

FACTORS INFLUENCING MANAGERS' BEHAVIOR IN USING MANAGERIAL ACCOUNTING DATA IN VIETNAMESE FIRMS

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Abstract

This study aims to examine the factors influencing managers' behavior in using managerial accounting data in Vietnamese firms based on the Theory of Reasoned Action (TRA), The Uncertainty Theory (TUT), and Technology Acceptance Model (TAM). The initial research model includes four groups of factors: "Perceived Usefulness - U", "Perceived Ease of Use - E", "Perceived Convenience - C", and "Workplace effects - W". A structured questionnaire is used to collect research data from 143 business managers who are directors, chief accountants, and segment managers. The observed variables of groups C and E have been combined to form a new group named "Perceived Convenience and Ease of Use - CE". The research results show that all 3 groups of factors affect the behavior of managers in using managerial accounting data, including "Perception of usefulness - U", "Perceived convenience and ease of use - CE" and "Workplace effects - W". In this case, U has the greatest influence (regression coefficient is 0.560), followed by W (0.310) and CE (0.158). The research model explains 39.7% of managers' behavior in using managerial accounting data. The research findings serve as the foundation for recommendations to promote the role of managerial accounting data in the decision-making process of enterprise managers.

Keywords: Decision-making, Managerial accounting data, Theory, Workplace.

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INTRODUCTION

Managerial accounting provides information for managers to use within the enterprise, assisting them in three critical activities: planning, control, and decision-making. Vietnamese enterprises must coordinate financial and non-financial information in the process of corporate governance as part of the process of international economic integration. Business managers must use managerial accounting data in addition to financial accounting information. Many researchers have praised the role of managerial accounting in assisting business management decision-making. According to Senftlechner and Hiebl (2015), for the company's long-term development, managers must analyze both financial and non-financial data before making decisions. As a result, managers must understand and apply managerial accounting data.

Managerial accounting research has been interested in many aspects, such as studying the current situation of applying managerial accounting; studying the factors affecting managerial accounting application; studying the effectiveness of managerial accounting application; and studying the applied managerial accounting model. Each research direction yields different conclusions, but the majority of the research findings confirm the importance of managerial accounting and the increasing interest of managers in using managerial accounting data. In this context, one of the most intriguing research topics is the investigation of the factors influencing the behavior of users of managerial accounting data.

Traditional managerial accounting techniques, according to Clarke (1997), are more commonly used than modern managerial accounting techniques. Because the support technology system for tracking the costs of each activity was experiencing many difficulties at the time of the study, accountants almost exclusively used production volume as a criterion for allocating general costs. The level and knowledge of managers, followed by the size of the enterprise; type of business organization, level of information technology application; business strategy of enterprises; and decentralization in the administrative apparatus are the factors influencing the behavior of using managerial accounting data in enterprises. Large-scale enterprises, in particular, frequently have a greater demand for management information, and these enterprises have a greater financial capacity to implement modern managerial accounting methods.

Chan et al. (1997) investigated and classified the level of use of managerial accounting techniques in 109 manufacturing firms. According to the research findings, enterprises have used a variety of managerial accounting techniques, the most common of which is cost estimation, followed by long-term planning, cash estimation, periodical income statement, cost norm development, break-even analysis, and budget preparation. Other techniques are rarely used, such as total quality management (TQM) and activity-based costing (ABC). The factors influencing

managers' use of managerial accounting data are primarily managers' subjective standards, qualifications, and knowledge.

Sahay and Subhashish (2004) surveyed chief accountants for a study on the application of managerial accounting. The research results show that, of the 13 surveyed managerial accounting techniques, the C-V-P analysis method has the highest application rate (77.3%), while the other methods are low (less than 50%). At 5.7% and 9.5%, respectively, modern managerial accounting techniques such as target cost and quality cost are used. The manager's attitude has the greatest influence on the use of managerial accounting data, and convenience is the top concern for managers.

According to Xie Zhihua et al. (2011), the cost managerial accounting data system is used in C-V-P analysis and is highly valued by accountants. The standard costing system, in particular, is used by the majority of Chinese enterprises (more than 93%) to estimate production costs, control costs, and evaluate operational efficiency. In contrast, only about 1-2% of Chinese businesses use the ABC method. The need to use managerial accounting data is primarily determined by the manager's willingness to recognize the value of managerial accounting data.

