

Nghiên cứu tác động của việc áp dụng các kỹ thuật kế toán quản trị đến hiệu quả hoạt động của các doanh nghiệp tỉnh Bình Định

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TÓM TẮT

Nghiên cứu này đánh giá các nhân tố ảnh hưởng đến việc áp dụng các kỹ thuật kế toán quản trị (KTQT) và tác động của việc áp dụng các kỹ thuật KTQT đến hiệu quả hoạt động của các doanh nghiệp (DN) tỉnh Bình Định. Dữ liệu thu thập từ 150 DN tỉnh Bình Định thông qua bảng hỏi khảo sát được đưa vào phân tích mô hình cấu trúc tuyến tính với mục đích kiểm định, đo lường mức độ ảnh hưởng của các nhân tố đến việc áp dụng các kỹ thuật KTQT cũng như tác động của việc áp dụng các kỹ thuật KTQT đến hiệu quả hoạt động của các DN tỉnh Bình Định với sự hỗ trợ của phần mềm AMOS. Kết quả nghiên cứu cho thấy Nhận thức của nhà quản trị, Cạnh tranh, Công nghệ thông tin, Cấu trúc DN, Văn hóa DN và Nguồn lực triển khai đều có ảnh hưởng đến việc áp dụng các kỹ thuật KTQT. Đồng thời, việc áp dụng các kỹ thuật KTQT có tác động tích cực đến hiệu quả hoạt động của các DN tỉnh Bình Định. Kết quả nghiên cứu thực nghiệm này giúp nhà quản trị định hướng và đẩy mạnh áp dụng các kỹ thuật KTQT trong công tác quản trị DN nhằm nâng cao hiệu quả hoạt động và phát triển bền vững của DN.

Từ khóa: *Kỹ thuật kế toán quản trị, hiệu quả hoạt động, tác động, doanh nghiệp, Bình Định.*

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Research on the impact of applying management accounting practices on the operational effectiveness of enterprises in Binh Dinh province

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ABSTRACT

This study evaluates the factors influencing the application of management accounting practices (MAP) and the impact of these practices on the operational effectiveness of enterprises in Binh Dinh province. Data were collected from 150 enterprises in Binh Dinh through a survey questionnaire, which was analyzed using structural equation modeling to test and measure the extent of influence of the factors on the application of MAP, as well as the impact of MAPs application on the operational effectiveness of enterprises in Binh Dinh with the support of AMOS software. The research results indicate that manager's perception, competition, information technology, business structure, corporate culture and resource implementation all influence the application of MAPs. Additionally, the application of MAPs has a positive impact on the operational effectiveness of enterprises in Binh Dinh province. These empirical research findings help managers to guide and enhance the application of MAPs in enterprise management to improve operational effectiveness and ensure sustainable development of the enterprises.

Keywords: *Management accounting practices, operational effectiveness, impact, enterprises, Binh Dinh.*

1. INTRODUCTION

The economy of Binh Dinh is increasingly developing and integrating deeply into both domestic and international markets. Enterprises face pressure to innovate their operational processes, management practices, enhance competitiveness, and improve operational effectiveness. According to the 2024 socio-economic census of Binh Dinh province, most enterprises in the area are small and medium-sized, lacking advantages in capital, with limited management experience and outdated technology. While the number of enterprises is

rapidly increasing, their operational effectiveness remains low. This situation is attributed to the global and Vietnamese economic conditions not fully recovering from the Covid-19 pandemic, alongside increasingly fierce competition. Enterprises are facing many difficulties and challenges, such as a lack of orders, insufficient capital, scarcity of raw materials, low quality of labor, and inflation driving up production costs. Additionally, low management levels and a rapidly changing, unstable business environment, along with the complexity and diversity of economic transactions arising in the

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production and business activities of enterprises, exacerbate the situation.

In particular, the cost management effectiveness of enterprises is poor, leading to high incurred costs and limited operational effectiveness. MAP assist managers in making timely and accurate decisions, while improving cost efficiency, productivity, profitability, and overall operational performance.

This study aims to identify and measure the extent of the impact of various factors on the application of MAPs in enterprises in Binh Dinh province and to analyze the impact of MAP application on the operational effectiveness of these enterprises. The results of this study will provide managers with a basis to enhance the implementation of MAP in enterprise management.

2. LITERATURE REVIEW

Research on MAP has been of interest to several authors and has been conducted in two main directions: studying the factors that influence the application of MAPs in enterprises and examining the impact of MAPs application on the operational effectiveness of enterprises.

2.1. Studying the factors that influence the application of MAP in enterprises

To identify and test the influence of various factors on the application of MAP, the authors conducted surveys in enterprises across different fields, industries, and countries. The results show that the application of MAP in enterprises is influenced by various factors, both internal and external to the enterprises.¹

Some researchers argue that competition is the main factor influencing the application of MAP in enterprise management. According to Ahmad,² competition creates tension, instability, uncertainty, and risk for enterprises, thereby prompting them to adjust their control systems, use resources wisely, and make timely business decisions. This leads to enterprises enhancing

the implementation of MAPs in management to adapt to the opportunities and challenges in today's volatile business environment. Similar results were found in studies by Al – Omiri and Drury,³ Hoque,⁴ Doan,⁵ Hung⁶ regarding the positive relationship between the level of competition and the level of MAPs application. However, O'Conor et al.,⁷ as well as Pham et al.,⁸ found no relationship between competition and the application of MAP in enterprises.

