

THE RELATIONSHIP BETWEEN BUSINESS STRATEGY AND INTERNAL CONTROL IN AQUACULTURE FIRMS

Duc Dinh Truong^{*}, Duc Tai Do^{**}, Thi Huong Tra Le^{***},
Thi Quynh Lien Duong^{****}, The Nu Tran^{*****}, Thi Thu Phuong Ha^{*****}

^{*} University of Labour and Social Affairs, Hanoi, Vietnam

^{**} Hanoi University of Industry, Hanoi, Vietnam

^{***} Banking Academy, Hanoi, Vietnam

^{****} College of Economics, Vinh University, Vinh, Vietnam

^{*****} Corresponding author, VNU University of Economics and Business, Hanoi, Vietnam

Contact details: VNU University of Economics and Business, No. 144, Xuan Thuy Road, Hanoi, Vietnam

^{*****} Hanoi University of Business and Technology, Hanoi, Vietnam



Abstract

How to cite this paper: Truong, D. D., Do, D. T., Le, T. H. T., Duong, T. Q. L., Tran, T. N., & Ha, T. T. P. (2024). The relationship between business strategy and internal control in aquaculture firms. *Corporate & Business Strategy Review*, 5(3), 17–26. <https://doi.org/10.22495/cbsrv5i3art2>

Copyright © 2024 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). <https://creativecommons.org/licenses/by/4.0/>

ISSN Online: 2708-4965

ISSN Print: 2708-9924

Received: 30.01.2024

Accepted: 11.06.2024

JEL Classification: M40, M42, K00, J18, J88

DOI: 10.22495/cbsrv5i3art2

Any company that wants to achieve both financial and non-financial performance needs to have internal controls. Internal controls are intended to reduce risks, safeguard resources, guarantee accurate financial reporting, boost productivity, and ease compliance (Bashaija, 2022). The purpose of this study is to investigate how internal control and business strategy interact in Vietnamese aquaculture companies. To gather information, a survey of 225 workers in Vietnamese aquaculture companies was done. Through qualitative and quantitative methodologies, we used Cronbach's alpha, exploratory factor analysis (EFA), and regression analysis to determine the relationship between business strategy and internal control. The results showed that the business strategy had a positive relationship with internal control. In particular, the defensive strategy is the strongest. From the findings, this study suggests several recommendations to improve internal control, such as improving business strategy. The findings are thought to be a helpful resource for Vietnamese aquaculture companies looking to move toward sustainable development.

Keywords: Internal Control, Business Strategy, Public Policy, Accounting Law

Authors' individual contribution: Conceptualization — D.T.D.; Methodology — D.D.T. and T.H.T.L.; Validation — T.Q.L.D.; Formal Analysis — D.T.D.; Investigation — T.N.T. and T.T.P.H.; Resources — T.N.T.; Data Curation — D.D.T. and T.T.P.H.; Writing — Original Draft — D.T.D. and T.T.P.H.; Writing — Review & Editing — T.H.T.L. and T.Q.L.D.; Supervision — D.T.D. and T.Q.L.D.; Project Administration — D.T.D. and T.N.T.; Funding Acquisition — D.D.T., D.T.D., T.H.T.L., T.N.T., and T.T.P.H.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

Acknowledgements: University of Labour and Social Affairs, Hanoi University of Industry, Banking Academy, Vinh University, VNU University of Economics and Business and Hanoi University of Business and Technology, Vietnam, and numerous other academics who assisted us during the research period are all acknowledged by the Authors.

1. INTRODUCTION

Current Vietnamese official documents centre on the creation of a supervisory board within a joint-stock company. The Vietnam Government's Decree No. 5/2019/ND-CP lays forth requirements for internal audit work in state agencies, public non-business organizations, and businesses. The directive is operative as of April 1, 2019. This decree mandates that all businesses, even listed ones, conduct internal audits. Additionally, the regulation encourages other companies to conduct internal audits (Decree No. 5/2019/ND-CP). Furthermore, the accounting unit is required to set up an internal control system within the organization. The Law on Accounting No. 88/2015/QH13 defines internal control as the establishment and implementation of internal mechanisms, policies, processes, and regulations within the accounting unit in accordance with the provisions of the law in order to ensure timely prevention, detection, and handling of risks and meet the set requirements.

An organizational unit's creation and implementation of rules and control processes known as internal control serves as a safeguard against legal and regulatory violations. At the same time, it helps to prevent, detect, and correct frauds and errors, which leads to risk prevention, the safety of assets and information, and operational efficiency in the unit. Internal control with its components is closely linked together, implementing the goal of dealing with risks, controlling risks, etc. that will support the organization to achieve its goals, improve efficiency and competitiveness, and develop more sustainably in the environment of international economic integration.

The aquaculture industry has played a significant role in the restructuring of the agricultural and rural economies in recent years. It has also effectively contributed to the eradication of hunger and the reduction of poverty, created jobs for over four million people, raised living standards in rural, coastal, plain, midland, and mountainous areas, and improved national defence and security protection in the country's sea and islands. In order to attain the aforementioned outcomes, it is imperative to acknowledge the significance of aquaculture enterprises, particularly those listed on the stock market of Vietnam at present¹.