Howard and Alan (2013) stated in another study on the use of managerial accounting data in Canadian businesses that the use of managerial accounting data is dependent on managers' knowledge and experience, as well as accountant qualifications.

Yen (2017) investigates the use of managerial accounting in 90 businesses in Binh Dinh Province, Vietnam. As a result, the use of managerial accounting data is influenced by three factors: managers' perceptions of the usefulness of managerial accounting technical tools; corporate accountant qualifications; and the size of enterprises. These variables are associated with the ability to successfully apply managerial accounting.

Ngoc et al. (2020) investigate the use of managerial accounting in Vietnamese enterprises for planning, control, evaluation, and decision-making. According to the findings, managerial accounting is used in the management of 100% of Vietnamese businesses. Small and medium-sized businesses prefer traditional managerial accounting techniques such as financial statement analysis, with a focus on cost estimation and control. Many modern managerial accounting techniques are used by large corporations, such as cost management and responsibility center budgeting, decision analysis, target cost accounting, and strategic managerial accounting. Furthermore, the research findings show that manufacturing and financial enterprises use managerial accounting more complexly than commercial and service enterprises.

Jaafar & Noordin, R. (2020) pointed out that the changes in the business environment have forced management accounting information to be more relevant. They investigated the extent of the use of management accounting information in Malaysian manufacturing firms through customer

satisfaction elements and showed that the use of management accounting information in manufacturing industries was an important key to enhancing performance.

Suryana, A. et al. (2023) examined the factors that influence the application of management accounting to firms in Malaysia with human resource Skills, business characteristics, business environment, and business strategy. The findings proved that all 4 factors have a significant positive effect on the application of management accounting. They also pointed out that the effectiveness of implementing management accounting is important to improve management performance.

Managerial accounting is becoming increasingly important as an effective management tool to assist administrators in performing management functions. Studies on factors affecting the use of management accounting information by managers in Vietnamese enterprises have been carried out by many scholars. However, the majority of Vietnamese businesses are small and medium-sized, and Vietnamese business managers have not placed a high value on managerial accounting data. As a result, researching the factors influencing Vietnamese corporate managers' use of managerial accounting data is an intriguing research topic. On the other hand, behavioral models are widely used in research fields such as marketing, information technology... The authors examine the influencing factors according to behavioral models to the use of management accounting information by managers in the context of Vietnamese enterprises in this study.

The remainder of this paper is as follows: Section 2 relates to the literature review and theoretical framework. Section 3 describes the research design. Section 4 presents the research results. Section 5 gives a discussion and recommendations.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Literature review

The research on the use of managerial accounting data in firm management primarily demonstrates two basic approaches: (i) the use of management accounting information, and (ii) the factors that influence managers' using management accounting information.

The use of management accounting information

Studies on the use of management accounting information are often approached according to management accounting techniques such as cost-per-activity (ABC), cost-volume-profit (CVP) analysis, and balanced scorecard (BSC)... or providing management accounting information in the rapidly changing environment.

Manalo (2001) studied 500 postal enterprises to explore the usage of the activity-based costing (ABC) method in providing accounting information. The result showed that 55% (275 enterprises) still used traditional methods to provide management accounting information, and 142

enterprises did not respond to the methods being used. Susan and Kathy (2003) research in the field of manufacturing and found that 35% of enterprises apply traditional cost managerial accounting methods, 30% of enterprises apply both traditional methods and ABC methods, 8% of enterprises apply the ABC method, 26% of enterprises apply the variable cost method. Thus, the percentage of enterprises that have applied the ABC method in the survey area for management information purposes is 38%.

Armitage et al. (2013) conducted in-depth interviews with 11 small and medium-sized businesses to investigate the use of managerial accounting. According to the findings of the study, the most commonly used managerial accounting techniques are fixed costing, traditional cost accounting, difference analysis, and financial statement analysis, divisional reporting, and performance evaluation using financial measures. Modern managerial accounting techniques like ABC activity costing and discounted cash flow analysis are rarely employed.