The research by Pierce and O'Dea,⁹ Joshi,¹⁰ Haldma and Laats,¹¹ El-Ebaishi et al.,¹² and Ahmad¹³ found that the size of enterprises positively influences the application of MAPs. Specifically, larger enterprises tend to apply MAP more than small and medium-sized enterprises. Additionally, William and Seaman¹⁴ found that changes in MAP methods occur more frequently in small enterprises compared to large ones. Furthermore, William and Seaman¹⁴ discovered a relationship between organizational structure and the application of MAPs. Specifically, enterprises with decentralized organizational structures tend to change MAP methods and techniques in their accounting systems more than those with centralized structures. Similarly, Abdel-Kader and Luther¹⁵ also found that the application of MAPs in enterprises with a high level of decentralization is greater than in those with low decentralization. Meanwhile, Hoque⁴ found that decentralization does not influence the application of MAPs.

Pham et al.,⁸ identified a positive influence of production technology on the application of MAPs in manufacturing enterprises in northern Vietnam. In particular, enterprises with advanced production technology prioritize the application of modern MAPs.

Macias¹⁶ studying the application of MAPs in Spanish enterprises, found an increase in the level of MAPs application when ownership shifted from state-owned enterprises to private enterprises. Additionally, the author discovered that enterprises with joint ventures with foreign

partners tend to apply modern MAPs more than those without such joint ventures.

Ismail and King¹⁷ found a positive relationship between the level of information technology implementation, the manager's understanding of accounting, and the level of consulting from professional organizations and auditing firms with the application of MAP in small and medium sized enterprises in Malaysia.

When investigating the reasons for the low usage of MAPs in Sri Lanka, Subasinghe and Fonseka¹⁸ found that corporate culture is the main factor influencing the application of MAP in this country, while the perceptions of senior managers, the need for planning, and market instability have little or no impact.

Another factor influencing the application of MAP is the availability of implementation resources. Bui et al.,¹⁹ found that enterprises with sufficient resources, including human and financial resources, experience a swift and favorable implementation of MAP, yielding effective results.

Hung⁶ while examining the factors affecting the application of MAP in small and medium-sized enterprises in Vietnam, discovered that business strategy is the strongest influencing factor on the application of MAP.

Recently, Tuan²⁰ studied the application of MAPs in enterprises in northern Vietnam, found that information technology, the qualifications of accounting staff, and management interest positively influence the application of MAPs.

The study by Lan²¹ examined the factors influencing the application of strategic management accounting practice in Vietnamese enterprises. The results identified seven factors that positively influence the application of strategic MAP, which are: environmental instability, competition, ownership structure, business strategy, market orientation, organizational structure and information technology.

2.2. Examining the impact of MAP application on the operational effectiveness of enterprises

This research direction has attracted considerable interest from many researchers and has been approached from various angles. Some authors study the application of specific MAP and their impact on the operational effectiveness of enterprises. Phornlaphatrachakorn²² assessed the impact of budgeting techniques on the operational effectiveness of enterprises in Thailand; Jusoh,²³ Hoque and James²⁴ analyzed the influence of the Balanced Scorecard (BSC) on the operational effectiveness of manufacturing enterprises in Malaysia and Australia. Ojra,²⁵ Al-Mawali,²⁶ Turner et al.,²⁷ examined the impact of strategic MAP on the operational effectiveness of enterprises; Elhamma and Zhang²⁸ demonstrated that Activity Based Costing (ABC) techniques have yielded better results for enterprises in Morocco. Similar results were found in the studies by Hoque and James,²⁴ Kennedy and Graves²⁹ showing that enterprises applying ABC achieve superior results compared to those that do not.

At the same time, some other authors have examined how the combination of two or more MAPs affect the operational effectiveness of enterprises. Maiga and Jacobs³⁰ investigated the impact of simultaneous application of ABC and BSC techniques on company performance; Banker et al.,³¹ suggested that combining ABC with total quality management techniques would help enterprises improve performance, quality, and reduce costs, thereby enhancing operational effectiveness. Additionally, many studies indicated that the compatibility of the MAP system with the enterprise's strategy and business environment help improve operational effectiveness. Cadez and Guilding³² pointed out that MAPs aligned with the chosen business strategy will enhance company performance. Abdel Al and McLellan³³ commented that an organization with a good combination of MAP and strategy will have a positive and significant

impact on performance. This viewpoint is supported by research evidence from Baines and Langfield,³⁴ Ah Lay and Jusoh³⁵. However, it is clear that most of the studies mentioned show the mediating relationship of changes or applications of MAP affecting performance under competitive pressure or changing business environments, but they have not yet demonstrated the direct impact of applying MAP on operational effectiveness. Therefore, recently, some authors have assessed the direct impact of applying MAP on enterprise performance, such as the study by Nuhu et al.,³⁶ which surveyed 127 public sector organizations and enterprises in Australia using Structural Equation Modeling (SEM). The results indicated that enterprises applying more modern MAPs achieve better operational effectiveness. Similarly, Maziriri³⁷ used regression analysis to study 280 small and medium sized enterprises in South Africa regarding business outcomes when applying MAPs, which were divided into five functional groups: cost systems, budgeting, performance evaluation, decision support information, and strategic analysis. The results showed a positive impact of applying MAP on the operational effectiveness of small and medium sized enterprises in South Africa, except for decision support information, which was not statistically significant due to the mismatch between the current decision making model and small enterprises. Similar studies,^{26,27,38} have also shown a positive relationship between the application of MAPs and the operational effectiveness of enterprises.