As the economy grows and integrates with the global economy, especially with Vietnam joining the European Union-Vietnam Free Trade Agreement (EVFTA), aquaculture companies in general and those listed on the stock market, in particular, may encounter new problems, they may also be presented with new opportunities: Vietnamese aquacultural export products will face fierce competition with local agricultural products of newly-joined European Union (EU) countries and companies with strong and deeply experienced aquaculture firms outside the EU; strict requirements regarding origins, dumping, subsidies, and trade remedies; risks regarding input resources; risks related to production technology and product quality management; risks regarding consumers' interests, etc. These risks and challenges demand that managers install effective internal control,

understand the key elements affecting internal control generally and the effects of corporate strategy on internal control specifically, and make timely adjustments to deal with challenges and risks so that internal control can be enhanced and improve business performance in order to maintain stable development for the enterprise.

Business strategy is a broad concept and has different variations, such as Porter (1980), Miles et al. (1978), or the strategic group of Gupta and Govindarajan (1984). As businesses' environments change to be less stable and more intricate, enterprises are faced with both opportunities and risks. Enterprises should be more meticulous with their strategies and prepare for continuous changes to optimize the advantage of their resources and improve their performances. In addition, it is essential that management thoroughly understand their business strategies to suit their circumstances and environments, which can help them devise long-term strategies, and road maps for adjustments, and ensure proper resources for those strategies.

Business strategies are an important factor in promoting collaboration in the supply chain and improving business results (Rodrigues et al., 2004). Enterprises in the same industry often employ different business strategies. Moreover, enterprises should not imitate each other's strategies, as business strategies should be built on the resources at hand. In addition, as the business environment shifts and business strategies become less applicable, key features of each enterprise in the same industry may not suffice, as they can be easily copied by their opponents or traded as an item on the resource market.

The study question and objective are predicated on the research concerns that are pertinent to this area. The query is:

RQ1: How much of an impact does business strategy have on internal control in Vietnamese aquaculture companies?

The objective of this article is to conduct an in-depth study on the relationship between business strategy and internal control of aquaculture firms in Vietnam and, on that basis, to propose recommendations to help aquaculture firms strengthen, strive, and enhance the effectiveness of internal control, thereby minimizing risks for enterprises and helping enterprises to develop sustainably in the current market economy.

The rest of the paper is as follows. Section 2 examines pertinent scholarly works and research hypotheses. Section 3 explains the methodology for the empirical research on the study population, research design, unit of analysis, sampling, validity, the dependability of the data gathering tool, as well as the data analysis strategy, are examined. Section 4 presents the results and discusses them. Section 5 provides the paper's conclusion and recommendations.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Internal control

Adamec et al. (2002) conducted the study of "internal reflection". The author used qualitative research methods by consulting experts who are managers, internal auditors, and independent

¹ <https://cophieu68.vn/>

auditors. The control environment, risk assessment, control actions, information and communication, and monitoring — the five components of internal control (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 1992) — were evaluated using a 5-point Likert scale in a survey. The study published the survey content on internal control used to evaluate audit units and also mentioned the self-assessment of control.

Onumah et al. (2018) collect data from previous research and questionnaire surveys of medium- to high-level management at 33 listed companies in Ghana. These authors use several methods, such as analysis, synthesis, and statistics, using a regression model with the assistance of Statistical Package for the Social Sciences (SPSS). Research results show that internal control at these firms is not efficient; although the dimensions of management environment, risk assessments, and information and communications all have high scores, the dimensions of control and supervision are scored fairly low. These authors also provide recommendations for management to take swift measures and improve their internal controls.

So, there are many different approaches to internal control, especially since the COSO report was released in 1992. Internal control has developed in different directions, and the way internal control is conducted in different enterprises is a key direction of the COSO report versions. Five components make up internal control: information and communication, activities related to control, risk assessment, control environment, and monitoring (Anh, 2017; Asiligwa & Rennox, 2017).

Nguyen, Vu, et al. (2023) define internal control as the collection of rules, guidelines, and practices that management, directors, and other members of the design unit apply and uphold in order to give a fair level of assurance regarding the entity's capacity to accomplish its goals. Internal control is a routine task performed by units and organizations based on their efforts to identify ways to prevent the ineffective implementation of all goals that have been set forth. In addition, internal control refers to the planning, implementation, and maintenance of necessary protocols and systems to lessen the impact of certain hazards. Management is responsible for the implementation, running, and crucial oversight of an efficient internal control system (Tien & Thanh, 2023).

Internal control promotes better performance by private enterprises in Vietnam and makes financial statements more transparent (Pham, 2019; Le et al., 2022). Internal control is impacted by ownership structure, firm size, and director qualities (Do, 2022). However, Muhtar et al. (2023) claim that there are still serious flaws in the internal control system's implementation that haven't been fixed between 2010 and 2018.

These days, Vietnamese businesses understand the value of internal control (Do, 2022; Tran & Tran, 2021). The board of directors will be able to accomplish operational goals and stop illegal activity with the aid of internal control. Any company that wants to achieve both financial and non-financial performance needs to have internal controls in place (Nguyen, Pham, et al., 2023). Internal controls are intended to reduce risks, safeguard resources, guarantee accurate financial reporting, boost productivity, and ease compliance (Bashaija, 2022).

Numerous studies on internal control in various disciplines and businesses have been conducted in Vietnam: Ho (2016), Nguyen and Duong (2018) in the banking sector; Pham (2017) in the beer-wine-beverage enterprise; Nguyen and Nguyen (2018) in the businesses operating under the Vietnam Forestry Corporation; Hoang (2022) in the road traffic enterprises; Nguyen (2019) in the public career field; Tran and Tran (2021) in textile firms; Nguyen et al. (2021), and Le and Nguyen (2018) in Vietnam Joint Stock Company, etc. The five elements of internal control are the control environment, risk assessment, control actions, information and communication, and monitoring. The authors based their conclusions on the COSO (1992, 2013) report on internal control.

