based budgeting implementation is a first-order construct of MAPs.

H2b: The extent of incremental budgeting implementation is a first-order construct of MAPs.

H2c: The extent of flexible budgeting implementation is a first-order construct of MAPs.

H2d: The extent of activity-based budgeting implementation is a first-order construct of MAPs.

Costing management is defined as the extent to which hotels make use of absorption costing (AC), variable costing (VC), standard costing (SC), and activity-based costing (ABC), as these costing methods are ranked as having the highest importance for hospitality services (Pavlatos & Paggios, 2009). Hotel businesses produce accurate cost information in order to survive and to achieve their targets (Korkmaz & Afsar, 2021).

Absorption costing (AC) requires the implementation of robust costing systems to produce accurate cost information, essential for minimizing cost distortion (Patiar, 2016). This method allocates all production costs—both fixed and variable—as well as service costs, to specific cost objects such as customers or products, providing managers with comprehensive data for informed decision-making. In the hotel industry, effective cost allocation through absorption costing is crucial for optimizing pricing strategies, profitability analysis, and performance evaluations across various functions, such as food and beverage services or room rentals. Ultimately, the focus on accurate cost information in absorption costing enhances strategic decision-making, enabling hotels to navigate complex market dynamics and achieve sustainable performance.

Variable costing (VC) focuses on costs directly affected by changes in service levels, providing a refined approach for the hotel industry. This method allows for accurate assessments of costs related to various services and operational activities (Al-Omiri & Drury, 2007). By emphasizing variable costs, managers can cover operational expenses and make informed decisions regarding pricing adjustments and capacity utilization. Additionally, VC enables hotels to evaluate the profitability of special requests by analyzing incremental costs, ensuring that fixed costs do not distort short-term financial assessments.

Standard costing (SC) involves setting predetermined standards for resource quantities and prices needed to produce a service or product. This approach enables organizations to monitor costs through detailed variance reports, allowing proactive responses to discrepancies (Nishimura, 2019). In the hotel sector, standard costs related to room services, food and beverage operations, and other activities provide essential insights into anticipated costs at various volume levels. By establishing benchmarks, hotel management can assess operational efficiency and set realistic financial expectations. Additionally, standard costing serves as a predictive tool for profitability, helping hotels to analyze historical performance and to make informed decisions about resource allocation and pricing strategies (Mihalache & Pantazi, 2014; Raiborn et al., 1993).

Activity-Based Costing (ABC) is an advanced costing methodology that allocates costs to cost objects based on their actual consumption, providing organizations with a precise understanding of resource utilization across activities. This approach is particularly beneficial for firms in competitive environments (Cooper, 1988; Al-Sayed & Dugdale, 2016; Ostadi et al., 2019; Daowadueng, 2022). In the hotel industry, accurate cost attribution enables the identification of inefficiencies and optimization of operational processes, fostering targeted cost-reduction strategies. Research by Pavlatos & Paggious (2009) shows a satisfactory adoption rate of ABC systems among hotels, indicating an increasing recognition of its advantages. Furthermore, implementing ABC can enhance financial performance by aligning cost management practices with stakeholder needs, including those of management and service users (Diavastis et al., 2016). This analysis leads to the proposal of the following hypotheses:

H3a: The extent of absorption costing implementation is a first-order construct of MAPs.

H3b: The extent of variable costing implementation is a first-order construct of MAPs.

H3c: The extent of standard costing implementation is a first-order construct of MAPs.

H3d: The extent of activity-based budgeting implementation is a first-order construct of MAPs.

Profitability analysis is used to measure and evaluate firm performance and is attributed as product profitability analysis (PPA), customer profitability analysis (CPA), and cost-volume and profit (CVP) analysis as these factors are essential for business operations (Foster et al.,1996; Pavlatos & Paggious, 2009; Akmese, 2016). Profitability measures are more needed and perhaps the best indicators to evaluate business performance, especially when uncertainty is high (Hirst, 1983; Nash, 1993; Doyle, 1994; Schulz et al., 2010; Bastian & Muchlish, 2012; Hartmann & Slapnicar, 2012; Buathong & Bangchokdee, 2015; Nishimura, 2019).

Product profitability analysis (PPA) is a crucial method for assessing the profitability of individual products or services relative to their sales, offering insights into the products' contributions to overall financial performance. Market uncertainty can enhance the relevance of PPA as organizations adjust their strategies to changing conditions (Dianati et al., 2016). In the hotel industry, where a diverse range of offerings—such as food and beverages, room service, and catering—exists, conducting thorough PPA is vital. By accurately evaluating each service's profitability, hotel management can make informed decisions regarding product offerings, pricing strategies, and resource allocation, ultimately optimizing financial outcomes and enhancing competitiveness.

Understanding customer profitability analysis (CPA) is particularly crucial for service-oriented companies, as the costs associated with delivering services are significantly influenced by customer behavior (Foster et al., 1996). CPA is crucial where customers are likely to consume multiple services during their stay. In this context, revenues and costs associated with each customer type should be treated as distinct cost objects to facilitate a more comprehensive understanding of customer profitability. This enables hotels to focus their efforts on nurturing relationships with the most profitable customers while optimizing service delivery for varying customer segments. Customer profitability can be assessed through various methodologies, ranging from simple calculations of sales minus direct customer costs, to more complex evaluations such as budgeted lifetime sales minus both direct and indirect costs (Van Raaij et al., 2003). Understanding of customer profitability provides vital information to guide marketing strategies, pricing decisions, and service enhancements.

The Cost-Volume-Profit (CVP) relationship serves as a vital analytical tool for profit planning in the hospitality industry. By categorizing costs into fixed and variable components, CVP enables hotels to understand cost behavior and its impact on profitability (Hansen & Mowen, 2013; Garrison et al., 2021). This understanding is crucial for developing comprehensive profit plans which illustrate the interplay between costs, sales volume, and profit. Analyzing the break-even point and target profit under various operational scenarios allows hotels to ascertain the minimum sales needed to cover costs and explore how different pricing strategies and occupancy levels affect profitability. Additionally, hotels must factor in the number of available rooms and potential revenue streams when crafting their profit plans. This holistic approach empowers hotels to devise strategies that enhance operational efficiency and financial performance, especially in a competitive landscape where profit margins can be thin. Given the necessity of effective resource allocation and strategic planning in this context, CVP analysis is indispensable (Akmese, 2016). Consequently, this the following hypotheses are proposed.

H4a: The extent of product profitability analysis is a first-order construct of MAPs.

H4b: The extent of customer profitability analysis is a first-order construct of MAPs.

H4c: The extent of cost-volume and profit is a first-order construct of MAPs.

2.3 Financial Performance

Performance can be measured through many approaches; however, during times of uncertainty, assessing the ability to survive, through financial performance, is crucial. Non-financial measures are also important but are more difficult to measure. Financial performance (FP) is defined as the extent of financial performance as rated by the accounting managers of the hotels. Indicators related to liquidity, financial risk, asset management efficiency, and profitability components (Wild & Kwok, 2011) are used to measure the financial performance construct of hotels. Financial performance is the most important perspective for the hospitality industry (Abdel-Kader & Luther, 2006; Turuduoglu et al., 2014). Previous studies have also used similar indicators to assess the financial performance of hotel businesses (Sainaghi et al., 2020).