On the contrary, some research findings indicate that the application of MAP does not significantly affect the operational effectiveness of enterprises. For example, Banker³⁹ suggested that in a highly unstable business environment, the application of ABC techniques does not impact the operational effectiveness of enterprises. Similarly, Ittner et al.,⁴⁰ found no relationship between the use of ABC techniques and the operational effectiveness of enterprises. Asmilia and Sugiyarti⁴¹ surveyed 73 bank managers in Indonesia, and their results showed

that while the application of strategic MAP has an impact on competitive advantage, it does not significantly affect the operational effectiveness of banks. This finding aligns with the results of studies by Young and Selto,⁴² Perrera et al.,⁴³ who also found no relationship between the use of non-financial performance measures and the operational effectiveness of the organization, or very little evidence showing that the use of non-financial resource measures in just-in - time (JIT) inventory models is related to differences in operational effectiveness. Phornlaphatrachakorn²² found evidence indicating that budgeting significantly influences resource utilization and business productivity; however, it does not affect the operational effectiveness of Thai enterprises.

In Vietnam, there are still relatively few studies focusing on the impact of applying MAP on the operational effectiveness of enterprises. Anh⁵ affirmed that the application of MAP has a positive impact on the operational effectiveness of enterprises. According to the author, the more MAPs Vietnamese enterprises apply, the higher the resulting effectiveness, both financially and non-financially.

Similarly, Toan and Nuong⁴⁴ found a positive impact between the application of MAP and financial performance in Vietnamese manufacturing enterprises; however, the authors did not find a relationship between MAP and non-financial outcomes. This is consistent with the research results of Thanh,⁴⁵ which indicated that the application of MAP contributes to increasing the operational effectiveness of manufacturing enterprises in Vietnam. Likewise, the study by Trinh⁴⁶ also found that the application of strategic MAP contributes to enhancing the operational effectiveness of listed enterprises on the Vietnamese stock market, while also discovering that the application of strategic MAP mediates the impact between intellectual capital and operational effectiveness. The studies by Quy,⁴⁷ Lan²¹ also concluded that there is a positive relationship between the

application of strategic MAP and the operational effectiveness of enterprises from both financial and non-financial perspectives. Furthermore, the application of MAP plays a mediating role in the relationship between various factors and the operational effectiveness of enterprises.⁴⁸

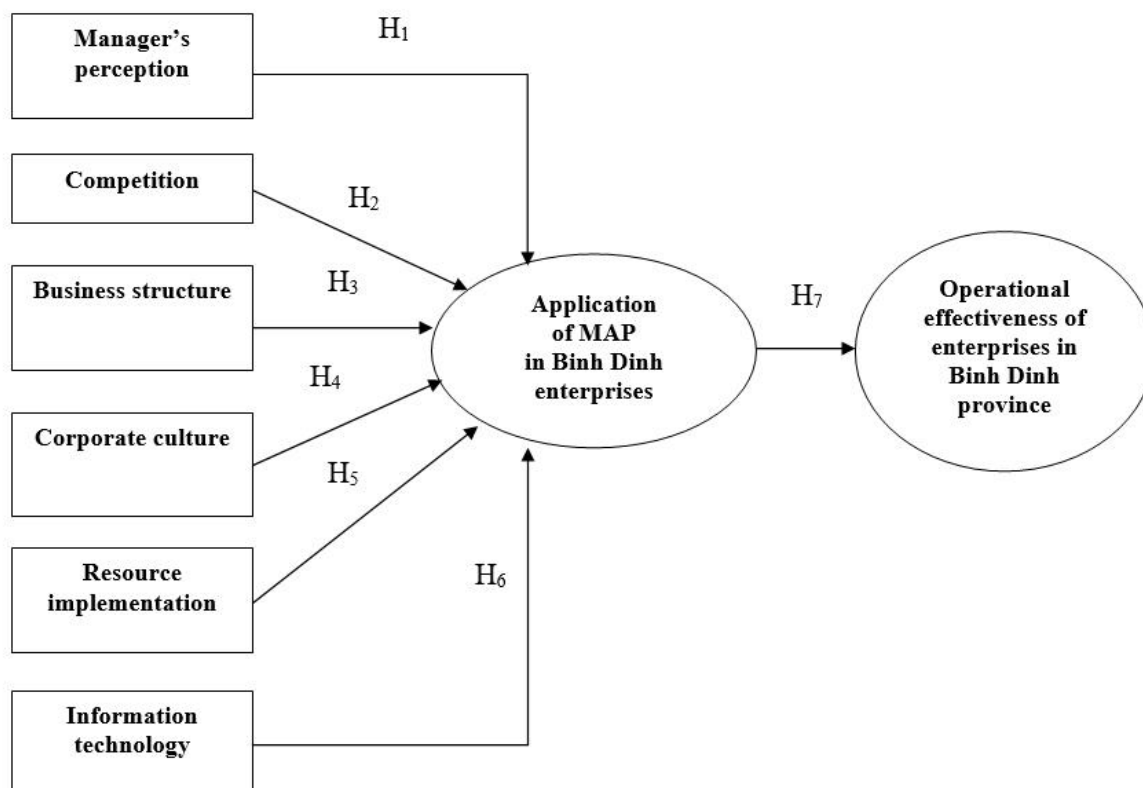
Thus, the overview indicates that the results of previous studies still contain many contradictions, leading to inconsistencies in the relationship between the application of MAP and the operational effectiveness of enterprises. The differences primarily focus on the non-financial achievements of enterprises. This can be explained by the assessment of operational effectiveness in studies on MAP, which consider both financial and non-financial results. However, the authors tend to focus more on financial achievements. Additionally, most studies show an indirect relationship between the management application of MAP and the operational effectiveness of enterprises, where