2.2. Business strategy and internal control

Business strategies have become a fundamental element of research concerning factors that influence internal control (Otley, 1980), and internal control may be modified based on the business strategies that the enterprise chooses (Porter, 1980). According to Simons (1995), organizations with different strategies may use different variations of internal control. Jokipii and Agbejule (2009) researched the relationship between business strategies and components of internal control.

The exploratory, defensive, and analytical strategies of Miller and Dröge (1986) are widely used in internal control studies.

Business strategies are a vision of the future image of enterprises in their industry based on their competitive advantages; they concern goals and necessary measures to achieve these goals throughout the strategies (Dent, 1990).

The impact of company strategy on internal control in Malaysia is investigated by Auzair (2011). The research result shows that cost-optimization strategies affect administrative control more, while product differentiation has a less significant impact on administrative control.

Dropulic's (2013) study based in Croatia concludes that companies that follow differentiation strategies often put more focus on policies, procedures, and management environments than cost-optimizing companies.

Small and medium enterprises (SMEs) require management business plan to get a competitive edge (Onufrey & Bergek, 2021), and the approach taken needs to be modified to take into account the adequacy of the resources that SMEs actors possess (Istianingsih & Suraji, 2020).

Pham (2014) investigates the connection between internal control and company strategy in Vietnam. The author's method includes synthesis, interviewing experts, and descriptive statistics. Research results show that 90.52% of respondents believe that the system of internal control and business strategies are correlated, and if business strategies are not supervised properly, resources could be exhausted and objectives may not be accomplished.

Numerous research have examined the connection between business strategy and innovation technology. Farida and Sutopo (2023) investigated the association between digital innovation technology and management business strategy with a competitive advantage in small and medium-sized firms in

Central Java. However, research on the relationship between business strategy and internal control is lacking or incomplete, especially in the current Vietnamese context of businesses implementing digital transformation and an integrated economy with international economics.

Thus, the following are hypothesized:

H1: Attack strategy positively influences the internal control of aquaculture firms in Vietnam.

H2: Analysis strategy positively influences the internal control of aquaculture firms in Vietnam.

H3: Defensive strategy positively influences the internal control of aquaculture firms in Vietnam.

3. RESEARCH METHODOLOGY

3.1. Research instrument

The quantitative research method is carried out based on a pre-designed questionnaire, and data is collected using the convenience sampling method.

For exploratory factor analysis (EFA), the minimum number of samples is calculated according to the formula: $n \geq 7 * x$ (Hair et al., 2010), where n is the sample size and x is the total variable. The survey questionnaire in this study includes 13 observed variables, so the minimum number of samples is: $n \geq 7 * 13 = 91$ samples. The study collected 225 survey questionnaires, satisfying the above requirements.

A total of 225 accountants, sales staff, and administrative staff working for aquaculture firms in Vietnam participated in this study. We used a convenient sampling method that took into account gender and job position to ensure sample representation. The number of male respondents was 65.3%, more than only 34.7% of female respondents. The number of respondents who are sales and administrative staff accounts for 40%, while the number of people who are accountants and internal auditors is 60%. The responses were gathered through an offline and online survey. There were four sections on the questionnaire. Demographic information, including gender, age, and position, was gathered in the first part.

Items concerning aquaculture companies are included in the second section.

Items intended to determine internal control are found in the third part. The participants were asked to indicate how much they agreed or disagreed with several issues pertaining to internal control (1 being strongly disagreed, and 5 being highly agreed). Internal control includes five components: control environment, risk assessment, information and communication, control activities, and monitoring activities (Nguyen, Pham, et al., 2023; V. H. Nguyen, 2023).

Items intended to determine the impact of business strategy on internal control are found in the fourth part. Internal control-related items were given to the respondents to rate the degree of influence of the business plan (1 being strongly without influence, and 5 being strongly influence). The scale was established based on qualitative research results and references from previous studies, thereby inheriting and supplementing it to suit the research purpose. Each factor is built from 4-5 questions to fully cover the aspects that need to be evaluated of a research concept in a new research environment. The 5-point Likert scale increases

from 1 to 5. The scale is designed to include 13 observed variables for the independent variable.

To evaluate internal control in the third segment and the impact of company strategy on internal control in the fourth, a questionnaire is the most effective tool for measuring the variables. As a result, the only data-gathering tool used in this study is the questionnaire.

3.2. Data analysis

Data collected from the questionnaire was coded and preprocessed on Excel software. Afterwards, using SPSS as the statistical tool, this study looked at the structural model. For example, regression model analysis, EFA, Cronbach's alpha analysis, and descriptive statistics.

Descriptive statistics are used to analyze samples (frequency) and respondents' assessments of business strategy factors affecting internal control at seafood enterprises. Values calculated in descriptive analysis include mean, standard deviation, frequency, and percentage.

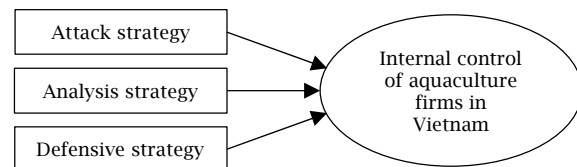
Cronbach's alpha scale reliability analysis is used to evaluate the level of uniformity of questions on the scales, helping to determine the reliability of the measurement scales for research concepts. According to Hair et al. (2010) and Nguyen (2011), a scale is deemed suitable and dependable for use in research if the Cronbach's alpha coefficient value is higher than 0.7. The scale utilized in this investigation is confirmed by the data collected, which indicates that all scales in the study have Cronbach's alpha coefficient values between 0.720 and 0.932, all of which are greater than 0.7. The study is solid and trustworthy.

