IMPACT OF CUSTOMER ACCOUNTING ON THE OPERATIONAL PERFORMANCE OF VIETNAMESE ENTERPRISES

Thi Thu Hang DO[1], Thanh Hanh HOANG[2*]

[1]Faculty of Accounting, Thai Nguyen University of Economics and Business Administration, Thai Nguyen, Vietnam.
[2*]Faculty of Accounting and Auditing, Academy of Policy and Development, Hanoi, Vietnam.

*Corresponding Author
E-mail: hoangthanhhanh@apd.edu.vn

ABSTRACT

The paper aims to evaluate the impact of the use of customer accounting information including Customers Profitability Analysis (CPA), Lifetime Customers Profitability Analysis (LCPA), and Valuation of Customers Assets (VCA) on the Operational Performance of enterprises (OPE). The study was conducted based on surveys from 315 subjects. They included directors, unit managers, and accountants in Vietnamese enterprises. By multivariate regression analysis from SPSS 20 software, the results show that the use of customer accounting information, analysis of customer profitability, and customer assets valuation are vital aspects of customer accounting that impact business performance. The level of use of CPA has the most substantial effect on business performance (coefficient is 0.250), next is the impact of using VCA (coefficient is 0.246). The study also shows that the age and size of enterprises have a positive impact on performance. However, this study did not determine the effect of LCPA on business performance. The research results are the basis for proposing solutions to improve the performance of enterprises in Vietnam from the use of customer accounting information.

Keywords: Customer accounting, Customers profitability analysis, Lifetime customers' profitability analysis, Valuation of customers' assets, Operational performance.

INTRODUCTION

Customer accounting information is considered a part of managerial accounting information, which has been developed since the 1990s to meet the actual needs of businesses in the competitive context. Customer accounting information helps businesses have an overall picture of customers, detailed information such as profit analysis for each customer; profit analysis by customer group; lifetime customers profitability analysis; valuation of customer assets, etc (Guilding & McManus, 2002).

According to Guilding and McManus (2002), customer accounting is a customer-focused method that includes all accounting techniques for assessing the profit, revenue, or present value of income related to a customer or a group of customers, and is used in strategic managerial accounting.

According to Holm, Kumar, and Plenborg (2016), customer accounting can also be considered as all accounting techniques to measure the value of the contribution of each customer or group of customers to the profit of the business. Customer accountants perform the tasks of classifying,

recording, tracking, calculating, and providing reports for each customer or group of customers to serve as a support basis for managers to make customer-related decisions.

Several studies have shown that businesses that implement customer accounting more successfully tend to achieve better operational performance. Customer accounting focuses on financial measures related to customers and their characteristics and behaviors (Inglis, 2008). Customer accounting presents the cost of product attributes that create value for the customer and provides information for making objective decisions considering the company's interests, competitive advantages, and profits. Therefore, companies have been paying attention to how they spend and invest for their target customers. Furthermore, customer accounting enables sustainable competitive advantages and superior financial returns through more efficient use of resources and adding value to customers (Holm *et al.*, 2016).

It can be said that the ultimate role of customer accounting is to help businesses improve operational efficiency. Information on customer profit analysis, lifetime customers profitability analysis, and valuation of customer assets help businesses choose to focus on specific customers or groups of customers and use customers as an important source of competitive advantage and efficiency. Many studies have shown that applying customer accounting has a positive impact on business results (Guilding & McManus, 2002; Helgesen *et al.*, 2018).

Customer accounting is a source of sustainable competitive advantages that creates superior performances. Therefore, the relationship between customer accounting and business performance is studied by many scholars, directly or indirectly, namely how customer accounting has a positive impact on promoting market orientation, enhancing competitiveness, or overall impact on performance (Guilding & McManus, 2002; Al-Mawali *et al.*, 2012; Helgesen *et al.*, 2018).

In Vietnam, studies on the impact of the use of management accounting information on the performance of enterprises have been conducted recently. Doan Ngoc Phi Anh (2016) evaluates the use of management accounting information on the performance of a sample of 220 Vietnamese SMEs in the transition economy. Vu Thi Thanh Huyen (2021) conducted an overview study on customer accounting and only provided theoretical information and suggestions for practical application in Vietnam. Therefore, in this study, we want to evaluate the impact of customer accounting information using on the performance of companies according to the following contents: Analysis of customer information; Analysis of customer lifecycle; Valuation of customer assets, and considering these impacts by different sizes, ages, ownership types, and business sectors. The remainder of this paper is arranged as follows: Part 2. Theoretical foundations to develop theoretical models and hypotheses used to study the relationship between the capacity of enterprises and performance. Part 3 presents research methods, sampling procedures, data collection, and measurement of observed variables. Part 4 is the results of data analysis using the proposed model. Part 5 ends by summarizing the findings. Part 6 is the conclusion.