Sahay and Subhashish (2004) explored that the C-V-P analysis method has the highest application rate (77.3%) out of 579 enterprises. Xie Zhihua et al. (2011) pointed out that C-V-P analysis is highly valued information to Chinese enterprises in decision-making. CVP is a useful technique for providing short-term relevant information to managers.

Recently, the use of management accounting information associated with changes in the environment and towards sustainable development is being interested by many scholars. Jaafar, and Noordin, R. (2020) investigated the extent use of management accounting information in 34 Malaysia manufacturing firms through customer satisfaction elements in the business environment. The results showed that business environment changes have forced management accounting information. So, the usage of management accounting information is essential for a business to enhance performance.

Sumkaew, and Intanon, (2020) conducted a study to investigate relationships between strategic management accounting information usage and environmental uncertainty. The data was collected from 217 manufacturing enterprises in Thailand. The results show that managers increasingly require management accounting information under environmental uncertainty situations.

Fuchs et al. (2020) propose a strategic management tool by using BSC to promote sustainable development in higher education institutions. The paper proposed an adaptation of the original BSC for better management with four dimensions: community members, university members, product, and strategy.

Mio et al. (2021) conducted the research by a systematic literature review considering 65 articles published in ABS-ranked journals in the period 2000–2020. The research showed that most

of the authors investigate the use of BSC for managers in making decisions for sustainable development purposes.

The factors that influence managers' using management accounting information

Kosaiyakanont (2011) conducted a study on the relationship between the perception and need for managerial accounting of business owners in Northern Thailand and discovered that the greater the awareness of the importance and usefulness of managerial accounting among business owners, the greater the demand for managerial accounting application; Small and medium-sized enterprise owners have different perceptions about the importance and usefulness of managerial accounting. Medium-sized enterprises are more aware of the importance and utility of managerial accounting, as well as the need to use it than small-sized enterprises.

Ahmad (2012) discovered that the size of the business, the level of market competition, the level of participation of business owners, and advanced manufacturing techniques all influence how managerial accounting data is used. Whereas business owners' level of participation has the greatest impact, science and technology factors have the least. The findings also show that managerial accounting plays a supporting role in increasing the efficiency and effectiveness of corporate governance, thereby increasing business profits.

Fasesin (2015) investigates the factors that influence business managers' use of managerial accounting. Individual factors, financial capacity, and company structure, according to the study's findings, influence managers' use of managerial accounting data. In each region, the aforementioned factors have a similar level of influence on managerial accounting data usage behavior. The manager's attitude influences the use of managerial accounting techniques. Modern managerial accounting tools such as strategic planning and comprehensive quality management are more likely to be used by enterprises with high financial potential and a large scale.

Phi Anh (2016) surveyed over 220 medium and large-scale Vietnamese enterprises and discovered that the level of management decentralization is positively correlated with the use of managerial accounting tools. Simultaneously, the greater the use of managerial accounting data, the better the financial and non-financial results. Furthermore, the study confirms that the use of managerial accounting data is influenced by company size, financial constraints, external stakeholder requirements, the manager's knowledge and experience, business environment factors, and business industry characteristics.

Hung (2016) surveyed 186 enterprises to determine the factors influencing the use of managerial accounting data in Vietnamese enterprises, such as enterprise size, the cost of organizing international accounting, enterprise culture, accounting staff qualifications in enterprises, enterprise strategy, state ownership level, market competition level, and business owners' perceptions.

According to the findings of the study, these groups of factors account for 34.8% of the impact on the use of managerial accounting data in Vietnamese businesses. The perception of the business owner (19.16%), the size of the enterprise (18.67%), and the enterprise's strategy (18.19%) have the greatest influence.

Hamid (2018) used questionnaires and structural equations to survey 340 businesses. According to the findings of the study, the main factors influencing the use of managerial accounting data include organizational factors (including size, competitive strategy, and management decentralization); commercial potential factors (including customer strength, technological progress, and market competition); operational technology factors (including the complexity of process systems, advanced production technology, and total quality management); and factors belonging to the government (including qualifications, awareness, attitudes of managers and accountants).