In order to ascertain the relationship between independent and dependent variables in a model and investigate the relationships between several independent factors and a dependent variable, multivariate regression analysis is utilized.

3.3. Research model

The research model was built using group discussion techniques with six members, including two accounting and auditing experts, two managers of aquaculture firms, and two chief accountants of aquaculture firms. Besides, drawing on pertinent theories, prior study findings, and the aforementioned analysis, the authors suggest the subsequent research model (see Figure 1).

Figure 1. Research model



4. RESULTS AND DISCUSSION

4.1. Descriptive statistics outcome

The current status of internal control at aquaculture firms in Vietnam and how business tactics impact internal control at aquaculture firms in Vietnam are illustrated as descriptive statistics in Table 1.

Table 1. Descriptive statistics outcome

| <i>Variable</i> | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. deviation</i> |
|--|----------|----------------|----------------|-------------|-----------------------|
| Internal control (KSNB) | | | | | |
| Control environment (KSNB-MTKS) | 225 | 1.0 | 5.0 | 3.94 | 0.94 |
| Risk assessment (KSNB-RR) | 225 | 1.0 | 5.0 | 3.91 | 0.84 |
| Control activities (KSNB-KS) | 225 | 1.0 | 5.0 | 3.97 | 0.85 |
| Information and communications (KSNB-TT) | 225 | 1.0 | 5.0 | 4.01 | 0.80 |
| Monitoring (KSNB-GS) | 225 | 1.0 | 5.0 | 4.00 | 0.88 |
| Valid N (listwise) | 225 | | | | |
| Attack strategy (CLC) | | | | | |
| CLC1 | 225 | 2.0 | 5.0 | 3.81 | 0.608 |
| CLC2 | 225 | 2.0 | 5.0 | 3.63 | 0.629 |
| CLC3 | 225 | 2.0 | 5.0 | 3.78 | 0.689 |
| CLC4 | 225 | 2.0 | 5.0 | 3.81 | 0.682 |
| Valid N (listwise) | 225 | | | | |
| Analysis strategy (CLP) | | | | | |
| CLP1 | 225 | 1.0 | 5.0 | 3.91 | 0.745 |
| CLP2 | 225 | 1.0 | 5.0 | 3.82 | 0.729 |
| CLP3 | 225 | 1.0 | 5.0 | 3.85 | 0.741 |
| CLP4 | 225 | 1.0 | 5.0 | 4.00 | 0.785 |
| CLP5 | 225 | 1.0 | 5.0 | 3.88 | 0.776 |
| Valid N (listwise) | 225 | | | | |
| Defensive strategy (CLT) | | | | | |
| CLT1 | 225 | 2.0 | 5.0 | 4.34 | 0.757 |
| CLT2 | 225 | 2.0 | 5.0 | 4.29 | 0.746 |
| CLT3 | 225 | 2.0 | 5.0 | 4.26 | 0.772 |
| CLT4 | 225 | 2.0 | 5.0 | 4.28 | 0.725 |
| Valid N (listwise) | 225 | | | | |

According to statistics from Table 1, participants concur with the following.

Internal control includes five attributes, all of which are rated with a score of 3.91 or higher. This can be due to several reasons: Internal control can promote objective supervision, discourage subjective decisions, and prevent high-risk initiatives from being approved by managers who prefer a “quiet life” (Cohen et al., 2007; Shadab, 2008; Barger et al., 2010). Good internal control is often accompanied by a higher quality of information, and good internal control can also reduce financial constraints by improving the quality of financial reports and enhancing transparency, which can help lower costs and increase opportunities for better financial sources (Ogneva et al., 2007; Gordon & Wilford, 2012).

The business attack strategy (CLC) includes four attributes, all of which have been rated with a score of 3.63 or higher. With this strategy, aquaculture enterprises are maintaining their competitive edges and capitalizing on new products and opportunities. Enterprises employing this strategy tend to be those that lead the industry by continuously expanding the market for their products with a variety of products and competitive prices.

The analysis strategy (CLP) includes five attributes, all of which are rated with a score of 3.82 or higher. With this strategy, aquaculture enterprises are trying to maintain their market shares and seek opportunities to explore the market and new products. To achieve such objectives, they need creative business initiatives, such as exploring and applying new and improved technology to optimize production lines to reduce costs and create fresh goods and services to satisfy consumer demand.

A business’s defensive strategy (CLT) includes four attributes, all of which are rated with a score of 4.26 or higher. With this strategy, aquaculture enterprises are maintaining products and services for a small market by promoting competitive prices and product quality. As a result, these enterprises focus on managing and reducing costs to lower the price by maximizing the use of business and production technology to optimize their procedures and improve the performance of the enterprise.

4.2. Cronbach’s alpha

Scale analysis can be used to get rid of inconsistent variables and lower the research model’s error rate. Accordingly, only variables with Cronbach’s alpha coefficients equal to or more than 0.6 and total correlation coefficients (adjusted item-total correlation) larger than 0.3 are acceptable (Hoang & Chu, 2008; Hair et al., 2010). Table 2 displays the results of a Cronbach’s alpha analysis of three determinants with thirteen observable variables that affect the internal control of aquaculture enterprises in Vietnam. The outcome demonstrates that all corrected item-total correlations of the observed variables are above 0.3 and all Cronbach’s alpha coefficients are above 0.6. For the upcoming studies, all of the study model’s variables are appropriate (Hair et al., 2010).