Theoretical Framework

Customer accounting is used to consider customers or groups of customers as an analytical part of accounting. The level of use of customer accounting information includes Customers Profitability Analysis (individuals or groups); Lifetime Customers Profitability Analysis; Valuation of Customer Assets.

Customer Profit Analysis (CPA)

According to McManus (2013), CPA has been introduced as a powerful technique to provide a solution to the problem of measuring customer profitability and can be used as a means of supporting a customer-focused strategy. Measure segment profitability and manage customer relationships based on customer value so that both the customers and the company achieve their goals. Customer profitability analysis is a key component of customer accounting (Tanima & Bates, 2015) and it is considered to allocate revenues and expenses to customer segments and can calculate the profitability of customers or customer groups (van Raaij *et al.*, 2003). Companies perform customer profitability analysis to cover opportunities for targeted cost management and profit improvement programs, which form the decision basis for pricing, bonus plans, and discounts for customers and open up the possibility of strategic customer segmentation and targeting based on cost and potential profitability. Furthermore, customer convenience requires resource allocation decisions according to the benefits and costs of customer acquisition, customer retention, and customer interaction. It provides information about the profitability of a customer or a group of customers contributing to financial performance. It is supposed to build and nurture relationships with customers.

Accordingly, customer profitability analysis becomes a key strategic tool in helping businesses build customer relationships and achieve sustainable competitiveness and good operational efficiency.

Lifetime Customers Profitability Analysis (LCPA)

Pfeifer *et al.* (2005) defines lifetime customer profitability or customer lifetime value as the present value of expected profits, reducing costs from the customers. According to Guilding and McManus (2002), Lifetime Customers Profitability Analysis is an advanced development of customer profitability analysis. However, lifetime customer profitability analysis is a fundamental and quantitative measure of the financial results of the relationship a company has with its customers.

Customer Lifetime Value represents a potential method for enhancing companies' long-term, successful, viable, and sustainable performance and achievement, and it is an integral and important aspect of customer service. customer accounting. It is a metric for selecting customers and designing marketing programs and the present value of expected future profit streams during the lifetime transaction with a customer (Haenlein *et al.*, 2006). Therefore, companies that implement lifetime customer profitability analysis will strive to serve customers and treat customers as intangible long-term assets by providing useful deals with customers for the best relationship and performance. Similarly, customer lifetime value is considered to be the net present value of all customer profits (Dreze & Bonfrer, 2009). It is built using customer retention rate, revenue per customer, total profit per transaction or period, marketing costs, and the discount rate of cashflows. Accordingly, customer acquisition, customer selection, campaign management, customer retention efforts, upselling efforts, and resource allocation are applied using a measure of customer lifetime value in the context of a highly competitive environment. In addition, customer lifetime value refers to the value of the relationship with the customer over the lifetime of the relationship (Ryals, 2008). Customer lifetime value is crucial for predicting a company's long-term performance.

Valuation of Customers Assets (VCA)

This technique evaluates customers or groups of customers as assets involved in calculating customer value for the company (Cadez & Guilding, 2008). Thus, classifying customers as assets make customers part of the company's value (Gupta & Lehmann, 2003). Defining and creating customer value is considered a prerequisite for a company's long-term survival and success.

Guilding and McManus (2002) found five techniques of customer accounting, including profitability analysis by customer, profitability analysis by customer group, lifetime customers profitability analysis, valuation of customers assets, and overall customer accounting information. Recent studies on customer accounting (Cadez, 2006; Cadez & Guilding, 2008) mention three techniques: customer profitability analysis, lifetime customers profitability analysis, and valuation of the customer as assets. These three techniques can be viewed as covering the other two (profitability analysis by customer group and overall customer accounting information). However, this study will discuss the information generated by the customer-focused techniques (3 techniques) identified in the study by Cadez (2006) and Cadez and Guilding (2008).