Liquidity performance (LP) assesses an organization's capacity to meet short-term obligations. A key indicator is the liquidity ratio. This ratio reflects how well a company can cover its immediate liabilities using available assets.

Asset Management Efficiency (AE) evaluates how effectively a company utilizes its assets to generate revenue, reflecting operational productivity. AE is commonly assessed through the total asset turnover ratio which reveals how frequently a company can generate sales from its asset base, indicating the efficiency of resource use in driving revenue. Another measure, idle capacity, examines the proportion of unused assets relative to total assets. Low idle capacity suggests that all available assets are actively contributing to income generation, with minimal excess or underused resources weighing down the company.

Financial risk (FR) assesses a company's financial structure and its capacity to repay long-term debt. The total debt-to-total assets ratio, for instance, indicates the extent to which creditors' funds are used to acquire assets, showing the company's reliance on debt. Another important measure, the total debt-to-total equity ratio, highlights the company's solvency, providing insight into the financial risk arising from its financing structure. High ratios suggest greater dependency on debt, which may increase financial vulnerability, while lower ratios reflect a more balanced or equity-driven financial structure.

Profitability-related measures (PP) assess a business's ability to generate profits, providing critical insight into financial performance. This research uses several key metrics to evaluate profitability: Return on total assets gauges how efficiently a business generates profits from its overall asset investment, while return on equity reveals the returns equity holders gain on their invested capital. Gross profit margin assesses profitability per $100 of sales revenue, indicating the efficiency of revenue generation. Operating income to total revenue shows the percentage of revenue earned as operating profit, offering insight into core operational effectiveness. Lastly, the net profit margin measures the portion of sales revenue that remains as net profit after deducting all expenses.

Drawing on the previous review, the following hypotheses are formulated:

H5a: Liquidity performance is a first-order construct of financial performance.

H5b: Asset efficiency is a first-order construct of financial performance.

H5c: Financial risk is a first-order construct of financial performance.

H5d: Profitability performance is a first-order construct of financial performance.

2.4 Direct Effect of Uncertainty on MAPs

Perceived Environmental Uncertainty (PEU) significantly influences the design and functionality of management accounting systems (Sandalgaard, 2012; Dianati et al., 2016). The heightened use of MAPs in hotels during uncertain times underscores their strategic significance in navigating complexity (Pavlatos, 2015). Additionally, PEU positively influences the adoption of MAPs, including budgeting and cost management, as these tools help mitigate uncertainty and inform financial planning (Dianati et al., 2016).

Task uncertainty, which includes task difficulty and variability, often leads to the adoption of MAPs such as zero-based and activity-based budgeting (Hayes & Cron, 1988). Organizations utilize various cost accounting methods—such as absorption and variable costing—to navigate decision-making under task uncertainty (Chong, 2004). Changes in management accounting systems in response to high task variability correlate positively with improved firm performance (William & Seaman, 2002). Customized Management Accounting Practices (MAPs) effectively address the challenges posed by unpredictable tasks, emphasizing their importance for managers in uncertain environments (Hartmann & Slapnicar, 2012).

In high task uncertainty environments, managers increasingly rely on management accounting information, particularly profitability data, to support decision-making and ensure organizational stability (Choe, 1998). In low task uncertainty environments, the use of broad-scope Management Accounting Systems (MAS) can adversely affect decision-making. Excessively detailed financial data may lead to information overload, impairing managerial performance (Chong, 2004). This indicates that while MAPs are crucial in volatile contexts, their effectiveness diminishes in stable settings, necessitating a more selective approach to accounting information. Based on these insights, the following hypothesis is proposed:

H6*:* The level of uncertainty has a direct positive effect on the extent of MAPs implementation.

2.5 Direct Effect of MAPs on Financial Performance

Building on the existing literature, implementation of Management Accounting Practices (MAPs) is anticipated to have a positive impact on financial performance, which is a critical dimension for the hospitality industry (Turuduoglu et al., 2014). Management accounting information is crucial for managers to make informed decisions which improve performance outcomes. Ghasemi et al. (2016) highlight its role in driving organizational performance. For instance, budgeting techniques enhance resource allocation, align operations with strategic goals, and improve financial discipline, essential for profitability in the hospitality sector (Khalifa & Alodhaibi, 2021). Detailed cost information helps service firms identify inefficiencies, optimizing service delivery and profit margins (Pizzini, 2006). Alvarez et al. (2021) confirm significant relationships between specific Management Accounting Practices (MAPs) and hotel performance, particularly return on investment. Additionally, control measures such as profitability metrics positively impact both financial and non-financial performance dimensions (Cengiz et al., 2018), providing insights into operational efficiency and customer satisfaction. In light of these findings, the following hypothesis is developed:

H7: The extent of use of MAPs has a direct positive effect on financial performance.

2.6 Direct Effect of Uncertainty on Financial Performance

Uncertainty plays a pivotal role in shaping business strategies, which, in turn, significantly influence organizational performance. According to Parnell et al. (2012), an organization's success is inherently linked to the external environment in which it operates. Firms facing high levels of uncertainty are often driven to formulate adaptive strategies and may require tailored management accounting information to enhance performance. This need to transform uncertainty into opportunity presents a fundamental challenge for top management (Koseoglu et al., 2013). The degree of uncertainty significantly influences strategic and operational approaches. Shank and Govindarajan (1992) assert that firms in diverse environments must adopt tailored business strategies and management information systems to meet their unique conditions. This emphasizes the need for flexibility in management accounting systems, to enhance organizational performance amid varying environmental uncertainties. Supporting this view, Williams and Seaman (2002) show that adjustments in management accounting practices, especially during high task variability, correlate strongly with improved firm performance. This research highlights the necessity of aligning management accounting with external conditions for optimal strategic decision-making and performance. Based on this analysis, the following hypothesis is proposed:

H8*:* The level of uncertainty has a direct positive effect on financial performance.