Table 2. Findings from the determinants analysis scales' confidence in the model

| Variable | Scale mean if item deleted | Scale variance if item deleted | Corrected item-total correlation | Cronbach's alpha if item deleted |
|---|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| Internal control (KSNB): 0.888, N = 5 | | | | |
| KSNB-MTKS | 14.7022 | 5.460 | 0.726 | 0.865 |
| KSNB-RR | 14.9822 | 5.250 | 0.702 | 0.873 |
| KSNB-KS | 14.8089 | 5.637 | 0.729 | 0.864 |
| KSNB-TT | 14.6978 | 5.721 | 0.740 | 0.863 |
| KSNB-GS | 14.8000 | 5.455 | 0.762 | 0.857 |
| Attack strategy (CLC): 0.826, N = 4 | | | | |
| CLC1 | 11.22 | 2.924 | 0.569 | 0.815 |
| CLC2 | 11.40 | 2.876 | 0.565 | 0.817 |
| CLC3 | 11.25 | 2.473 | 0.705 | 0.754 |
| CLC4 | 11.22 | 2.385 | 0.772 | 0.720 |
| Analysis strategy (CLP): 935, N = 5 | | | | |
| CLP1 | 15.56 | 7.632 | 0.762 | 0.932 |
| CLP2 | 15.64 | 7.319 | 0.881 | 0.910 |
| CLP3 | 15.62 | 7.353 | 0.851 | 0.916 |
| CLP4 | 15.47 | 7.411 | 0.771 | 0.931 |
| CLP5 | 15.58 | 7.101 | 0.874 | 0.911 |
| Defensive strategy (CLT): 0.877, N = 4 | | | | |
| CLT1 | 12.84 | 3.840 | 0.729 | 0.844 |
| CLT2 | 12.88 | 3.897 | 0.720 | 0.848 |
| CLT3 | 12.92 | 3.747 | 0.747 | 0.837 |
| CLT4 | 12.89 | 3.917 | 0.743 | 0.839 |

4.3. Exploratory factor analysis

Thirteen independent variables attributes were obtained by using component analysis and varimax in EFA.

Component analysis results in Table 3 demonstrate that $0.5 < \text{Kaiser-Meyer-Olkin (KMO) measure} = 0.873 < 1$. According to Bartlett's evidence, there is a correlation between the variables overall (Sig. = 0.000 < 0.05).

Three determinants with load factors more than 0.5, eigenvalues more than 1, and a variance explained of 73.788% were found after the rotation

matrix was implemented (see Table 4). These figures show that factor discovery research data analysis is appropriate. Three factors have been found to influence the internal control of Vietnamese aquaculture companies through the quality assurance of the scale and the EFA model test (Hair et al., 2010).

Table 3. Kaiser-Meyer-Olkin and Bartlett's test

| | | |
|--|--------------------|-----------|
| Kaiser-Meyer-Olkin measure of sampling adequacy | 0.873 | |
| Bartlett's test of sphericity | Approx. Chi-square | 2,021.467 |
| | df | 78 |
| | Sig. | 0.000 |

Table 4. Total variance explained

| Component | Initial eigenvalues | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % |
| 1 | 6.018 | 46.293 | 46.293 | 6.018 | 46.293 | 46.293 | 3.994 | 30.723 | 30.723 |
| 2 | 1.834 | 14.105 | 60.397 | 1.834 | 14.105 | 60.397 | 2.953 | 22.712 | 53.435 |
| 3 | 1.741 | 13.391 | 73.788 | 1.741 | 13.391 | 73.788 | 2.646 | 20.353 | 73.788 |
| 4 | 0.647 | 4.978 | 78.766 | | | | | | |
| 5 | 0.561 | 4.315 | 83.081 | | | | | | |
| 6 | 0.448 | 3.450 | 86.530 | | | | | | |
| 7 | 0.393 | 3.020 | 89.550 | | | | | | |
| 8 | 0.353 | 2.712 | 92.262 | | | | | | |
| 9 | 0.303 | 2.328 | 94.591 | | | | | | |
| 10 | 0.251 | 1.929 | 96.519 | | | | | | |
| 11 | 0.205 | 1.577 | 98.096 | | | | | | |
| 12 | 0.153 | 1.177 | 99.273 | | | | | | |
| 13 | 0.094 | 0.727 | 100.000 | | | | | | |

4.4. Regression model analysis

$$KSNB = \alpha + \beta_1 CLC + \beta_2 CLP + \beta_3 CLT \quad (1)$$

We employ a multiple regression model in the manner described below, based on the adjusted model following the EFA.

Results from Tables 5, 6, and 7 show that the suggested model fully fits the data that was gathered, as indicated by the R-value of 0.768.

Table 5. Model summary

| Model | R | R-square | Adjusted R-square | Std. error of the estimate | Durbin-Watson |
|-------|-------|----------|-------------------|----------------------------|---------------|
| 1 | 0.768 | 0.589 | 0.584 | 0.64508369 | 1.670 |

Note: Predictors (Constant): CLP, CLT, CLC. Dependent variable: KSNB.

Table 6. Analysis of variance

| Model | Sum of squares | df | Mean square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------|
| Regression | 132.035 | 3 | 44.012 | 105.763 | 0.000 |
| Residual | 91.965 | 221 | 0.426 | | |
| Total | 224.000 | 224 | | | |

Note: Predictors (Constant): CLP, CLT, CLC. Dependent variable: KSNB.