Oanh et al. (2019) surveyed 120 Vietnamese enterprises in the fields of manufacturing, trade, and services and discovered that the factors influencing the use of managerial accounting data by enterprises include enterprise size, enterprise culture, enterprise organizational structure, technology, and human resource quality, with corporate culture having the greatest impact on the level of application of managerial accounting data by enterprises.

Hung and Oanh (2020) conducted a study with 542 valid votes from accountants and directors to determine the factors that influence the intention to use managerial accounting in Vietnamese enterprises. According to the research findings, four groups of factors influence the intention to use managerial accounting data: (1) expected results; (2) expected effort; (3) perceived credibility; and (4) subjective norm. 60.618% of the change in "Intention to use managerial accounting data" is explained by the research model.

Suryana, et al. (2023) assessed 04 factors (human resource Skills, business characteristics, business environment, and business strategy) that influence the application of management accounting to firms in Malaysia. The findings pointed out that all factors have a positive effect on the application of management accounting.

Although the research findings are still inconclusive, the use of managerial accounting data is primarily influenced by factors related to managers, enterprise characteristics, and business environment factors. Personal factors that managers must consider include managerial accounting understanding, awareness of the importance of managerial accounting data, and the need to use managerial accounting to support decision-making. Company size, organizational structure, business field, technology level, level of management decentralization, business strategy, and company culture are all important considerations. The level of competition, market volatility, and the development of information technology are all important business environment factors.

2.2. Theoretical framework

The theory of Reasoned Action (TRA), the Uncertainty Theory (TUT), and the Theory of Technology Acceptance Model (TAM) are all widely used in the study of individuals' information-using behavior.

Theory of Reasoned Action (TRA)

Ajzen and Fishbein pioneered the use of TRA (1975). This theory is used in research in a variety of fields, including health, business, information technology, and management. TRA focuses on two factors, "Attitudes" and "Subjective standards" concerning viewing. When considering cognitive aspects of behavior, it is assumed that human behavior is controlled by reason (Ajzen and Icek, 1991). Attitude refers to how individuals feel when using information, whereas subjective criteria refer to the influence of social environment, family, and friends on information-using behavior.

An individual's "Attitude" is influenced by "Belief in action results" and "Evaluation of action results". "Belief in action results" is an expectation of obtaining benefits. This indicates that the person has never used a new product, service, or technology. Meanwhile, the element "Assessment of action results" specifies that this is an evaluation of the experience outcomes of using a new product, service, or technology. Thus, the individual's "Attitude" here includes the emotional attitude from the discovery of "Belief in action results" and a certain attitude towards "Evaluating action results".

The term "subjective norm" refers to the pressure from social trends and trends or peers that an individual perceives to exist when purchasing, using, or applying technology.

According to the TRA research findings, "managers' attitude" is predicted to be a key factor influencing the intention to use managerial accounting data in company management.

The Uncertainty Theory - TUT

Since the mid-1970s, TUT has been applied to the study of managerial accounting. Enterprises can choose the appropriate managerial accounting method based on their size, business organization characteristics, and field of operation. There is no single managerial accounting system or method that applies to all enterprises or that can satisfy all situations that may arise in an enterprise. The managerial accounting system is uncertain in the face of changing circumstances. All changes in the environment, competition, organizational structure, or technology must be accommodated by the managerial accounting system.

Technology Acceptance Model – TAM

Davis (1986) was the first to research and introduce TAM, intending to clarify the factors influencing users' acceptance of new technology. The "Attitude" factor is further subdivided into "Perceived usefulness" and "Perceived ease of use". TAM is widely used to evaluate user acceptance of information and to explain user behavior by assessing the impact of information on users' beliefs, attitudes, and intentions.

This study evaluates the usefulness and ease of use of managerial accounting data to meet the decision-support requirements of managers to study the factors influencing the intention to use managerial accounting data using TAM. Administration. At the same time, because behavior is influenced by partners and friends, the intention to use managerial accounting data may be influenced by the manager's workplace effects.