the application of MAP as a mediator, fitting into the strategy or contextual factors. Through the review of research, it is evident that empirical studies on the direct impact of the application of MAP on operational effectiveness are limited. Therefore, due to the lack of evidence as well as uncertainty and inconsistency in research results regarding the direct influence of MAP application on enterprise effectiveness, this represents a research gap that requires more empirical studies in various countries to provide additional empirical evidence and fill this gap.

3. RESEARCH METHODOLOGY

3.1. Research model and hypotheses

Through a literature review of related studies on the factors influencing the application of MAPs and operational effectiveness in enterprises, combined with in-depth interviews with experts, the research team developed the following research model:



(Resource: proposed by the research team)

Figure 1. Research model.

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From the research model, based on two fundamental theoretical foundations including uncertainty theory and sociology theory, as well as related previous studies, the research team developed the following research hypotheses:

H₁: Manager's perception positively influences the application of MAP in Binh Dinh enterprises.

H₂: Competition positively influences the application of MAP in Binh Dinh enterprises.

H₃: Organizational structure positively influences the application of MAP in Binh Dinh enterprises.

H₄: Corporate culture positively influences the application of MAP in Binh Dinh enterprises.

H₅: Implementation resources positively influence the application of MAP in Binh Dinh enterprises.

H₆: Information technology positively influences the application of MAP in Binh Dinh enterprises.

H₇: The application of MAP positively influences the operational effectiveness of enterprises in Binh Dinh province.

3.2. Research methodology

This study uses a mixed research method. In this, the qualitative research method with expert interviews including directors, chief accountants of enterprises, researchers, and experienced lecturers in management accounting helps the research team identify factors and refine the measurement scale of the factors influencing the application of MAP and operational effectiveness of enterprises in Binh Dinh province.

Quantitative data is collected through a survey distributed to enterprises in Binh Dinh province across various fields and business sectors. The enterprises in the study sample were selected using a convenience sampling method, each enterprise receives one survey. The survey

was sent to the enterprises through google forms and email, the target respondents are both accountants and managers. A total of 200 surveys were distributed, and 180 were returned; however, only 150 valid surveys met the criteria for inclusion in the study.

Although a convenience sampling method was employed, the research team made deliberate efforts to enhance the representativeness of the sample by distributing the survey to enterprises of various sizes (small, medium, large) and across key sectors such as manufacturing, services, and trade. This strategy was intended to improve the external validity of the research findings within the regional context.

To address potential common method bias (CMB), several procedural remedies were incorporated into the research design. Specifically, participants were assured of anonymity and confidentiality, the survey emphasized that there were no right or wrong answers, in order to minimize social desirability bias. Additionally, the order of the survey items was randomized to reduce the likelihood of response pattern bias.

Moreover, Harman's single-factor test was conducted to quantitatively assess the presence of CMB. The results indicated that the first unrotated factor accounted for less than 50% of the total variance, which, following the guideline by Podsakoff et al.,⁴⁹ suggests that common method bias is not a significant concern in this study.

The valid data were used to assess the reliability of the measurement scale, conduct exploratory factor analysis, confirmatory factor analysis, and structural equation modeling with the support of SPSS 25 and AMOS software.

Table 1. General information of enterprises in the study.

Classification	Number	Percent (%)
Respondent		
Director	15	10.0
Deputy director	25	16.6
Chief accountant	40	26.7
Department head	21	14.0
Accountant	49	32.7
Total	150	100.0
Size of enterprise		
Large	30	20.0
Medium	95	63.3
Small	25	16.7
Total	150	100.0
Business sector		
Industry, construction	70	46.7
Trade, service	65	43.3
Agriculture, forestry and fishery	15	10.0
Total	150	100.0

Ownership form		
Private enterprise	18	12.0
Limited liability company	102	68.0
Joint-stock company	24	16.0
Others	6	4.0
Total	150	100.0

(Source: Statistic results from SPSS software)

4. RESULT AND DISCUSSION

4.1. Evaluating the reliability of the measurement scale

The reliability of the measurement scale is assessed through Cronbach’s Alpha coefficient and the total item correlation coefficient. According to Tho,⁵⁰ the scale is considered reliable when the Cronbach’s Alpha ≥ 0.6 and the total item correlation of the observed variables is greater than 0.3. Observed variables with a total item correlation coefficient less than 0.3 will be excluded.

The results of the reliability assessment of the measurement scale for the factors in the research model are detailed in Table 2.

Table 2. Results of the reliability assessment of the measurement scale of variables.