Table 7. Coefficients

| Model | Unstandardized coefficients | | Standardized coefficients | T | Sig. | Collinearity statistics | |
|----------|-----------------------------|------------|---------------------------|-------|-------|-------------------------|-------|
| | B | Std. error | Beta | | | Tolerance | VIF |
| Constant | -6.821E-17 | 0,043 | | 0.000 | 1.000 | | |
| CLP | 0.405 | 0.046 | 0.405 | 8.740 | 0.000 | 0.864 | 1.158 |
| CLT | 0.423 | 0.047 | 0.423 | 9.081 | 0.000 | 0.855 | 1.170 |
| CLC | 0.201 | 0.047 | 0.201 | 4.316 | 0.000 | 0.854 | 1.171 |

Note: Dependent variable: KSNB. VIF — variance inflation factor.

Testing for multicollinearity reveals that the model has low multicollinearity since all of the independent variables' variance inflation factors (VIF) are less than 2 (Hoang & Chu, 2008; Hair et al., 2010). As a result, none of the fundamental presumptions of the classical linear regression model (CLRM) are broken by this regression model.

The results of the analysis of variance (ANOVA) test indicate that the multiple regression model is appropriate for the data, with a level of significance (Sig. = 0.000).

The regression model will account for 58.9% of the variation in the internal control of Vietnamese aquaculture companies, according to the coefficient of R-square (R^2) = 0.589.

The whole regression model is significant, and the F-value of 105.763 and the significance level of Sig. = 0.000 show that corporate strategy explains the change in internal control well.

The beta coefficients of CLP, CLT, and CLC are 0.405, 0.423, and 0.201, respectively, with a significance level of 0.000. These values indicate that internal control is significantly impacted by corporate strategy. Put differently, the findings of the research model show that the three independent variables — CLP, CLT, and CLC — have a substantial impact on the internal control of Vietnamese aquaculture enterprises (Sig. < 0.05).

The following standardized regression model presents the factors that affect the internal control of Vietnamese aquaculture companies:

$$KSNB = 0.405CLP + 0.423CLT + 0.201CLC \quad (2)$$

Thus, H1, H2, and H3 are supported.

4.5. Discussion

Three company strategy components significantly affect internal control, of which the CLP factor has the strongest influence, followed by the CLT factor, and the third strongest factor is CLC.

The regression weights of the variables defensive strategy (CLT), analysis strategy (CLP), and attack strategy (CLC) are 0.423, respectively; 0.405 and 0.201 have positive values. This means that when defensive strategy (CLT), analysis strategy (CLP), and attack strategy (CLC) are good, internal control also tends to increase and become more effective. This result is similar to the conclusions of Porter (1980), Auzair (2011), and Pham (2014).

Internal control includes components that are correlated and help the enterprise prevent risks and

achieve objectives. Managing risks effectively helps organizations enhance their performance and competitive edges and guarantee sustainable growth within the framework of international integration.

Industry structure determines the behaviour and business strategy of enterprises. Therefore, aquaculture enterprises systematically implement export business strategies, focusing on studying the business environment and the market as well as developing new products.

The aquaculture processing industry is a significant and leading industry in the context of global integration. Aquaculture has a favourable impact on the restructuring of the agricultural and rural economies as it expands quickly and profitably, helps eliminate poverty, creates jobs for millions of workers, and improves the living standards of communities across the country. In addition, it contributes greatly to the security and protection of the country's sovereignty over its seas and islands.

According to Thy (2023), the demand for domestic seafood consumption is increasing; the average seafood consumption of Vietnamese people is estimated at about 35 kg/year, quite high compared to many other countries in the region. Vietnam has a large population, with more than 98 million people. This is a potential consumer market for aquatic products. Therefore, even when the export market poses difficulties, the domestic market can help enterprises stabilize their production.

Aquaculture is one of Vietnam's strong export products, and the industry's export markets include the United States, Japan, China, the EU, South Korea, ASEAN, and Canada. According to Ms. Nguyen Thi Thu Nguyet, Deputy Director General in the Directorate of Fisheries, Ministry of Agriculture and Rural Development, in 2022, the total output of seafood reached 9.06 million tons, up 3.1% from 2021 (8.79 million tons), with a 3% increase in value from 2021 to 2022 (K. Nguyen, 2023). This speaks to the necessity of business strategy and internal control in aquaculture enterprises.

5. CONCLUSION

This study has summarized previous research on internal control and constructed and measured it with a descriptive analysis model to study the influence of business strategies and internal control in aquaculture enterprises in Vietnam.

The paper also proposes a novel method for defining internal control content, dividing it into

five categories: 1) control environment; 2) risk assessment; 3) control activities; 4) information and communications; and 5) monitoring.

Different business strategies have different impacts on internal control.

By analyzing these variables, it is shown that aquaculture firms need internal control to accomplish their objectives and strategies. Enterprises need to have flexible internal control that matches their characteristics and the environment's changes to ensure stable production and business. To achieve this goal, business strategies and other special traits

of enterprises should be seriously considered as they design their internal controls.

Due to limitations in time and resources, the study inevitably had limitations in sample size and survey time. Future studies on the connection between internal control and company strategy must broaden their scope to cover larger and more varied sample groups, including many different subjects and locations. Research effective methods and strategies to strengthen internal control. Propose and develop specific strategies and policies to promote the development of internal control.