The most important factors influencing managers' behavior in using managerial accounting data

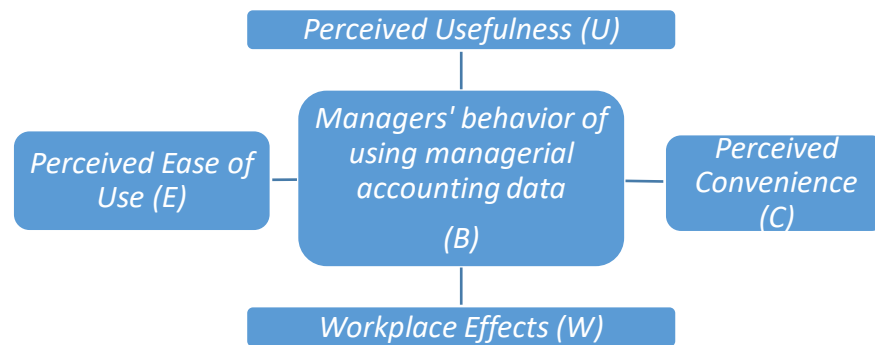


Figure 1. Proposed research model

Research hypotheses

H₁: Perceived usefulness of managerial accounting data has a positive impact on the managers' behavior in using managerial accounting data.

H₂: Perceived ease of use of managerial accounting data has a positive impact on the managers' behavior in using managerial accounting data.

H₃: Perceived convenience of managerial accounting data has a positive impact on the managers' behavior in using managerial accounting data.

H₄: Workplace effects have a positive impact on the managers' behavior in using managerial accounting data.

3. RESEARCH DESIGN

The study is based on a structured questionnaire survey with observed variables measured using a 5-level Likert scale (From 1-strongly disagree to 5-strongly agree or from 1-very low effect to 5-very high effect).

The questions are designed to demonstrate the observed variables that influence the manager's behavior when using managerial accounting data.

Directors, chief accountants, and departmental managers are among those who responded to the survey.

Stages of investigation:

Step 1: Conduct a practice survey to complete the questionnaire.

The test questionnaire was distributed to 25 researchers, enterprise administrators, and chief accountants to assess the relevance and comprehension of the questions. Based on the feedback, the research team revised the survey form to create an official version.

Step 2: Conduct a formal survey.

Survey forms are distributed both electronically and in hard copy. The study employed convenient non-randomized sampling from the team members' partner database.

Step 3: Collect and filter data.

The total number of votes cast is 200, the number of answer sheets is 145, and after screening, the number of valid answers is 143.

Step 4: Analyze the survey data.

Descriptive statistics, exploratory factor analysis, factor reliability assessment, and multivariate regression analysis were used to analyze the data.

Independent Variable Scales

Table 1 describes in detail the observed variables measuring the factors influencing managers' behavior when using managerial accounting data.

Table 1: Independent Variable Scales.

Factor	Observed variables	Source
Perceived Usefulness (U)	U1: Managerial accounting data is beneficial	Drury et al (1993); Chan et al (1997); Sahay and Subhashish (2004); Xie Zhihua et al (2011); Kosaiyakanont (2011); Armitage et al (2013); Hamid (2018)
	U2: Managerial accounting data aids in increasing productivity	
	U3: Managerial accounting data aids in the improvement of company management outcomes	
	U4: Managerial accounting data facilitates decision making	
Perceived Ease of Use (E)	E1: Managerial accounting data is clear and simple to grasp.	Chan et al (1999); Sahay and Subhashish (2004); Xie Zhihua et al (2011); Kosaiyakanont (2011); Armitage et al (2013); Hamid (2018)
	E2: Managerial accounting data is simple to read and comprehend	
	E3: Managerial accounting data is simple to use	
Perceived Convenience (C)	C1: Managerial accounting data is available upon request	Chan et al (1999); Manalo (2001); Sahay and Subhashish (2004); Xie Zhihua et al (2011); Oanh et al. (2019).
	C2: Managerial accounting data structure is convenient for analysis	
	C3: Managerial accounting data content is convenient for analysis	
	C4: On request, managerial accounting data is customized	
	C5: Using managerial accounting data saves time for managers.	
Workplace effects (W)	W1: Managers are always advised by the accounting department to use managerial accounting data	TUT; Subhashish (2004); Ahmad (2012); Fasesin (2015); Hamid (2018); Kosaiyakanont (2011); Armitage et al (2013); Oanh et al. (2019).
	W2: Key members of the company always advise managers to use managerial accounting data	
	W3: Important business partners always advise managers to use managerial accounting data	
Managers' behavior in using managerial accounting data (B)	(B1) Request that managerial accounting data be provided on a regular and periodic basis.	TRA; TAM; TUT; Clarke (1997); Chan et al (1999); Manalo (2001); Susan and Kathy (2003); Sahay and Subhashish (2004); Ahmad (2012); Fasesin (2015); Hamid (2018); Kosaiyakanont (2011); Armitage et al (2013)
	(B2) Using managerial accounting data in department and/or company planning	
	(B3) Using managerial accounting data to help management make decisions	
	(B4) When controlling the company's activities, managerial accounting data is used	
	(B5) Encourage other departments in the company to use managerial accounting data in decision-making	