The Relationship Between the Level of Customer Accounting Information Use and the Business Performance

The relationship between the level of customer accounting information use and the performance of the business has been extensively empirically verified and has provided mixed results. Some studies show that higher use of accounting information leads to better business performance (Baines & Langfield-Smith, 2003; Cadez and Guilding, 2008). Meanwhile, several other studies have shown that the use of accounting information draws context-dependent conclusions or even gives negative outcomes (Baines & Langfield-Smith, 2003; O'Connor & Cheung, 2007; Cadez & Guilding, 2008).

On the other hand, some other studies have recorded a negative impact (Agbejule, 2005) or no impact of customer accounting information on operational performance. Malmi *et al.* (2004) examined the impact of customer profitability analysis on performance and found that there was no effect of the customer on business performance.

However, most previous studies show a positive result on the relationship between the use of customer accounting information and the financial performance of the business. The literature review has confirmed that one of the main roles of accounting information is to facilitate the development and implementation of business strategy (Chenhall, 2003). With this role, customer accounting information in particular can support the development of business strategies and monitor the implementation of these strategies and achieve outstanding efficiency (Simons, 1987). From these aspects, we propose the following hypotheses:

H1: Businesses that use customer profitability analysis information more often will have better performance.

H2: Businesses that use customer lifecycle customer profitability analysis information more often will have better performance.

H3: Businesses that use the valuation of customers as asset information more often will have better performance.

The model includes 01 dependent variable (operational performance) and 03 independent variables, which are Customer profitability analysis, Customer lifetime profitability analysis, and Valuation of customers as assets **(Figure 1)**. The model's scales are inherited from Guilding and McManus (2002), Gupta and Lehmann (2003), and Pfeifer *et al.*, (2005). This model aims to assess the impact of the level of use of customer accounting information (Customer Profitability Analysis, Lifetime Customer Profitability Analysis, and Customer Asset Valuation) on the operational performance of the enterprise.
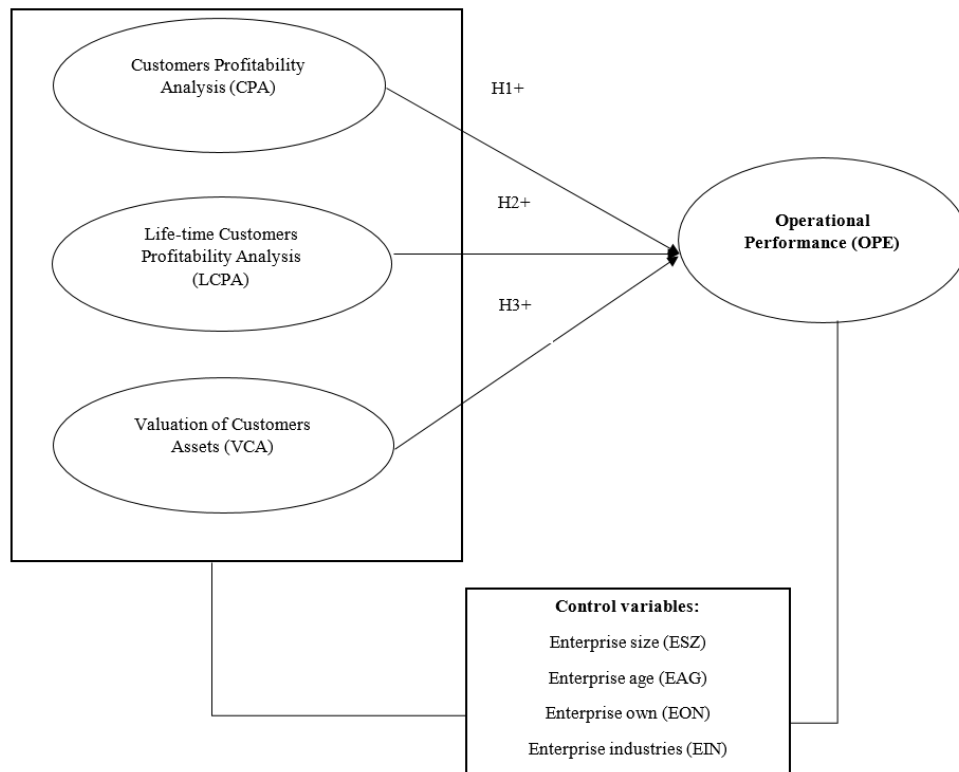
Customers Information Usage

Figure 1. Proposed research model

MATERIALS AND METHODS

Implementation Process
The implementation stages from data collection and processing to analysis are as follows:
Step 1: Based on the theoretical model of Guiding and McManus (2002), Gupta and Lehmann (2003), and Pfeifer *et al.* (2005), we build a survey on google forms, discuss with experts, including 02 business directors, 02 chief accountants of the business and 02 scientists who are lecturers of the University in Vietnam. Based on the discussion results, we have built the measurement scale with the adjustment of observed variables to conduct the official survey. The official questionnaire was sent to accountants and business managers via email by convenient sampling method from friends, relatives, and partners.