Measurement items	Corrected Item – Total Correlation	Cronbach’s Alpha if Items deleted	Cronbach’s Alpha
Manager’s perception (NT)			0.974
NT1_ Business managers highly appreciate the usefulness of the management accounting practices tools	0.875	0.935	
NT2_ Business managers have knowledge of the technical tools of management accounting	0.926	0.918	
NT3_ Business managers have a high demand for applying management accounting practices	0.798	0.953	
NT4_ Managers accept a high cost in investing to apply management accounting practices	0.925	0.915	
Competition (COMP)			0.948
COMP1_ A significant difference in sales revenue among different products in the business	0.838	0.939	
COMP2_ The business faces strong competition in the global market	0.912	0.933	
COMP3_ The sales and distribution channels of the business are diverse	0.866	0.937	

COMP4_ The quality of the products and services of the business has increased significantly	0.891	0.935	
COMP5_ The diversity of products and services	0.727	0.948	
COMP6_ Price competition among businesses in the same industry is very strong	0.773	0.945	
COMP7_ The business responds flexibly to the activities and policies of its competitors	0.796	0.943	
Organizational structure (STRUC)			0.831
STRUC1_ Diverse skills for employees	0.451	0.828	
STRUC2_ Employee training	0.770	0.788	
STRUC3_ Cross-functional team	0.542	0.813	
STRUC4_ Establish a culture of participation	0.592	0.806	
STRUC5_ Management training	0.650	0.797	
STRUC6_ Lean organizational structure	0.530	0.814	
STRUC7_ Teamwork	0.884	0.767	
STRUC8_ Enhancing employee capabilities	0.070	0.858	
Corporate culture (CULT)			0.818
CULT1_ Support from managers to employees in the enterprise	0.613	0.809	
CULT2_ Mutual support among employees from different departments in the enterprise	0.713	0.706	
CULT3_ Consensus on the common development goals of the enterprise	0.700	0.721	
Implementation resources (RES)			0.878
RES1_ Fully equipped software and computers support the implementation of MAPs	0.847	0.750	
RES2_ Budget for implementing MAPs	0.735	0.853	
RES3_ There are skilled experts and experienced accounting staff in applying MAPs	0.714	0.871	
Information technology (IT)			0.811
IT1_ The application of information technology will effectively support the budgeting process	0.806	0.692	
IT2_ The application of information technology will effectively support decision-making	0.526	0.812	
IT3_ The application of information technology will effectively support decision evaluation	0.701	0.726	
IT4_ The application of information technology will effectively support strategic analysis	0.526	0.809	
Application of MAP in Binh Dinh enterprises			0.925
MAP1_ Implementing MAP in cost classification	0.898	0.889	
MAP2_ Implementing MAP in budget preparation	0.751	0.919	
MAP3_ Implementing MAP in decision support	0.763	0.917	
MAP4_ Implementing MAP in decision evaluation	0.766	0.917	
MAP5_ Implementing MAP in strategic analysis	0.859	0.898	

Operational effectiveness of enterprises in Binh Dinh province (PERF)			0.856
PERF1_ Financial performance (Operating revenue; Revenue growth; Gross profit)	0.741	0.810	
PERF2_ Non-financial performance (Machine utilization rate; Quality of products and services; Development of new products and services)	0.622	0.835	

(Source: Analysis results from SPSS software)

Based on the results of the reliability test of the measurement scale presented in Table 2, it shows that the Cronbach's Alpha coefficients of the factors are all greater than 0.6. The total correlation coefficient for the factor 'Business Structure' with the observed variable STRUC8 is less than 0.3, so this observed variable will be removed from the measurement scale of this factor. The remaining factors have correlation coefficients of the observed variables with the total variable all greater than 0.3, so they will be retained. Thus, the measurement scales of the factors in the research model all achieve reliability.

4.2. Exploratory factor analysis

After evaluating the reliability of the measurement scales of the factors, the authors' group continued to assess the validity of the measurement scales of the factors in the research model using exploratory factor analysis (EFA) with promax rotation. The results of the exploratory factor analysis are presented in Table 3.

Table 3. Results of KMO and Bartlett tests for independent factors.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.707
Bartlett's Test of Sphericity	Approx. Chi-Square	3636.389
	df	351
	Sig.	0.000

(Source: Analysis results from SPSS software)

KMO = 0.707 > 0.5 indicates that exploratory factor analysis is suitable for the

actual data. At the same time, sig. = 0.000 < 0.05 means that the observed variables have a linear correlation within each measurement scale.

The extracted variance ratio is 74.96% > 50%, indicating that 74.96% of the variation in the independent factor is explained by the observed variables of the factor. Additionally, based on the rotated factor matrix, it shows that the observed variables converge according to the measurement scale constructed by the authors.

For the MAP factor, the exploratory factor analysis results show KMO = 0.85 > 0.5, indicating that the exploratory factor analysis is appropriate for the actual data. At the same time, sig. = 0.000 < 0.05 indicates that the observed variables have a linear correlation within the measurement scale of the MAP factor.

Similarly, for the PERF factor, the exploratory factor analysis results show KMO = 0.87 > 0.5, indicating that the exploratory factor analysis is suitable for the actual data. At the same time, sig. = 0.000 < 0.05 means that the observed variables have a linear correlation within the measurement scale.