Source: Research Design

Table 2 contains detailed information about the survey respondents (Respondent information)

Characteristic		N=143	(%)
Sex	Female	91	63.6
	Male	52	36.4
Age	< 30	101	70.6
	30-50	37	25.9
	> 50	5	3.5
Years of experience	< 1 year	6	4.2
	1-5 years	56	39.2
	> 5 years	81	56.6
Job description	Director	35	24.5
	Chief Accountant	69	48.2
	Department manager	39	27.3
Total		143	100

Source: Compiled from survey results

RESULTS

The state of managerial accounting in Vietnamese enterprises that participated in the survey

The respondents were polled about the use of traditional managerial accounting techniques and modern managerial accounting techniques at the company where they work as managers.

Table 3 shows the frequency and effectiveness with which traditional managerial accounting techniques are used by Vietnamese enterprises.

Table 3: Frequency of use and Effectiveness of traditional managerial accounting techniques

Traditional managerial accounting techniques	Status of application		The average score of effective evaluation
	Number of companies	Rate of application (%)	
Accounting vouchers method	143	100	4.22
Account method	143	100	4.46
Pricing method	142	99.3	4.56
Accounting reports method	143	100	4.53
Statistical methods	85	59.4	3.73
Probability method	54	37.7	3.03
Histogram-graph method	30	20.9	3.40

Source: Extracted from survey data processing results

Managerial accounting methods such as vouchers, accounts, pricing, and accounting reports are all used very frequently (from 99.3% to 100%), whereas statistical methods are only

used infrequently. 60% use the probabilistic method, while less than 38% use the histogram-graph method, and only 20% use the histogram-graph method. Traditional managerial accounting methods are highly effective (between 4.2 and 5), statistical methods are highly effective (between 3.4 and 4.2), probability methods are moderately effective, and the histogram-graph method is moderately effective (between 2.6 and 3.4).

Table 4 shows the frequency and effectiveness with which modern managerial accounting techniques are used by Vietnamese enterprises.

Table 4: Frequency of use and effectiveness of modern managerial accounting techniques

Modern <i>managerial accounting</i> techniques	Status of application		The average score of effective evaluation
	Number of companies	Rate of application (%)	
Activity-based costing (ABC) method	17	11.8	3.14
Target costing	8	5.6	3.48
Balanced Scorecard – BSC	19	13.3	3.5
Total Quality Management – TQM	24	16.8	3.6
Kaizen costing	15	10.5	3.02
Life cycle cost analysis	8	5.6	3.3

Source: Extracted from survey data processing results

According to the research findings, modern managerial accounting methods are used less frequently (between 5.5% and 16.8% of enterprises participating in the survey).

Modern managerial accounting methods that are rated as effective at an average level (between 2.61 and 3.40) include the ABC method, which was used in 17 enterprises (corresponding to a ratio of 11.8%); the Kaizen costing method, which was used in 15 enterprises (corresponding to a rate of 10.5%); and Life cycle cost analysis, which was used in 8 enterprises (corresponding to a rate of 5.6%).

Modern managerial accounting methods are rated highly effective (ranging from 3.41 to 4.20), including the target costing method used in 8 enterprises (corresponding to a 5.6% rate), the BSC method used in 19 enterprises (corresponding to a 13.3% rate), and TQM used in 24 enterprises (corresponding to a 16.8% rate).