2.7 Mediating Effect of MAPs

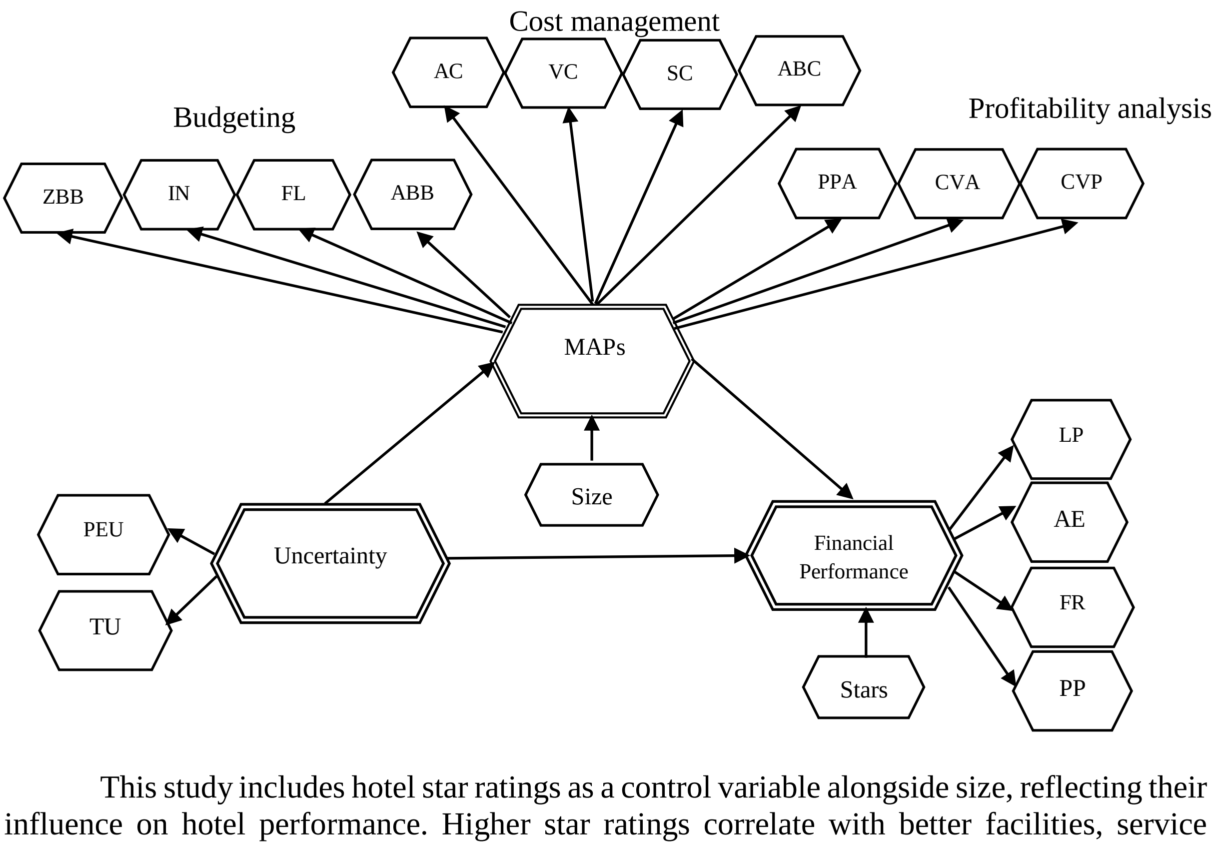
Research by Dianati et al. (2016) shows a positive relationship between uncertainty, Management Accounting Practices (MAPs), and firm performance. Uncertain environments push organizations to adopt MAPs, enhancing management processes and improving performance (Gul & Chia, 1994). Studies by Bangchokdee et al. (2013), as well as Amhalhal and Anchor (2015), support MAPs as mediators between contingency variables and performance. In the hospitality industry, MAPs help hotels navigate crises like economic downturns or pandemics, enabling efficient resource allocation and decision-making in uncertain markets. Accordingly, it would be reasonable to examine the following hypothesis:

H9: The implementation of MAPS is expected to mediate the relationship between business uncertainty and financial performance.

2.8 Control Variables

Hotel size serves as a crucial control variable in examining management accounting practices (MAPs), as highlighted by Merchant (1981). Size is an essential contingency factor linked to stable organizational characteristics. Larger hotels typically have more resources and advanced management capabilities, enabling them to implement MAPs that require significant time and effort (Chenhall & Langfield-Smith, 1998; Hoque & James, 2000; Hussain & Hoque, 2002). Employee count is the most common metric used to assess hotel size in management accounting research, especially within the framework of contingency theory (Chenhall, 2003). Larger hotels tend to adopt formal accounting practices, including budgeting and performance evaluation systems, which are increasingly relevant in the context of heightened financial risks due to the COVID-19 pandemic (Coytea et al., 2022). As a result, these hotels may utilize a broader range of practices, such as variable costing and total quality management, to protect their financial performance in uncertain environments (Alvarez et al., 2021).

Figure 1 A Proposed Conceptual Model



This study includes hotel star ratings as a control variable alongside size, reflecting their influence on hotel performance. Higher star ratings correlate with better facilities, service quality, and financial outcomes, impacting customer satisfaction (Nunkoo et al., 2020; Wang et al., 2015).

The design of the conceptual model in this survey study, was developed based on previous literature, as shown in Figure1.

3. RESEARCH DESIGN

3.1 Population and Sample

This survey based research utilized a quantitative approach aiming to collect data from practitioners in the area of management accounting practices in the hotel business. The calculation of sample size for the GSCA was introduced by Cho et al.'s (2020), using the three levels of component correlations (r = 0, 0.2, and 0.4). With specific cutoff criteria, the standardized root mean square residual (SRMR) < 0.80 and the goodness-of-fit index (GFI) ≥ 0.93, it is suggested that a minimum sample size of 200 is appropriate to reduce the Type I and Type II error rate. The current research obtained data from 261 respondents including accounting managers and equivalents; thus, the data were deemed sufficient.

3.2 Variable Measurement

The questionnaire used in this study consisted of five sections: demographic data, hotel profile, business uncertainty, management accounting practices (MAPs), and financial performance. Respondents provided their perceptions of various constructs, with composite-based measurement models applied.

Perception of perceived uncertainty was taken from Lee (2009). The task uncertainty measurement was adopted from Chenhall (2003), and Mollanazari & Abdolkarimi (2012) consisting of task variability and task difficulty. Company size was measured by the number of employees, as a unidimensional construct, and as suggested by Chenhall (2003). The number of stars received by the hotels was also taken as a unidimensional construct. These single measures can be classified as either factor-based or composite-based measures (Leruksa et al., 2023).

Generalized Structured Component Analysis (GSCA) was employed for second-order confirmatory composite analysis, as it fits the proposed conceptual framework better than Integrated Generalized Structured Composite Analysis (IGSCA) (Hwang et al., 2023; Leruksa et al., 2023). The current study treated company size and the number of stars as composite-based measures not factor-based measures, as we applied GSCA. GSCA can perform second-order confirmatory composite analysis, unlike IGCSA, which has limited capabilities. Therefore, GCSA was deemed the most suitable approach for data analysis (Hwang et al., 2023).

Previous empirical studies (Foster et al., 1996; Abdel-Kader & Luther, 2006; Cadez & Guilding, 2008; Pavlatos & Paggious, 2009; Angelakis et al., 2010; Mannetta et al., 2015; Bataineh, 2018; Petera & Soljakova, 2020) suggested that components of MAPs could be categorized into three primary emergent constructs, including: 1) budgeting practices 2) cost management methods; and 3) profitability analysis. Business uncertainty is composed of perceived environmental uncertainty and task uncertainty, while MAPs can be measured by appropriate questions operationally defined from the literature review on a 7-point Likert scale, ranging from 1 (strongly disagree/lowest level of adoption) to 7 (strongly agree/highest level of adoption).

Financial performance, as a composite construct (Borsboom et al., 2003), is measured through liquidity, financial risk, asset management efficiency, and profitability. These indicators, essential for hotels, align with previous studies (Sainaghi et al., 2020; Khalifa & Alodhaibi, 2021). Respondents rated performance against targets using an 11-point scale. Construct validity and reliability were confirmed through expert review and pilot testing, ensuring robust measurement criteria. Reliability and validity were met for all indicators after data collection and analysis.

3.3 Data Collection

This study employed a survey-based research methodology, using primary data from hotels across Thailand. Approved by Ubon Ratchathanee University's Research Ethics Committee (REC-21/2565), 560 questionnaires were sent to hotel accounting managers between January and July 2022, during the final phase of the COVID-19 restrictions. Many hotels faced uncertainty due to the pandemic, making management accounting practices (MAPs) potentially valuable during this period. Respondents were randomly selected from a Ministry of Commerce list, yielding a 46.61% response rate. This is considered acceptable, aligning with Hiebl and Richter's (2018) findings of 38% in management accounting research.