4.3. Confirmatory factor analysis

To assess the fit of the measurement model with the actual data, the authors' group continued to conduct confirmatory factor analysis. According to Hu and Bentler,⁵¹ if the CFA analysis results in CMIN/df ≤ 3, TLI and CFI ≥ 0.9, and RMSEA ≤ 0.08, then the model is considered to fit the actual data.

The results of the confirmatory factor analysis of the research model are presented in Table 4.

Table 4. Results of confirmatory factor analysis.

Index	Value
CMIN	1.009,018
df	503
P_value	0,000
CMIN/df	2,006
CFI	0,901
TLI	0,910
RMSEA	0,074

(Source: Analysis results from AMOS software)

Based on Table 4, it shows that $CMIN/df = 2.006 < 3$; $CFI = 0.901 > 0.9$; $TLI = 0.910 > 0.9$; $RMSEA = 0.074 < 0.08$, so the measurement model fits the actual data.

4.4. Structural equation modeling analysis

Structural equation modeling analysis is used to assess the fit of the structural model with the research data. The results of the structural equation modeling analysis are presented in Figure 2.

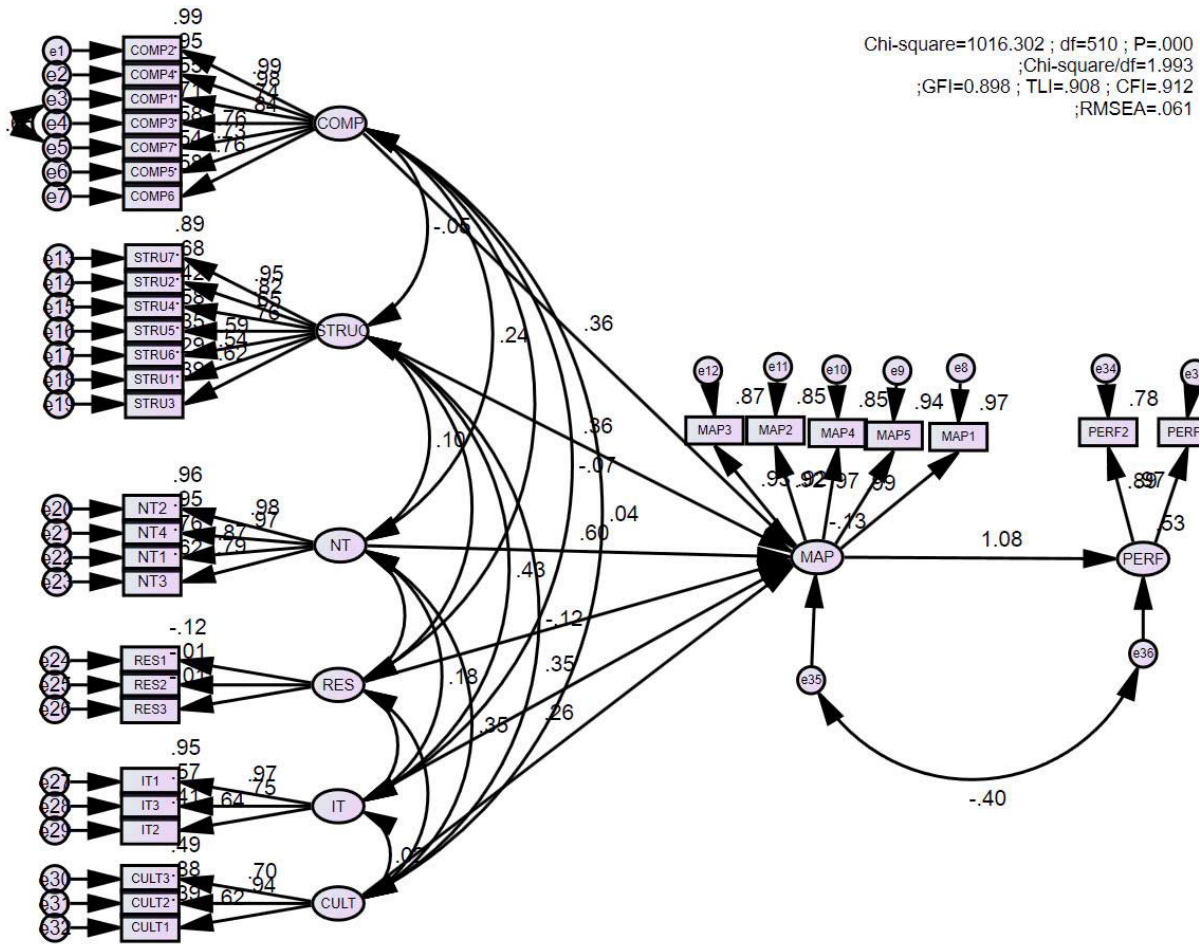


Figure 2. Structural equation modeling.

(Source: Analysis results from AMOS software)

Based on Figure 2, it shows that $CMIN/df = 1.993 < 3$; $CFI = 0.912 > 0.9$; $TLI = 0.908$

> 0.9 ; $RMSEA = 0.061 < 0.08$, so the structural model fits the actual data.

Table 5. Results of the model test.