Descriptive statistics

Table 5: Descriptive statistics of variables

Variables	N	Mean	Std. Deviation
Perceived Usefulness (U)			
U1	143	4.02	.782
U2	143	3.94	.775
U3	143	3.94	.737
U4	143	3.90	.742
Perceived Ease of Use (E)			
E1	143	3.60	.666
E2	143	3.44	.659
E3	143	3.46	.651
Perceived Convenience (C)			
C1	143	3.55	.723
C2	143	3.55	.671
C3	143	3.49	.673
C4	143	3.52	.763
C5	143	3.47	.694
Workplace effects (W)			
W1	143	3.65	.634
W2	143	3.66	.643
W3	143	3.66	.784
Managers' behavior of using managerial accounting data (B)			
B1	143	3.89	.669
B2	143	3.01	.782
B3	143	3.69	.669
B4	143	3.77	.661
B5	143	3.37	.693

Source: Extracted from survey data processing results

The mean values of the explanatory variable scales all reached a high level of significance (ranging from 3.41 to 4.2) with a standard deviation of less than 0.8, indicating that the answers on the factors influencing managers' behavior in using managerial accounting data in Vietnamese enterprises were in high agreement.

There are four out of five dependent variable scales (B1, B3, B4, and B5) with significant mean values (ranging from 3.41 to 4.2) and standard deviations less than 0.8, demonstrating consistency in evaluating the behavior of using managerial accounting data in Vietnamese enterprises. Only the B2 scale received an average value (ranging from 2.61 to 3.4) with a low standard deviation (0.782), indicating that managers in Vietnamese enterprises do not pay as much attention to managerial accounting data in planning as they do when making decisions and controlling activities.

Regression analysis

Reliability of the factor scale

Table 6: Reliability of the factor scale

Factor	Number of observed variables	Cronbach's alpha
U	4	0.920
E	3	0.870
C	5	0.877
W	3	0.779
B	5	0.914

Source: Extracted from survey data processing results

The survey data analysis results show that all factors have Cronbach's Alpha coefficients greater than 0.6 and total variable correlation coefficients greater than 0.3, indicating that the above scale ensures reliability in each factor.

Exploratory Factor Analysis (EFA)

The study used the KMO and Bartlett's tests to determine whether the data were suitable for EFA factor analysis, with a total of 15 observed variables included in the analysis. The KMO test value is 0.908, and the Bartlett's test significance level is 0.000 (less than 0.05), indicating that the factor analysis method used in this study is appropriate.

Using the PCA (Principal Component Analysis) method with independent variables that have Eigenvalues greater than 1, the analysis results show 3 factors generated from the original data with the total variance extracted by 69.902, this number reflects the 3 factors drawn to explain 69.902% of the variation of the dependent variable.

Table 7: Factor rotation matrix

Observed variables	Factor		
	1	2	3
C3	.807		
E2	.796		
E3	.782		
C2	.645		
C1	.628		
E1	.616		
C5	.603		
C4	.586		
U1		.880	
U2		.879	
U3		.851	

U4		.766	
W1			.776
W3			.775
W2			.752

Source: Extracted from survey data processing results

EFA results yielded a research model with three factors adjusted. In which the observed variables of groups C and E have been combined to form a new group with eight observed variables:

- Group 1: "Convenience and Ease of Use - CE" includes eight observed variables.
- Group 2: "Usefulness perception - U" includes four observed variables.
- Group 3: "Workplace Effects - W" includes three observed variables.

The modified research hypotheses

H₁: Perceived convenience and ease of use of managerial accounting data have a positive impact on the managers' behavior in using managerial accounting data.

H₂: Perceived usefulness of managerial accounting data has a positive impact on the managers' behavior in using managerial accounting data.

H₃: Workplace Effects have a positive impact on the managers' behavior in using managerial accounting data.

- **Adjusted model regression**

Table 8 shows the results of the regression analysis of the adjusted research model using the stepwise selection method.