Reponses from early and late returns can be compared with the latter returns assumed to be similar to earlier responses (Armstrong & Overton, 1977). A t-test comparison was conducted to measure non-response bias resulting in indications that a non-response bias did not exist between the early and late responses. The responses from the first mailing group were compared with responses received from the second mailing group based on demographic information, including the type of hotels, number of employees, number of rooms, and length of business operations. The results showed that there was no statistically significant difference between the early and late respondents with a 95% confidence level (Armstrong & Overton, 1977). Therefore, non-response bias was not a considerable issue in this study.

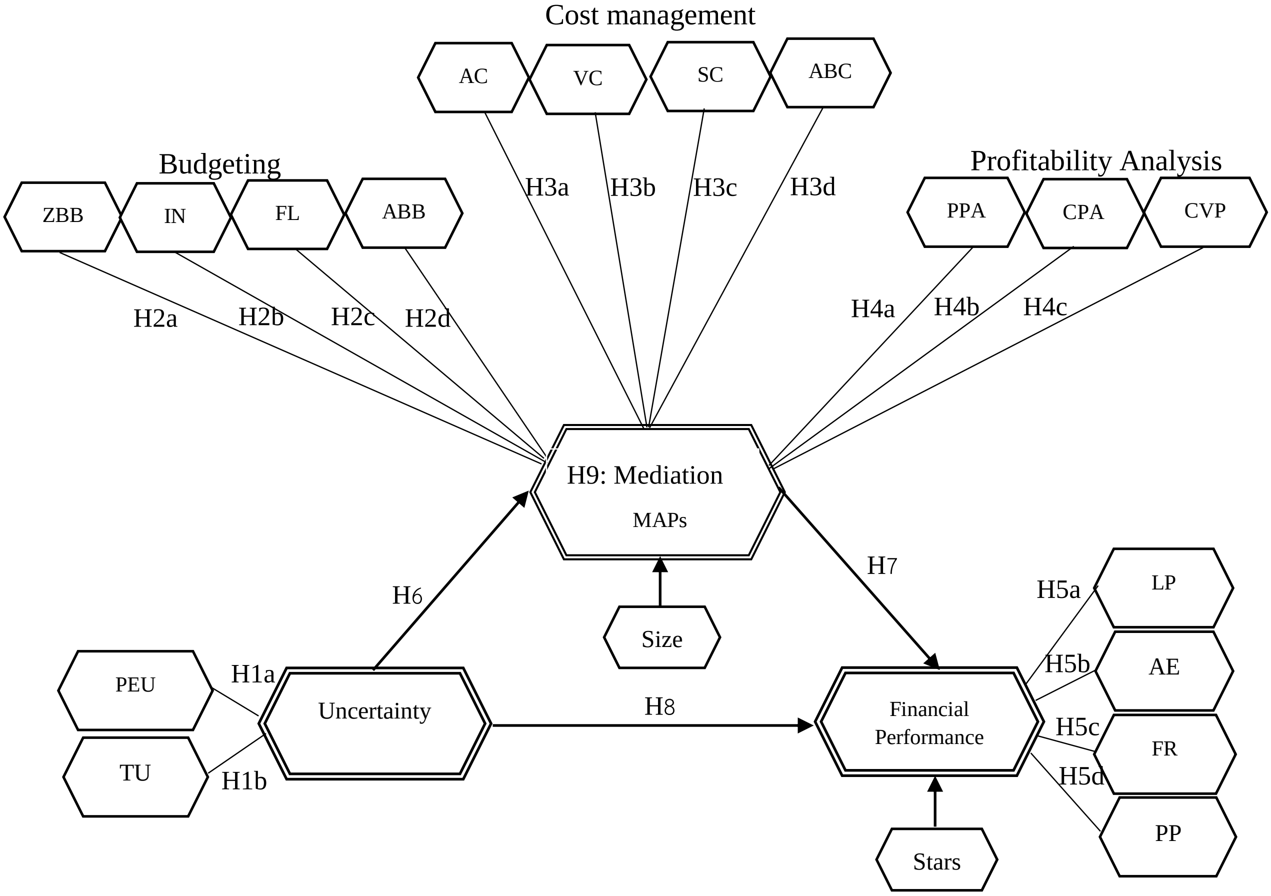
3.4. Data Analysis through Generalized Structural Composite Analysis (GSCA)

Component-based structural equation modeling (SEM) was employed to test the conceptual framework, utilizing a composite-based measurement model that specifies the constructs and components (Chuchuen & Chanvarasuth, 2022; Hwang et al., 2023; Chumwichan et al., 2023; Senachai et al., 2024). In this context, a construct is represented by a component, assuming it summarizes observed variables functioning as a single entity. These observed variables, termed composite indicators, do not exhibit a specific covariance pattern, as their covariation is not driven by the construct itself (Hwang et al., 2023). Composite indicators may share thematic or conceptual dimensionality, adhering to the operational definition of the given construct (Sarstedt et al., 2016).

The proposed conceptual model in Figure 2 defines each construct as an index of observed variables. This approach utilizes a component-based Structural Equation Model (SEM) to establish a correlational pattern among observed variables, creating constructs as weighted composites. Both Partial Least Squares (PLS) and Generalized Structural Component Analysis (GSCA) offer methods for obtaining accurate results within this framework (Cho et al., 2022). PLS performs regression independently with each structural measurement model, relying on limited information. In contrast, GSCA employs a full-information method that optimizes a single criterion, enabling simultaneous estimation of all parameters for more dependable estimates and lower standard errors (Hwang & Cho, 2020). In management accounting practices, various components collaborate to form an integrative management control system.

This study employed GSCA-SEM to address potential biases arising from components (Hwang et al., 2017). Figure 2 illustrates that the model comprises seventeen first-order components (excluding size and stars), three second-order components, and 72 observed variables or indicators (excluding size and stars). The first-order components included Perceived environmental uncertainty, associated with 7 indicators; Task uncertainty, with 7 indicators; Zero-based budgeting, with 5 indicators; Incremental budgeting, with 5 indicators, Flexible budgeting, with 4 indicators; Activity-based costing, with 4 indicators; Absorption costing, with 5 indicators; Variable costing, with 5 indicators; Standard costing, with 5

Figure 2 The Proposed Conceptual Model Displayed Via the GSCA Framework



Note. a single hexagon denotes a first-order component; a double hexagon denotes a second-order component.

indicators; Activity-based costing, with 5 indicators; Product profitability analysis, with 4 indicators; Customer profitability analysis, with 4 indicators; Cost-volume and profit relationship, with 3 indicators; Liquidity, with 4 indicators; Asset efficiency, with 2 indicators; Financial risk, with 2 indicators; and Profitability performance, with 5 indicators. The second-order components were Uncertainty, MAPs, and Financial Performance. Specifically, special attention in this research was also paid to mediation effects, which is always advisable in explorative models as a standard practice (Nitzl et al., 2016).

4. RESULTS OF THE STUDY

The survey data showed that 40.6% of respondents had over 15 years of experience, while 91.2% held managerial roles in accounting. Most hotels (85.1%) were independently managed, with 46.8% having registered capital of 5-15 million baht, and 74.4% employing 30-100 staff. Additionally, 68.6% had 50-100 rooms, and 43.3% had assets under 100 million baht. Four-star hotels comprised 40.6% of the sample.