Step 2: Collected 322 votes. After coding and cleaning the data, 315 valid votes were obtained to perform the analysis.

Step 3: Analyze data on SPSS 22 software with the following tools: (1) Test the reliability of the scale using Cronbach's Alpha; (2) EFA - exploratory factor analysis; (3) Correlation analysis; (4) Regression analysis.

Research Scale

The questionnaire is designed into 4 parts. Part 1 "Using customer accounting information" includes 3 contents **(Table 1)**. Part 2 "Operational Performance". The scales are inherited from Guilding and McManus (2002), Gupta and Lehmann (2003), and Pfeifer *et al.* (2005). Part 3 "Business Information" and Part 4 "Respondent Information".

Table 1. Scale Description

STT	Factor	Code	Observed variables
1	Customers Profitability Analysis	CPA	06
2	Lifetime Customers Profitability Analysis	LCPA	06
3	Valuation of Customer's Assets	VCA	05
4	Operational Performance	OPE	09

Research Sample Characteristics

There are 315 surveyed enterprises. In terms of the size of surveyed enterprises, in this study, we classify enterprises by the number of employees with 3 levels: small (less than 100 persons), medium (100 – 200 persons), and large (over 200 persons). Out of the total 315 enterprises, there are 121 small and medium-sized enterprises with fewer than 100 employees (38.4%), 118 large-sized enterprises with 100-200 employees (37.5%), and 76 large-sized enterprises with over 200 employees (24.1%). In terms of the number of years of operation (the age of enterprises), most enterprises operate from 5 to 10 years (168; 53.3%), followed by enterprises over 10 years (84; 26.7%), and the rest are businesses under 5 years.

In terms of ownership, 268 enterprises are private enterprises (85.1%), 31 are state-owned (9.8%), and the rest are non-profit businesses (4.9%). In terms of business areas, 172 enterprises operate in the field of trade and service (54.6%), 91 enterprises in the field of manufacturing (28.9%), 10 enterprises in the field of construction (3.2%), 14 enterprises in the field of information technology (4.4%), and 28 enterprises in other fields such as education, television, entertainment... (8.9%).

RESULTS AND DISCUSSION

Reliability Analysis

Evaluate the reliability of the scales using Cronbach's Alpha reliability statistics to reflect the close correlation between the observed variables in the same factor CPA, LCPA, VCA, and OPE. All factors ensure Cronbach Alpha reliability of 0.6 or more (Hair *et al.*, 2010), so the observations in each scale are suitable to perform exploratory factor analysis **(Table 2)**.

Table 2. Reliability Analysis

Groups	Cronbach's Alpha	N of Items
1. Customers Profitability Analysis (CPA)	0.903	6
2. Lifetime Customers Profitability Analysis (LCPA)	0.948	6
3. Valuation of Customers Assets (VCA)	0.948	5
4. Operational Performance (OP)	0.954	9

EFA - Exploratory Factor Analysis

After analyzing the reliability, the appropriate observed variables form the scale according to the proposed model. Carrying out the exploratory factor analysis to assess the convergence and divergence of the groups of factors, reaffirming the structure of the scales.

KMO and Bartlett's test results show that Sig. = 0.000 < 0.05; high KMO coefficient (0.943 > 0.5). This result indicates that the observed variables in the population are correlated with each other and the EFA factor analysis is very appropriate. Eigenvalues greater than 1, with 03 factors and extracted variance of 76.847% (greater than 50%) meeting the requirements.

Multivariate Regression Analysis

After analyzing reliability and exploratory factors, assessing the impact of VCA, CPA, and LCPA on OPE by regression analysis to test the hypotheses according to the research model.

The Adjusted R Square coefficient of the model is 24.1 (P-value <0.01), showing that the model can explain 24.1% of the total impact of the factors VCA, CPA, LCPA, and control variables on the operational performance of enterprises. **Table 3** shows that the factors VCA and CPA are statistically significant (Sig. < 0.05), proving to have a positive impact on the performance of enterprises. However, the LCPA factor has not been statistically significant, so there is not enough basis to conclude that this factor has an impact on the performance of enterprises. The factors also do not have multicollinearity because the VIF coefficients are all less than 3 (Hair *et al.*, 2010).