Table 8: Results of regression analysis of the adjusted research model

Model	Standardized Coefficients		T	Sig.	Collinearity Statistics		Adjusted R ²
	B	Std. Error			Tolerance	VIF	
1 (Constant)	3.314	1.556	2.129	.035			0.397
U	.560	.139	4.020	.000	.703	1.422	
W	.310	.084	3.707	.000	.736	1.358	
CE	.158	.067	2.356	.020	.608	1.645	

a. Dependent Variable: B

Source: Extracted from survey data processing results

The research model explains 39.7% of the variation of "Managers' behavior of using managerial accounting data". The regression analysis model is suitable if the F-test is less than 0.05. The explanatory variable regression coefficients are statistically significant because the Sig value of the t-test is all less than 0.05. The independent variables' tolerance coefficients are all greater than 0.1, and their VIF coefficients are all less than 2, indicating that there is no multicollinearity phenomenon.

With a standardized coefficient of 0.560, the factor "Perceived usefulness of managerial accounting data" has the greatest influence on "Managers' behavior of using managerial accounting data", followed by the factor "Workplace Effects" with a standardized coefficient of 0.310. Finally, the factor "Perceived convenience and ease of use of managerial accounting data" has a standardized coefficient of 0.158.

5. DISCUSSION AND RECOMMENDATIONS

5.1. Discussion

The findings of the adjusted research model analysis include the following conclusions:

To begin, the factor "Perceived usefulness of managerial accounting data" influences managers' behavior toward using managerial accounting data positively.

Recognizing the utility of managerial accounting data will assist managers in making active use of managerial accounting data. The more managers see the value of using managerial accounting, the more positive their attitudes become. In contrast, the more managers who do not recognize the benefits of managerial accounting, the more negative their attitudes toward its use.

Drury et al. (1993), Xie Zhihua et al. (2011), Kosaiyakanont (2011), Yen (2017), Tran Ngoc Hung (2016), and Hung and Oanh (2020) all reached similar conclusions. Thus, to encourage managers to use managerial accounting data, it is necessary to strongly influence their perception of its effects and usefulness.

Second, the factor "Workplace Effects" has a positive impact on the behavior of managers using managerial accounting data.

The more managers are influenced by their surroundings, such as partners, important leaders, or accountants, the more positive their attitudes toward using managerial accounting data. The findings of this study are consistent with those of Kosaiyakanont (2011), Hung and Oanh (2020), Fasesin (2015), Hamid (2018), Ngoc et al (2020), and Yen (2017).

Third, the factor "Perceived convenience and ease of use of managerial accounting data" has a positive impact on the behavior of managers using managerial accounting data.

The more managers perceive the convenience and ease of use, the more positive attitudes they have, conversely, the more difficult it is for them to apply, and the less confident the attitude will be when applying managerial accounting data. Research findings are consistent with the conclusions of Manalo (2001), Sahay and Subhashish (2004), Yen (2017), Hung (2016), and Hung and Oanh (2020).

RECOMMENDATIONS

To begin, it is necessary to improve the usefulness of managerial accounting data while also improving managers' perceptions of its usefulness.

The accounting department must provide high-quality data for planning, control, and management decision-making. The information includes not only financial accounting data but also analysis results and target cost matching. Modern managerial accounting techniques such as ABC, BSC, and CVP should be used more frequently, and risk and probability analysis techniques should be used more frequently in analysis and forecasting.

At the same time, company managers must develop the habit of using accounting data rather than personal experience. Managers will actively use managerial accounting data more in management once they understand the benefits of doing so.

Second, Vietnamese companies must continue to improve the company management system and strengthen the connection between department managers within the company, with the accounting department playing an important role in this. Companies must establish a coordination system among management departments, connect with consultants and leaders of important business partners, and strengthen ties with audit experts to increase pressure on managers to effectively use and exploit managerial accounting data.

Third, Vietnamese firms must modernize their managerial accounting system in conjunction with information technology applications. The design of the managerial accounting data system, in conjunction with appropriate accounting software applications, will help to increase the utility and respond quickly to information needs for company management decision-making.

When managers recognize the value of managerial accounting data and recognize its usefulness, convenience, and ease of use, pressures from the workplace and partners are transformed into dynamics motivation, assisting managers in being proactive and positive in

their use of managerial accounting data to capitalize on opportunities and overcome challenges to lead Vietnamese enterprises to business success.

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