4.1 Reliability and Validity Measurement

Data distribution was assessed, with the skewness and kurtosis values found to be acceptable as the ranges were between -2 and +2 (Trochim & Donnelly, 2006; Gravetter & Wallnau, 2014). Construct validity was assessed through the examination of convergent validity and discriminant validity methodology. The proportion of variance explained (PVE), Cronbach's alpha (α), and Dillon-Goldstein's rho (ρ) or the composite reliability values (Hwang et al., 2023) were inspected. As in principal component analysis, the PVE indicates the average extent to which the total variance in a set of composite indicators is confirmed by its corresponding components. It is supposed that a single component enables explanation of 70% or more (PVE ≥ .70) of the total variance in a set of composite indicators, suggesting that the measurement is unidimensional (Jolliffe & Cadman, 2016), while the values of α and ρ should be above .70 (α > .70; ρ > .70) (Hair et al., 2020; Hwang et al., 2023).

As shown in Table 1, all components met the required criteria and dimensionality, with the number of eigenvalues equal to 1 for each set of indicators per component. This suggests that one component may be considered for the set of indicators (Hwang et al., 2023). In addition, it is indispensable to examine the statistical significance of weights for each indicator (Hwang et al., 2023).

Table 1 Reliability and Convergent Validity

Component	PVE	Alpha	Rho
Perceived environmental uncertainty (PEU)	0.771	0.874	0.953
Task uncertainty (TU)	0.782	0.903	0.962
Zero-based budgeting(ZBB)	0.785	0.822	0.875
Incremental budgeting (IN)	0.731	0.740	0.780
Flexible budgeting (FL)	0.761	0.821	0.884
Activity-based budgeting (ABB)	0.741	0.797	0.870
Absorption costing (AC)	0.730	0.852	0.894
Variable costing (VC)	0.739	0.913	0.934
Standard costing (SC)	0.739	0.911	0.934
Activity-based costing (ABC)	0.703	0.892	0.921
Product profitability analysis(PPA	0.823	0.927	0.949
Customer profitability analysis(CPA)	0.874	0.952	0.965
Cost-volume and profit(CVP)	0.751	0.781	0.870
Liquidity performance (LP)	0.748	0.887	0.922
Asset efficiency(AE)	0.928	0.922	0.963
Financial risk(FR)	0.761	0.688	0.864
Profitability performance(PP)	0.981	0.995	0.996
Size	1	n/a	1
Stars	1	n/a	1

Note. all component dimensionality = 1, n/a = not available with one a single indicator

4.2 Discriminant Validity

Analysis of the heterotrait-monotrait (HTMT) values was conducted to ensure the identification of measurements within the model. The differences between each construct were measured by discriminant validity (values of HTMT), assessing multicollinearity of each construct to reduce redundancy (Henseler et al., 2015). HTMT was expected to be below 0.85 in a strict sense (Henseler et al., 2015) and below 0.90 in an acceptable sense (Gold et al., 2001; Teo et al., 2008). As presented in Table 2, HTMT values generally fell within the criteria.

Table 2 HTMT Values of Components

	PEU	TU	ZBB	IN	FL	ABB	AC	VC	SC	ABC	PPA	CPA	CVP	LP	AE	FR	PP
PEU	1																
TU	0.163	1															
ZBB	0.088	0.177	1														
IN	0.265	0.106	0.134	1													
FL	0.219	0.247	0.066	0.015	1												
ABB	0.261	0.14	0.484	0.445	0.027	1											
AC	0.419	0.099	0.388	0.203	0.135	0.615	1										
VC	0.419	0.021	0.334	0.471	0.114	0.61	0.719	1									
SC	0.377	0.013	0.54	0.078	0.097	0.718	0.847	0.85	1								
ABC	0.264	0.008	0.489	0.411	0.027	0.836	0.682	0.585	0.676	1							
PPA	0.282	0.15	0.663	0.074	0.012	0.786	0.679	0.608	0.835	0.667	1						
CPA	0.276	0.236	0.476	0.096	0.142	0.412	0.356	0.214	0.382	0.362	0.515	1					
CVP	0.31	0.062	0.707	0.16	0.016	0.891	0.783	0.649	0.886	0.761	0.515	0.69	1				
LP	0.143	0.159	0.264	0.287	0.08	0.104	0.178	0.092	0.086	0.104	0.055	0.188	0.112	1			
AE	0.279	0.171	0.521	0.242	0.086	0.154	0.256	0.241	0.351	0.154	0.2	0.113	0.273	0.808	1		
FR	0.43	0.482	0.162	0.496	0.142	0.157	0.256	0.128	0.134	0.157	0.028	0.203	0.18	0.828	0.666	1	
PP	0.173	0.194	0.481	0.328	0.117	0.244	0.25	0.273	0.336	0.244	0.232	0.062	0.338	0.709	0.823	0.677	1

A collinearity test for assessing discriminant validity can be relevant to both factor-based and component-based constructs (Rasoolimanesh et al., 2017). The variance inflation factor (VIF) predictor for uncertainty, management accounting practices, and financial performance was between 1.047 and 1.175, and therefore below 5, indicating the absence of significant multicollinearity issues (Hair et al., 2011). The HTMT values for the components are presented in Table 2. However, values of HTMT for activity-based budgeting, absorption costing, variable costing, and standard costing, appear to be high but they are in the predetermined ranges. A possible explanation for this is that each management accounting practice is, to some extent, interdependent. For instance, firms use cost information for many purposes such as budgeting, profit planning, and performance evaluation.

4.3 Structural Equation Modeling

4.3.1 Measurement Model

The GSCA was utilized to assess the model coefficients and overall goodness of fit. The FIT value demonstrates that the comprehensive model accounts for 76.6% of the variance (FIT = .766). Furthermore, the FITs value indicates that the structural model has explanatory power of 56.2% of the variance (FITs = .562). Additionally, the FITm value reveals that the measurement model explains 71.5% of the variance (FITm = .715). The standardized root mean square residual (SRMR) is .013, and the goodness-of-fit index (GFI) is .942, suggesting an acceptable fit (SRMR < .08; GFI ≥ .93) (Cho et al., 2022).

The measurement model presented in Table 3 shows that all indicator weights and loadings are statistically significant based on 95% confidence intervals. Consequently, all hypotheses regarding the first-order measurement for each component, including H1a-H1b, H2a-H2d, H3a-H3d, H4a-H4c, H5a-H5d were supported. In this regard, it is obvious that all indicators were found to have statistically significant weight (w) and loading (λ) values ((all values in 95% CI column are more than zero) for uncertainty, budgeting practices, cost management and financial performance based on 95% confidence intervals or at the the .05 significance level.