REFERENCES

- Adamec, B. A., Rexroad, W. M., Leinicke, L. M., & Ostrosky, J. A. (2002). Internal reflection: Management's self-assessment of its performance can be an effective and powerful way to enhance an organization's control processes. *Internal Auditor*, 59(6), 56-63. <https://link.gale.com/apps/doc/A95572086/AONE?u=anon~975d011e&sid=googleScholar&xid=6a6c2edb>
- Agbejule, A., & Jokipii, A. (2009). Strategy, control activities, monitoring and effectiveness. *Managerial Auditing Journal*, 24(6), 500-522. <https://doi.org/10.1108/02686900910966503>
- Anh, D. T. (2017). *Nghiên cứu kiểm soát nội bộ trong các doanh nghiệp xây dựng niêm yết trên thị trường chứng khoán Việt Nam* [Researching internal control in construction enterprises in Vietnam stock market]. [Doctoral dissertation, National Economics University]. https://sdh.neu.edu.vn/xem-tai-lieu/nghien-cuu-sinh-dang-thuy-anh-bao-ve-luan-an-tien-si_18759.html
- Asiligwa, M., & Rennox, G. (2017). The effect of internal controls on the financial performance of commercial banks in Kenya. *Journal of Economics and Finance*, 8(3), 92-105. <http://doi.org/10.9790/5933-08030492105>
- Auzair, S. M. (2011). The effect of business strategy and external environment on management control systems: A study of Malaysian hotels. *International Journal of Business and Social Science*, 2(13), 236-244. https://ijbssnet.com/journals/Vol._2_No._13_Special_Issue_July_2011/28.pdf
- Barger, L. L., Lehn, K. M., & Zutter, C. J. (2010). Sarbanes-Oxley and corporate risk-taking. *Journal of Accounting and Economics*, 49(1-2), 34-52. <https://doi.org/10.1016/j.jacceco.2009.05.001>
- Bashaija, W. (2022). The effect of internal control systems on the financial performance of commercial banks in Rwanda. *Journal of Finance and Accounting*, 10(6), 244-252. <http://www.sciencepublishinggroup.org/article/10.11648/j.jfa.20221006.12>
- Cohen, D. A., Dey, A., & Lys, T. Z. (2007). *The Sarbanes-Oxley Act of 2002: Implications for compensation contracts and managerial risk-taking*. <http://doi.org/10.2139/ssrn.568483>
- Committee of Sponsoring Organizations of the Treadway Commission (COSO). (1992). *Internal control — Integrated framework*. American Institute of Certified Public Accountants (AICPA).
- Committee of Sponsoring Organizations of the Treadway Commission (COSO). (2013). *Internal control — Integrated framework*. American Institute of Certified Public Accountants (AICPA). <https://www.coso.org/guidance-on-ic>
- Decree No. 5/2019/ND-CP of the Vietnam Government stipulates internal audit work in state agencies, public non-business units, and firms. (2019). <https://datafiles.chinhphu.vn/cpp/files/vbpq/2019/01/05.signed.pdf>
- Dent, J. F. (1990). Strategy, organization and control: Some possibilities for accounting research. *Accounting, Organizations and Society*, 15(1-2), 3-25. [https://doi.org/10.1016/0361-3682\(90\)90010-R](https://doi.org/10.1016/0361-3682(90)90010-R)
- Do, V. P. A. (2022). Các nhân tố ảnh hưởng tới hoạt động kiểm soát nội bộ trong các doanh nghiệp ở Việt Nam [Determinants influencing internal controls of firms in Vietnam]. *Journal of Economics and Development*, 30(5), 2-9. <https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2022/So%20305/380772.pdf>
- Dropulic, I. (2013). The effect of contingency factors on management control systems: A study of manufacturing companies in Croatia. *Economic Research-Ekonomska Istraživanja*, 26(1), 369-382. <https://doi.org/10.1080/1331677X.2013.11517657>
- Farida, I., & Sutopo, B. (2023). The nexus between digital innovation technology and competitive advantage: Mediated by management business strategy. *Corporate Governance and Organizational Behavior Review*, 7(1), 18-28. <https://doi.org/10.22495/cgobr7i1p2>
- Gordon, L. A., & Wilford, A. L. (2012). An analysis of multiple consecutive years of material weaknesses in internal control. *The Accounting Review*, 87(6), 2027-2060. <https://doi.org/10.2308/accr-50211>
- Gupta, A. K., & Govindarajan, V. (1984). Business unit strategy, managerial characteristics and business unit effectiveness at strategy implementation. *Academy of Management Journal*, 27(1), 25-41. <https://www87.homepage.villanova.edu/kevin.d.clark/GuptaGovindarajan%20HQ%20subsidiary%20relations%20AMJ%201984.pdf>
- Hair, J. F., Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson.
- Ho, T. V. (2016). *Các nhân tố ảnh hưởng đến sự hữu hiệu của hệ thống kiểm soát nội bộ trong các ngân hàng thương mại Việt Nam* [Factors influence on the effectiveness of the internal control system in commercial banks] [Doctoral dissertation, University of Economics Ho Chi Minh City]. http://tailieudientu.lrc.tnu.edu.vn/Upload/Collection/brief/brief_57967_20171019101940_ho%20tuan%20vu.pdf
- Hoang, N. Q. (2022). *Nghiên cứu các yếu tố của kiểm soát nội bộ tác động tới hiệu quả kinh doanh tại các doanh nghiệp vận tải đường bộ Việt Nam* [The impact of internal control on performance of Vietnamese road transportation firms] [Doctoral dissertation, National Economics University]. https://sdh.neu.edu.vn/xem-tai-lieu/nghien-cuu-sinh-hoang-nguyet-quyen-bao-ve-luan-an-tien-si_21334.html
- Hoang, T., & Chu, N. M. N. (2008). *Phân tích dữ liệu nghiên cứu với SPSS* [Analyzing researched data with SPSS] (2nd ed.). Hong Duc Publishing House.