Path	Estimated coefficient	Standard deviation	Critical value	P-value	Hypothesis	Conclusion
MAP ← NT	0.608	0.075	8.105	***	H ₁	Accepted
MAP ← COMP	0.388	0.046	8.348	***	H ₂	Accepted
MAP ← STRUC	0.401	0.049	8.24	***	H ₃	Accepted
MAP ← CULT	0.28	0.035	7.931	***	H ₄	Accepted
MAP ← RES	0.145	0.046	3.147	0.002	H ₅	Accepted
MAP ← IT	0.365	0.044	8.299	***	H ₆	Accepted
PERF ← MAP	1.101	0.073	15.186	***	H ₇	Accepted

Note: ***=0,000

Based on Table 5, it shows that all research hypotheses have P-values < 0.05, so all research hypotheses are accepted. At the same time, the estimated impact coefficients of the factors NT, COMP, STRUC, CULT, RES, and IT on MAP are all positive; this indicates that the factors of manager’s perception, competition, organizational structure, corporate culture, implementation resources, and information technology positively influence the application of MAP in Binh Dinh enterprises.

Table 6. Standardized coefficients.

Path	Standardized coefficients
MAP ← NT	0.603
MAP ← STRUC	0.361
MAP ← COMP	0.355
MAP ← IT	0.347
MAP ← CULT	0.256
MAP ← RES	0.121
PERF ← MAP	1.08

Table 6 shows that manager’s perception is the factor with the strongest influence on the application of MAP in enterprises in Binh Dinh province, with a standardized regression coefficient of 0.603. This finding is consistent

(Source: Calculation results from AMOS software)

with the empirical result of previous studies such as Pham et al.,⁸ Ismail and King,¹⁷ Tuan,²⁰ Lan.²¹ This emphasized the crucial role of manager’s perception in the application of MAPs, when managers possess a strong awareness of the usefulness and strategic value of MAPs, they tend to support their implementation more actively. Similarly, Thanh⁴⁵ pointed out that a lack of managerial understanding is one of the key barriers preventing the successful adoption of MAPs.

In addition, factors such as organizational structure, competition, information technology, corporate culture, and implementation resources also have a significant impact on the application of MAP in Binh Dinh enterprises. These results are consistent with the findings of several previous studies by Ahmad,² Doan,⁵ Williams and Seaman,¹⁴ Abdel-Kader and Luther.¹⁵ These findings confirm that a flexible organizational structure, advanced information technology infrastructure, and adequate internal resources are essential conditions for enterprises to effectively implement MAPs. At the same time, competitive capacity and the role of corporate culture are emphasized by Al Omiri and Drury,³ Subasinghe and Fonseka¹⁸ who argue that a competitive business environment, a culture that encourages innovation and transparency help enhance the acceptance, integration of MAPs at all levels within the enterprise.

Regarding the influence of MAPs on the operational efficiency of enterprises in Binh Dinh province, the strong standardized impact coefficient ($\beta = 1.08$) found in this study aligns with the conclusions of Maiga and Jacobs³⁰ who reported a positive link between the application of MAPs such as activity-based costing and balanced scorecard with both financial performance and employee engagement. This result is further reinforced by Toan and Nuong,⁴⁴ Thanh,⁴⁵ Quy⁴⁷ who emphasized that firms applying strategic management accounting techniques often experience improvements in decision-making quality, cost control, and market responsiveness.

The consistency of our findings with previous research not only validates the theoretical framework adopted but also provides further empirical evidence for the role of management accounting practices in enhancing operational effectiveness, particularly in the context of developing regions such as Binh Dinh province.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This study has identified five factors influencing the application of MAPs in enterprises in Binh Dinh province, including: the perception of enterprise managers, organizational structure, competition, information technology, corporate culture and implementation resources. The perception of enterprise managers is the most significant factor affecting the application of MAP. Additionally, the study has verified that the application of MAP indeed has a positive impact on enhancing the operational effectiveness of enterprises in Binh Dinh province.

5.2. Recommendations

Based on the research results, to enhance the application of MAPs in management practices to improve operational effectiveness, enterprises in Binh Dinh Province need to focus on implementing the following fundamental solutions.

5.2.1. Enhancing manager's awareness

The success of applying MAPs in enterprises in Binh Dinh province largely depends on the perception of the managers. Therefore, to promote the application of MAPs, the first and most important step is for the managers themselves to innovate their mindset, actively seek to understand the benefits and effectiveness that MAPs can bring to the enterprises, and provide practical support to managers in planning, controlling, and making quick, timely, and accurate decisions, thereby enhancing the competitiveness and operational effectiveness of the enterprises.

5.2.2. Business restructuring

To effectively and successfully apply MAPs, enterprise leaders need to focus on organizing training sessions, equipping employees with diverse knowledge and skills, and enhancing the qualifications and expertise of the workforce. They should also establish a culture of participation among all employees in the organization's activities. Additionally, enterprises should regularly train and enhance leadership and management skills for managers at all levels to ensure they have the capability to manage, operate, and fulfill their assigned tasks effectively. Furthermore, enterprises should consider organizing a streamlined and efficient management structure to maximize the usefulness and value of MAP in enterprise management.

5.2.3. Building corporate culture

Enterprises in Binh Dinh province need to build a culture of support between managers and employees, mutual support among staff across different departments, and consensus on the common development goals of the entire enterprise. Effectively implementing these three aspects will facilitate the rapid and smooth application of MAPs, enhancing the effectiveness of enterprise management, ensuring that all enterprise goals are achieved, and increasing operational effectiveness over time.