Table 3 Estimates of Weights, Loadings, and their 95% Confidence Intervals for the First-Order Constructs

Component	Indicator	Weights				Loadings			
		Estimate	SE	95%CI		Estimate	SE	95%CI	
Perceived Environmental Uncertainty (PEU)	PEU1	0.17	0.01	0.152	0.191	0.717	0.053	0.594	0.799
	PEU2	0.19	0.011	0.172	0.217	0.717	0.045	0.59	0.783
	PEU3	0.212	0.018	0.176	0.255	0.791	0.026	0.718	0.829
	PEU4	0.149	0.014	0.124	0.174	0.719	0.03	0.652	0.766
	PEU5	0.171	0.01	0.151	0.188	0.707	0.036	0.621	0.757
	PEU6	0.227	0.017	0.201	0.276	0.837	0.021	0.783	0.876
	PEU7	0.197	0.011	0.177	0.218	0.792	0.039	0.7	0.858
Task Uncertainty (TU)	TU1	0.152	0.004	0.147	0.16	0.809	0.026	0.76	0.85
	TU2	0.143	0.009	0.128	0.16	0.911	0.014	0.878	0.928
	TU3	0.201	0.012	0.176	0.226	0.942	0.007	0.927	0.957
	TU4	0.166	0.005	0.157	0.178	0.876	0.022	0.818	0.909
	TU5	0.201	0.009	0.181	0.213	0.914	0.01	0.892	0.929
	TU6	0.132	0.01	0.118	0.154	0.878	0.019	0.835	0.911
	TU7	0.132	0.008	0.12	0.148	0.854	0.028	0.792	0.894

Table 3 (Continued)

Component	Indicator	Weights				Loadings			
		Estimate	SE	95%CI		Estimate	SE	95%CI	
Zero-Based Budgeting (ZBB)	ZBB1	0.282	0.014	0.254	0.312	0.772	0.029	0.718	0.816
	ZBB2	0.267	0.021	0.231	0.303	0.778	0.039	0.689	0.837
	ZBB3	0.291	0.015	0.265	0.321	0.729	0.036	0.644	0.798
	ZBB4	0.252	0.016	0.225	0.29	0.835	0.018	0.799	0.877
	ZBB5	0.218	0.02	0.173	0.256	0.701	0.039	0.615	0.753
Incremental Budgeting (IN)	IN1	0.209	0.066	0.061	0.331	0.415	0.135	0.107	0.65
	IN2	0.377	0.026	0.332	0.429	0.816	0.033	0.744	0.879
	IN3	0.375	0.02	0.327	0.405	0.801	0.04	0.699	0.85
	IN4	0.313	0.021	0.268	0.347	0.675	0.052	0.562	0.752
	IN5	0.199	0.055	0.059	0.291	0.473	0.118	0.183	0.655
Flexible Budgeting (FL)	FL1	0.303	0.011	0.285	0.325	0.805	0.026	0.744	0.845
	FL2	0.344	0.02	0.308	0.389	0.904	0.015	0.866	0.928
	FL3	0.338	0.014	0.309	0.363	0.899	0.033	0.812	0.937
	FL4	0.23	0.018	0.196	0.264	0.609	0.056	0.51	0.7
Activity-Based Budgeting (ABB)	ABB1	0.14	0.028	0.086	0.195	0.422	0.085	0.247	0.593
	ABB2	0.354	0.015	0.329	0.396	0.885	0.018	0.851	0.918
	ABB3	0.263	0.018	0.226	0.302	0.859	0.027	0.806	0.902
	ABB4	0.433	0.025	0.384	0.481	0.929	0.01	0.907	0.945
Absorption Costing (AC)	AC1	0.246	0.017	0.214	0.278	0.818	0.03	0.748	0.873
	AC2	0.253	0.02	0.205	0.289	0.819	0.031	0.75	0.876
	AC3	0.271	0.024	0.217	0.315	0.824	0.029	0.764	0.873
	AC4	0.168	0.018	0.129	0.204	0.685	0.043	0.581	0.754
	AC5	0.311	0.024	0.263	0.354	0.813	0.029	0.748	0.856
Variable Costing (VC)	VC1	0.191	0.013	0.165	0.217	0.873	0.019	0.836	0.902
	VC2	0.193	0.014	0.171	0.225	0.876	0.022	0.828	0.919
	VC3	0.248	0.014	0.22	0.275	0.874	0.014	0.842	0.894
	VC4	0.208	0.01	0.188	0.226	0.805	0.036	0.712	0.857
	VC5	0.323	0.012	0.303	0.348	0.869	0.017	0.833	0.899
Standard Costing (SC)	SC1	0.252	0.012	0.232	0.275	0.87	0.011	0.845	0.887
	SC2	0.23	0.013	0.212	0.263	0.896	0.01	0.876	0.917
	SC3	0.236	0.015	0.207	0.265	0.909	0.011	0.886	0.927
	SC4	0.159	0.011	0.136	0.181	0.804	0.04	0.721	0.893
	SC5	0.285	0.009	0.27	0.302	0.812	0.039	0.734	0.893
Activity-Based Costing (ABC)	ABC1	0.185	0.018	0.151	0.222	0.878	0.018	0.833	0.909
	ABC2	0.354	0.022	0.318	0.392	0.911	0.011	0.889	0.934
	ABC3	0.195	0.014	0.177	0.231	0.893	0.013	0.867	0.921
	ABC4	0.182	0.011	0.158	0.2	0.797	0.044	0.708	0.861
	ABC5	0.283	0.009	0.264	0.305	0.695	0.046	0.609	0.806
Product Profitability Analysis (PPA)	PPA1	0.236	0.008	0.215	0.25	0.871	0.026	0.828	0.919
	PPA2	0.329	0.019	0.294	0.374	0.957	0.006	0.948	0.97
	PPA3	0.262	0.018	0.217	0.291	0.964	0.005	0.955	0.974
	PPA4	0.274	0.014	0.253	0.303	0.831	0.028	0.765	0.878
Customer Profit Analysis (CPA)	CPA1	0.301	0.012	0.28	0.327	0.913	0.012	0.884	0.934
	CPA2	0.292	0.011	0.268	0.316	0.956	0.008	0.937	0.97

Table 3 (Continued)

Component	Indicator	Weights				Loadings			
		Estimate	SE	95%CI		Estimate	SE	95%CI	
	CPA3	0.218	0.023	0.169	0.255	0.944	0.014	0.915	0.969
	CPA4	0.26	0.021	0.221	0.299	0.927	0.015	0.896	0.953
Cost-Volume-Profit (CVP)	CVP1	0.139	0.04	0.041	0.216	0.31	0.123	0.048	0.536
	CVP2	0.348	0.017	0.31	0.377	0.9	0.017	0.856	0.926
	CVP3	0.316	0.024	0.264	0.356	0.942	0.01	0.927	0.962
Liquidity Performance (LP)	LP1	0.27	0.016	0.24	0.298	0.867	0.021	0.829	0.91
	LP2	0.247	0.019	0.212	0.286	0.889	0.018	0.849	0.921
	LP3	0.292	0.015	0.263	0.327	0.779	0.043	0.676	0.85
	LP4	0.347	0.017	0.311	0.379	0.918	0.01	0.9	0.94
Asset Efficiency (AE)	AE1	0.501	0.018	0.468	0.535	0.961	0.005	0.95	0.969
	AE2	0.537	0.017	0.504	0.567	0.966	0.005	0.953	0.975
Financial Risk (FR)	FR1	0.609	0.022	0.575	0.658	0.89	0.016	0.864	0.93
	FR2	0.535	0.02	0.496	0.579	0.855	0.024	0.797	0.904
Profitability Performance (PP)	PP1	0.233	0.007	0.22	0.247	0.981	0.006	0.969	0.992
	PP2	0.216	0.021	0.171	0.255	0.995	0.001	0.992	0.996
	PP3	0.143	0.022	0.099	0.186	0.99	0.002	0.985	0.993
	PP4	0.229	0.023	0.171	0.256	0.992	0.002	0.989	0.995
	PP5	0.19	0.024	0.156	0.251	0.993	0.001	0.991	0.995
Size	Size	1	0	1	1	1	0	1	1
Stars	STARS	1	0	1	1	1	0	1	1