Control variables of age and size of enterprises have a positive impact on the performance of enterprises while the business industry and type of ownership do not have enough basis to conclude about their relationship with the operational performance of enterprises.

Table 3. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.355	.270		5.018	.000		
	VCA	.195	.049	.246	3.961	.000	.628	1.593
	CPA	.271	.058	.250	4.680	.000	.848	1.179
	LCPA	.002	.051	.002	.032	.975	.607	1.649
	EAG	.163	.050	.176	3.247	.001	.824	1.213
	EIN	-.001	.026	-.002	-.042	.966	.969	1.032
	EON	-.081	.062	-.066	-1.313	.190	.965	1.036

ESZ	.122	.044	.150	2.747	.006	.805	1.242

a. Dependent Variable: OPE

The regression equation is presented as:

$$Y = 0.246 *VCA + 0.250*CPA + 0.176*EAG + 0.150*ESZ + \varepsilon \qquad (1)$$

Thus, to assess the impact of the use of customer accounting information on the performance of the business, the research does not have enough basis to conclude on the impact of Lifetime customers profitability analysis (LCPA) on business performance (OPE). Hypothesis H3 was rejected. Hypotheses H1 and H2 are accepted, specifically, the level of use of customer profitability analysis (CPA) information has the strongest impact on operational performance (standardized regression coefficient is 0.250). Next is the impact of using the valuation of customer asset (VCA) information on operational performance (standardized regression coefficient is 0.246). The age and size of enterprises have a positive impact on performance (standardized regression coefficients are 0.176 and 0.150, respectively).

To evaluate the use of customer accounting information in the following aspects: customer profitability analysis (CPA); Lifetime customers profitability analysis (LCPA); valuation of customers asset (VCA) with a sample of 315 Vietnamese enterprises, research has shown that there is a positive impact between the use of customer accounting information (valuation of customers asset (VCA); customer profitability analysis (CPA) to the performance. This result encourages businesses to increase customer understanding linked to the basis for customer action management based on strategic portfolio with customers. From there, companies create competitive opportunities, strengthen competitive advantages, and improve customer satisfaction. Customer satisfaction has an important relationship with business performance. This result is consistent with the study of Guilding and McManus (2002), Lord *et al.*, (2007), Phaprukbaramee (2018), and Helgesen *et al.*, (2018).

Research has supported the hypothesis that businesses that use more customer profitability analysis information will perform better. Customer profitability analysis is an important component of customer accounting (Tanima & Bates, 2015). Customer profitability analysis becomes a key strategic tool to help businesses build customer bases and customer relationships and achieve sustainable competitiveness. The results of this study are consistent with Lord *et al.* (2007), Al-Mawali *et al.* (2012), McManus (2013), and Tanima and Bates (2015).

Research has also supported the hypothesis that businesses that use more customer asset pricing information will perform better. With the ability to manage customer assets, companies can generate long-term profits and increase shareholder value, market share, and profitability. Thus, customer asset management becomes a key driver for determining customer relationships and business performance. Enterprises need to provide additional resources such as know-how and financial tools, and management mechanisms to increase operational efficiency. The results of this study are consistent with Guilding and McManus (2002), Lord *et al.* (2007), Al-Mawali *et al.* (2012), McManus (2013), Tanima and Bates (2015), Phaprukbaramee (2018).

The study also shows that the control variables on the size and age of the enterprise also have a positive effect on the use of customer accounting information and enterprise performance. This result also suggests for further studies to clarify and compare the difference in the use of

customer accounting information and the performance of enterprises according to the level of size and age of enterprises.

However, this study has not found the impact of using customer lifecycle value analysis information on business performance. One of the possible reasons for this result is that customer accounting is still new and has not applied complex tools such as customer lifecycle value assessment, so the impact of these factors is unsubstantiated. This result contradicts the work of Guilding and McManus (2002), Tanima and Bates (2015), and Helgesen *et al.*, (2018).

CONCLUSION

This study empirically confirms that the use of customer accounting information, customer profitability analysis, and valuation of customer assets are key aspects of customer accounting that have an impact on operational performance, which is consistent with the study review. These factors can play an important role in explaining a company's good performance. The research results are the basis for proposing solutions to improve the performance of enterprises in Vietnam using customer accounting information. The results of this study also suggest future research to understand the relationship more clearly and explain more clearly why the lifetime customer valuation factor does not play a role in determining the results of Vietnamese enterprises.