5.2.4. Enhancing and adequately preparing resources for implementation

The application of MAPs in enterprises requires resources in terms of human capital, finance, and technical infrastructure. Therefore, enterprises in Binh Dinh province need to focus on investing in accounting human resources, financial potential, and modern technical infrastructure and equipment to ensure that the application of MAPs in enterprise management proceeds quickly and smoothly, reducing time and saving costs.

5.2.5. Application of information technology in business management

In the context of the Fourth Industrial Revolution, the application of information technology in accounting and enterprise management is not only an inevitable trend but also a critical condition for enhancing competitiveness and ensuring sustainable development. Enterprises in Binh Dinh province must proactively invest in and systematically implement digital transformation solutions, particularly in the field of management accounting. The adoption of cloud-based accounting software and Enterprise Resource Planning systems enables the integration of management modules, data standardization, and improved internal control efficiency.

Notably, enterprises should promote the application of artificial intelligence (AI) in management accounting through automating budgeting processes and cost variance analysis, utilizing AI to analyze data and forecast financial trends, thereby supporting managers in making faster and more accurate decisions. The implementation of chatbots or virtual assistants to provide real time responses and advisory on management indicators is also recommended.

In addition, the deployment of technologies such as big data and blockchain contributes to enhanced transparency, traceability, and real time performance evaluation, establishing a

solid foundation for the application of modern management accounting techniques in enterprise management practices.

Integrating AI and digital technologies into management accounting can enhance the quality of managerial information, optimize costs, and increase operational flexibility, thereby improving overall business performance and fostering the sustainable growth of enterprises in Binh Dinh province within today's dynamic digital business environment.

5.3. Conditions for implementation

5.3.1. On the part of the State and relevant authorities

The government needs to create a favorable legal environment for enterprises to implement MAP in their management practices. In this regard, the Ministry of Finance should develop and issue circulars on MAP, supporting and guiding enterprises in Binh Dinh province specifically, and those across the country generally, on how to implement these techniques. Additionally, the Ministry of Finance should collaborate with the Department of Finance of Binh Dinh province to regularly organize workshops and conferences to help managers and accounting staff in enterprises within the province gain access to and understand the nature and benefits of MAP when applied in enterprise management.

5.3.2. On the part of the accounting professional association

As the professional regulatory body, the Vietnam Accounting and Auditing Association needs to enhance the role and expertise of the accounting workforce in enterprises in Binh Dinh province by organizing training sessions for managers, chief accountants, and accounting staff in local enterprises. This will help them access and understand MAP, thereby promoting the application of these techniques in enterprise management to improve operational effectiveness.

5.3.3. On the part of accounting education and training institutions

To implement MAPs in enterprises in Binh Dinh province, the role of accounting education and training institutions in the province is very important. In particular, Quy Nhon University needs to strengthen connections with local enterprises, periodically review and update the content of the Management Accounting course in its training program to ensure that the curriculum is current, relevant to practice, and equips students and trainees with knowledge and skills related to MAPs in enterprises. This will provide high-quality human resources with the knowledge and skills to quickly and effectively apply MAPs in management practices at enterprises in Binh Dinh province.

5.3.4. On the part of enterprises in Binh Dinh province

It is necessary to raise awareness among managers in enterprises about the diversity of MAPs and to choose methods suitable for the field of operation, scale, and specific characteristics of the enterprise. Additionally, enterprises should implement clear financial management decentralization, delegate authority, and assign management and control responsibilities to each manager, department, and unit within the enterprise. Companies need to establish a system of specific MAP indicators that align with their goals and ensure comparability over different periods. Moreover, managers in Binh Dinh province should cultivate a culture of innovation within their enterprises and actively prepare the necessary resources in terms of personnel, finance, infrastructure, etc., to successfully apply MAPs in management practices.

To achieve this, enterprises in Binh Dinh must develop a team of accounting staff who not only possess professional expertise but also have a deep understanding of the business operations of the enterprise and the skills to use software to accurately process, analyze, and evaluate

accounting information that supports timely decision-making by managers. They should seek financial resources both internally and externally to fund investments and upgrades of information infrastructure systems, including hardware and software, to facilitate the application of MAPs.

On the other hand, the leadership of enterprises should focus on investing in and upgrading information technology infrastructure, applying new technologies from the Fourth Industrial Revolution such as ERP software, cloud computing, artificial intelligence, and big data in enterprise management. This will leverage the advantages of these technologies to provide diverse and flexible information that better meets the information needs of managers in Binh Dinh province in today's volatile and highly competitive business environment.

This study is subject to several limitations. First, the research sample includes only enterprises located in Binh Dinh province, excluding enterprises from other regions. Consequently, the findings may lack generalizability and do not capture potential regional differences in the factors influencing the application of MAPs and the operational effectiveness. Second, the study does not examine the indirect effects of these influencing factors on the operational effectiveness, and certain potentially relevant variables were not incorporated into the research model.

Future research should consider expanding the geographic scope to a national level, which would enhance the external validity of the findings and provide deeper insights into the determinants of MAPs application and their impact on performance across diverse business environments in Vietnam. In addition, subsequent studies are encouraged to integrate further variables into the research model such as business strategy, digital transformation, innovation capability and explore the mediating or indirect effects of these factors on the operational effectiveness.

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