Table 4 Estimates of Weights, Loadings, and their 95% Confidence Intervals for the Second-Order Constructs

Component	Indicator	f^2	Weights				Loadings			
			Estimate	SE	95%CI		Estimate	SE	95%CI	
Uncertainty	PEU	2.065	0.727	0.063	0.67	0.917	0.754	0.036	0.665	0.810
	TU	0.943	0.579	0.111	0.359	0.638	0.883	0.018	0.843	0.911
Management Accounting Practices (MAPs)	ZBB	0.686	0.127	0.009	0.11	0.143	0.819	0.027	0.754	0.860
	IN	0.075	0.067	0.014	0.037	0.093	0.636	0.076	0.459	0.757
	FL	0.001	0.02	0.015	0.047	0.009	0.804	0.033	0.733	0.853
	ABB	2.227	0.145	0.008	0.129	0.16	0.792	0.032	0.718	0.846
	AC	1.685	0.138	0.008	0.12	0.159	0.859	0.022	0.810	0.894
	VC	1.612	0.111	0.008	0.094	0.124	0.858	0.022	0.812	0.903
	SC	4.015	0.203	0.013	0.181	0.23	0.835	0.026	0.781	0.886
	ABC	1.791	0.125	0.008	0.111	0.144	0.774	0.035	0.703	0.840
	PPA	3.219	0.11	0.012	0.088	0.136	0.906	0.016	0.874	0.935
	CPA	0.409	0.119	0.013	0.089	0.14	0.935	0.012	0.908	0.957
	CVP	4.181	0.16	0.011	0.139	0.186	0.717	0.050	0.610	0.808
Financial Performance (FP)	LP	2.766	0.217	0.024	0.175	0.277	0.863	0.023	0.814	0.905
	AE	5.268	0.338	0.022	0.299	0.385	0.964	0.005	0.952	0.972
	FR	1.687	0.307	0.018	0.259	0.338	0.873	0.020	0.831	0.917
	PP	4.575	0.288	0.02	0.242	0.328	0.990	0.002	0.985	0.994

As shown in Table 4, the weight and loading estimates and their 95% confidence intervals for the second-order constructs were also significant (all values in 95% CI column are more than zero). GSCA also provides an effect size measure such as f2 for each component (Hwang et al., 2023). These results confirm that perceived environmental and task uncertainty appear to be appropriate components of the uncertainty construct. Second, zero-based budgeting, incremental budgeting, flexible budgeting, and activity-based budgeting, can collectively measure comprehensive budgeting practices in the firms. Third, actual costing method, variable costing approach, standard costing implementation, and activity-based costing, can reflect effective cost management for hotel business operations. Fourth, performance evaluation and measurement through product profitability analysis, customer profitability analysis, and cost-volume-and profit analysis, are also appropriate for hotel operations. All accounting practices mentioned above represent management accounting practices. Lastly, financial performance can be properly measured by liquidity, asset efficiency, financial risk and profitability ratios. It would be reasonable to conclude that the composite-based measurement model is well aligned with the reviewed literature.

4.3.2 Hypothesis Testing

Results for the path coefficients, as shown in Table 5, support H6 and H8, as the level of uncertainty facing the hotels was found to have a statistically significant positive influence on using management accounting practices and the ability to achieve financial performance, with coefficients of 0.254 and 0.279, respectively. H7 was also supported, as the adoption of management accounting practices as integrative manners was found to have a statistically significant positive influence on financial performance, yielding a coefficient of 0.203. Regarding control variables, business size was significantly and positively related to management accounting practices (coefficient = 0.194). However, the star rating of the hotel was not a significant determinant of firm performance.

Table 5 Estimates of Path Coefficients, their 95% Confidence Intervals, and Fit Indices

	Estimate	SE	95%CI		F^2	R^2
UNCERTAINTY→MAP	0.254*	0.066	0.123	0.383	0.069	0.123
UNCERTAINTY→FP	0.279*	0.060	0.166	0.380	0.085	0.176
MAP→FP	0.203*	0.074	0.034	0.327	0.043	
SIZE→MAP	0.194*	0.056	0.074	0.286	0.039	
STARS→FP	0.084	0.069	-0.038	0.233	0.007	

FIT = .766, FITs = .562, FITm = .715, GFI = .942, SRMR = .013

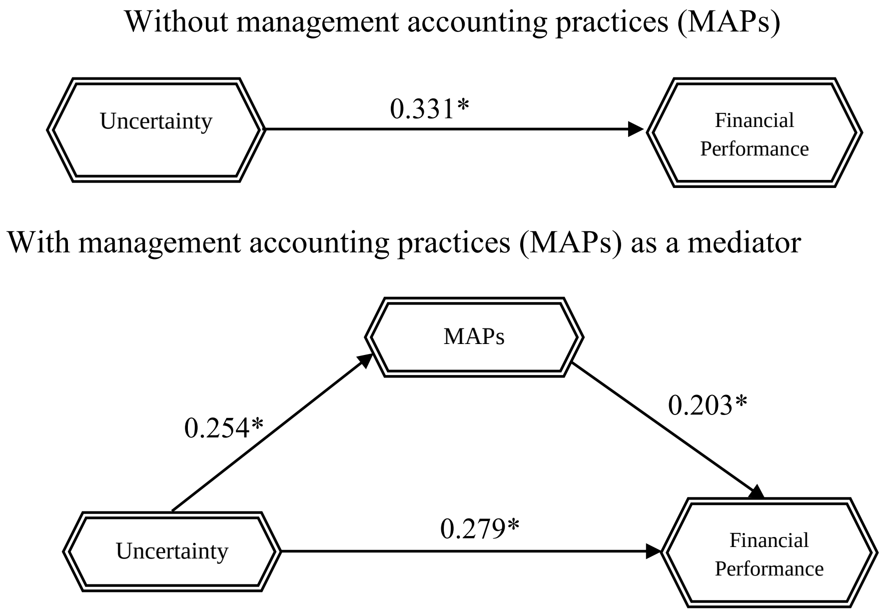
Note. * denotes a regression coefficient statistically significant at the .05 level

In order to examine the mediating effect of management accounting practices on the relationship between uncertainty and financial performance, the total effect of uncertainty on financial performance is revealed as shown in Figure 3.

The indirect effect of contingency-based situations on financial performance through the implementation of various management accounting practices was found to have a statistically significant positive influence, yielding a coefficient of 0.052 (0.254 x 0.203). Additionally, the total effect of uncertainty on financial performance was found to have a statistically significant positive influence, yielding a coefficient of 0.331 (0.279+0.052).

The analysis results, show that a partial mediation effect of management accounting practices between uncertainty and the financial achievement of the hotel operations was observed; therefore, H9 was supported.

Figure 3 Path Coefficients



* denotes statistical significance at the .05

5. OVERALL DISCUSSIONS

When hotels face high uncertainty from the business environment and task variability, they are likely to devise superior business strategies to enhance financial performance. It would be reasonable to assume that when things are more challenging, business people are becoming more motivated to make worse situations better by improving financial performance for long-term survival and growth. In addition, uncertainty also reshapes effective MAPs, signaling that MAPs might be able to mitigate uncertainty, by providing clear and relevant information for various managers in hotels, in order to enhance the quality of decisions and achieve higher financial performance. Management accounting practices are partially found to mediate the relationship between uncertainty and financial performance, implying there may be other factors that could mediate this effect such as business strategy, resilience and human resource management.