References

Agbejule, A. (2005). The relationship between management accounting systems and perceived environmental uncertainty on managerial performance: a research note. *Accounting and Business Research, 35*(4), 295-305.

Al-Mawali, H., Zainuddin, Y., & Nasir Kader Ali, N. (2012). Customer accounting information usage and organizational performance. *Business Strategy Series*, *13*(5), 215-223.

Baines, A., & Langfield-Smith, K. (2003). Antecedents to management accounting change: a structural equation approach. *Accounting, Organizations and Society*, *28*(7-8), 675-698.

Cadez, S. (2006). A cross industry comparison of strategic management accounting practices: an exploratory study. *Economic and Business Review for Central and South-Eastern Europe*, *8*(3), 279-299.

Cadez, S., & Guilding, C. (2008). An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society*, *33*(7-8), 836-863.

Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, *28*(2-3), 127-168.

Drèze, X., & Bonfrer, A. (2009). Moving from customer lifetime value to customer equity. *Quantitative Marketing and Economics, 7*, 289-320. doi:10.1007/s11129-009-9067-y

Guilding, C., & McManus, L. (2002). The incidence, perceived merit and antecedents of customer accounting: An exploratory note. *Accounting, Organizations and Society, 27*(1-2), 45-59.

Gupta, S., & Lehmann, D. (2003). Customers as assets. *Journal of Interactive Marketing*, *17*(1), 9-24.

Haenlein, M., Kaplan, A. M., & Schoder, D. (2006). Valuing the Real Option of Abandoning Unprofitable Customers when Calculating Customer Lifetime Value. *Journal of Marketing*, *70*(3), 5-20. doi:10.1509/jmkg.70.3.005

Hair, J., Black, W., Babin, B., & Ander, R. (2010). *Multivariate Data Analysis.* New Jersey: Pearson Academic.

Helgesen, Ø., Sandanger, H. M., & Sandbekk, J. (2018). Do customer profitability analyses pay? A survey of large Norwegian companies. *International Journal of Managerial and Financial Accounting, 10*(4), 352-377.

Holm, M., Kumar, V., & Plenborg, T. (2016). An investigation of customer accounting systems as a source of sustainable competitive advantage. *Advances in Accounting*, *32*, 18-30.

Ryals, L. (2008). Determining the indirect value of a customer. *Journal of Marketing Management*, *24*(7-8), 847-864. doi:10.1362/026725708X345542

Lord, B. R., Shanahan, Y. P., & Nolan, B. M. (2007). The use and perceived merit of customer accounting in New Zealand. *Accounting Research Journal, 20*(1), 47-59.

Malmi, T., Raulas, M., Gudergan, S., & Sehm, J. (2004). An empirical study on customer profitability accounting, customer orientation and business unit performance. *Paper presented at the EAA conference*, Prague.

McManus, L. (2013). Customer accounting and marketing performance measures in the hotel industry: Evidence from Australia. *International Journal of Hospitality Management, 33,* 140-152.

O'Connor, N. G., & Cheung, C. L. K. (2007). Product/service adoption strategies and bank customer accounting in Hong Kong. *Pacific Accounting Review*, *19*(1), 31-46.

Pfeifer, P. E., Haskins, M. E., & Conroy, R. M. (2005). Customer lifetime value, customerprofitability, and the treatment of acquisition spending. *Journal of Managerial Issues, 17*(1), 11-25.

Phi Anh, D. N. (2016). Factors Affecting the Use and Consequences of Management Accounting Practices in A Transitional Economy: The Case of Vietnam. *Journal of Economics & Development, 18*(1), 54-73. doi:10.33301/2016.18.01.04

Inglis, R. M. (2008). Exploring accounting and market orientation: an interfunctional case study. *Journal of Marketing Management*, *24*(7-8), 687-710. doi:10.1362/026725708X345470

Simons, R. (1987). Accounting control systems and business strategy: an empirical analysis. *Accounting, Organizations and Society*, *12*(4), 357-374.

Tanima, F. A., & Bates, K. (2015). The incidence and perceived managerial merit of customer accounting in New Zealand. *Pacific Accounting Review, 27*(4), 466-485.

van Raaij, E. M., Vernooij, M. J., & van Triest, S. (2003). The implementation of customer profitability analysis: A case study. *Industrial Marketing Management*, *32*(7), 573-583.

Vu, T. H. (2021). Overview of accounting for clients in the world and experience for Vietnamese enterprises. *Industry and Trade Magazine*, 6.