In uncertain situations, hotels are prone to develop superior strategies to strive for superior performance through developing and implementing effective management accounting practices (budgeting, cost management, and profitability analysis) in order to achieve higher financial performance. Regarding empirical analysis, it is revealed that activity-based budgeting (ABB) is the most important component of budgeting practices (considered from f^2 as shown in Table 4). This budgeting tool is more powerful since it enables managers to calculate, monitor, and manage revenues and expenses by each activity and could be useful in managing shared service departments by providing deeper insights to their capacity utilization and resource allocation (Moustafa, 2005). ABB is, therefore, important for hotel operations (Pavlatos & Paggious, 2009; Korkmaz & Afsar, 2021).

Regarding cost management, this research is consistent with Daowadueng (2022) who found that perceived uncertainty could lead to the extent of use of several advanced costing methods in order to manage business costs. Similarly, Ostadi et al. (2019) found that in uncertain situations, a business will use a new cost system to receive more accurate information, enabling executives to make better decisions. According to our analysis, the most important component among cost management approaches is standard costing (SC) systems (considered from f^2 as shown in Table 4) which involve setting standards for both quantity and price of resources to provide food, beverages, number of rooms and staff. Standard costing is used for both planning and controlling operations of hotels. It enables hotels to provide relevant feedback regarding costs and revenues for better improvement under uncertainty (Raiborn et al., 1993; Mihalache & Pantazi, 2014; Nishimura, 2019).

In profitability analysis, hotels prioritize cost-volume-profit (CVP) analysis (considered from f^2 as shown in Table 4), a critical tool in profit planning which enables a deeper understanding of cost behavior patterns. CVP aids in assessing how shifts in activity levels impact costs and profitability, thus supporting more accurate financial forecasting (Hansen & Mowen, 2013; Garrison et al., 2021). By identifying the relationships between fixed and variable costs, CVP allows for the development of realistic profit plans, fostering logical and feasible resource allocation. Furthermore, CVP enables hotels to determine the break-even point and set target profit levels across different operational scenarios, providing a basis for strategic decision-making aimed at achieving financial sustainability.

With respect to the association between MAPs and the financial performance of hotels, the implementation of integrative management accounting practices leads to higher financial performance consistent with Sandalgaard (2012) and Turner et al. (2017). For instance, cost management also reveals a significant impact on financial performance aligning with Garrison et al.'s study (2021). The implementation of flexible budgets is also essential for financial performance, as hotels could have appropriate reports in a dynamic business environment, especially for performance and evaluation. A flexible budget shows the cost, revenue, and profit that should have been incurred at the actual level of operating activity (Garrison et al., 2021).

Larger hotels are more likely to implement formal management accounting practices, aligning with Chenhall's (2003) assertion that business size impacts such practices. Specifically, sizeable organizations utilize product profitability analysis as a formal control mechanism (Sharma, 2002). Additionally, Coytea et al. (2022) indicate that larger businesses adopt more complex budgeting practices. With multi-functional services, larger hotels require formal control systems to coordinate data effectively, enabling executives to make informed decisions based on diverse information sets.

Unexpectedly, hotel star ratings do not positively impact financial performance, especially during the high uncertainty of COVID-19. This suggests that performance metrics were less influenced by the hotel's reputation or service quality in such conditions. However, this finding may not hold under normal circumstances, as literature indicates that varying star ratings correlate with different financial outcomes due to their service standards and resources, which affect customer satisfaction and overall performance (Nunkoo et al., 2020).

6. CONTRIBUTIONS AND CONCLUSIONS

6.1 Theoretical Contributions

This research makes a significant theoretical contribution to the field of contingency-based management accounting by providing relevant insights that enhance our understanding of how specific Management Accounting Practices (MAPs) can be effectively designed to improve firm performance. The findings underscore the richness of contingency theory in informing the alignment of MAPs with varying organizational contexts, particularly in relation to perceived environmental uncertainty and task uncertainty. By examining the interplay between these uncertainties and their influence on the adoption of MAPs, this study highlights the critical importance of ensuring a strategic fit between the external environment and the internal structure of the firm. This alignment is essential for the effective implementation of MAPs, as it enables organizations to respond adaptively to changing market conditions and operational challenges. Furthermore, the relevance of contingency theory remains pronounced in the context of the COVID-19 pandemic. The findings suggest that the principles of contingency theory are not only applicable but may be even more crucial in times of crisis, as firms navigate the complexities introduced by unprecedented uncertainties. This research thus reaffirms the enduring significance of contingency perspectives in the evolving landscape of management accounting.

Contingency theory asserts that Management Accounting Practices (MAPs) should be specifically tailored to align with a firm's unique environment. This alignment, or "fit," can be empirically tested through its effect on financial performance. The findings from this research strongly support the validity of the contingency-based management accounting paradigm, emphasizing that strategic alignment between MAPs and the organizational context is essential for achieving optimal results. Additionally, MAPs influence financial performance directly and act as mediators between environmental uncertainty and financial outcomes. This mediating role highlights the advantages of implementing MAPs during uncertain periods, enhancing managerial decision-making and operational efficiency. By improving understanding of costs and performance metrics, MAPs enable organizations to navigate challenges and seize opportunities, ultimately boosting financial performance. This research underscores the importance of integrating contingency theory into management accounting practices, demonstrating how effectively designed MAPs add significant value in uncertain environments.

6.2 Managerial Contributions for Policy Makers

This research provides advantages to those firms who are suffering from uncertainty due to COVID-19 or future unforeseen uncertainties. Knowledge from this research, can enable hotel businesses to devise strong and appropriate financial controls through management accounting practices, thereby dampening the impacts of uncertainty on financial performance. The research exhibits integrative management accounting practices used during COVID-19 (considered as one of high uncertainty period for hotels) to increase financial performance. For other forms of uncertainty which may come in the future, these management accounting practices might be implemented to mediate the effect of uncertainty on financial performance.

For policymakers and executives, this perspective emphasizes the importance of integrating MAPs into strategic planning and decision-making processes, enabling organizations to better navigate volatile environments. While this study specifically examines the hotel industry, its insights are broadly applicable to other sectors facing uncertain conditions. By leveraging MAPs effectively, businesses can enhance their capacity to adapt to change, thereby ensuring long-term financial stability and improved performance. This proactive approach can empower organizations to not only survive but to thrive in challenging circumstances.

6.3 Conclusions

This paper investigates the relationship between business uncertainty and the use of management accounting practices (MAPs) in improving financial performance, using data from hotels in Thailand during COVID-19. The findings suggest that uncertainty drives the broader use of MAPs, which helps mitigate financial challenges. This study finds that contingency theory is still relevant during times of uncertainty.

This research applied Generalized Structured Component Analysis (GSCA) to assess the structural model; consequently, biases from model estimations were minimized. Only a few research studies on contingency-based research in management accounting practices have investigated the research problem through the application of the GSCA. Moreover, the examination of mediating effects also provided further analysis.

FUNDING

This work was supported by the Research Fund, Faculty of Management Science, Ubon Ratchathani University, for fiscal year 2023.

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