- Istianingsih, & Suraji, R. (2020). The impact of competitive strategy and intellectual capital on SMEs performance. *Jurnal Manajemen*, 24(3), 427-442. <https://doi.org/10.24912/jm.v24i3.677>
- Law on Accounting No. 88/2015/QH13. (2015). National Assembly. https://www.economica.vn/Content/files/LAW%20%26%20REG/88_2015_QH13%20Law%20on%20accounting.pdf
- Le, Q. H., Do, V. P. A., Nguyen, H. N., & Nguyen, T. H. (2022). The role of internal control in innovation activities of small and medium-sized private enterprises in Vietnam. *Kinh Tế Và Phát Triển/Journal of Economics and Development*, 297, 22-30. <https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2022/So%20297/380623.pdf>
- Le, T. L. H., & Nguyen, T. P. L. (2018). Tác động của văn hóa tổ chức đến hệ thống kiểm soát nội bộ trong các công ty cổ phần Việt Nam [Impact of organizational culture on internal control system in Vietnamese Joint Stock firms]. *Journal of Economics and Development*, 255(2), 10-19. [https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2018/So%20255\(II\)/379042.pdf](https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2018/So%20255(II)/379042.pdf)
- Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J., Jr. (1978). Organizational strategy, structure, and process. *The Academy of Management Review*, 3(3), 546-562. <https://doi.org/10.2307/257544>
- Miller, D., & Dröge, C. (1986). Psychological and traditional determinants of structure. *Administrative Science Quarterly*, 31(4), 539-560. <https://doi.org/10.2307/2392963>
- Muhtar, M., Winarna, J., & Sutaryo, S. (2023). Internal control weakness and corruption: Empirical evidence from Indonesian local governments. *International Journal of Professional Business Review*, 8(6), Article e01278. <https://doi.org/10.26668/businessreview/2023.v8i6.1278>
- Nguyen, D. T. (2011). *Research methods in business*. Social Labor Publishing House.
- Nguyen, K. (2023, January 14). Xuất khẩu thủy sản năm 2022 — Vì sao đạt đỉnh? [Seafood exports in 2022 — Why peaked?]. *Quân Đội Nhân Dân*. <https://www.qdnd.vn/kinh-te/cac-van-de/xuat-khau-thuy-san-nam-2022-vi-sao-dat-dinh-716516>
- Nguyen, T. H. L. (2019). *Assessing the impact of internal control structure on the effectiveness of internal control in Vietnamese public non-business units* [Doctoral dissertation, University of Economics].
- Nguyen, T. K. A., & Nguyen, P. H. (2018). Ảnh hưởng của kiểm soát nội bộ đến hiệu quả hoạt động của các doanh nghiệp thuộc tổng công ty lâm nghiệp Việt Nam [Impact of internal control on efficiency of Vietnamese firms in forestry]. *Journal of Economics and Development*, 254(2), 48-54. [https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2018/So%20254\(II\)/379000.pdf](https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2018/So%20254(II)/379000.pdf)
- Nguyen, T. N. L., Vu, T. K. A., & Bui, T. N. (2023). Impact of internal control on the quality of accounting information at enterprises listed on the stock market in Vietnam. *International Journal of Professional Business Review*, 8(5), Article e01010. <https://doi.org/10.26668/businessreview/2023.v8i5.1010>
- Nguyen, T. Q., Nguyen, X. H., & Tran, M. D. (2021). Ảnh hưởng của kiểm soát nội bộ đến hiệu quả tài chính của các công ty niêm yết trên sàn Chứng Khoán Việt Nam [The impact of internal control on financial performance of listed firms on Vietnam Stock Exchange]. *Kinh Tế Và Phát Triển/Journal of Economics and Development*, 292(2), 46-55. <https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2021/So%20292%20tap%202/380571.pdf>
- Nguyen, T. Q., Pham, T. T. H., Tran, M. D., Pham, V. H., & Nguyen, T. L. (2023). Impact of internal control on the performance of non-financial listed firms in an emerging country. *Corporate Governance and Organizational Behavior Review*, 7(2), 178-189. <https://doi.org/10.22495/cgobrv7i2p16>
- Nguyen, T., & Duong, N. H. (2018). Phân tích ảnh hưởng của kiểm soát nội bộ đến mục tiêu kiểm soát ngân hàng thương mại Việt Nam [Studying the impact of internal control on control objectives of Vietnamese commercial banks]. *Journal of Economics and Development*, 247, 52-62. <https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2018/So%20247/375821.pdf>
- Nguyen, V. H. (2023). Evaluation of internal control in aquaculture firms in Vietnam. *International Journal of Advanced Multidisciplinary Research and Studies*, 3(2), 170-175. <https://www.multiresearchjournal.com/arclist.php?list=2023.3.2&id=1000>
- Ogneva, M., Subramanyam, K. R., & Raghunandan, K. (2007). Internal control weakness and cost of equity: Evidence from SOX section 404 disclosures. *The Accounting Review*, 82(5), 1255-1297. <https://doi.org/10.2308/accr.2007.82.5.1255>
- Onufrey, K., & Bergek, A. (2021). Transformation in a mature industry: The role of business and innovation strategies. *Technovation*, 105, Article 102190. <https://doi.org/10.1016/j.technovation.2020.102190>
- Onumah, E. E., Onumah, J. A., & Onumah, G. E. (2018). Production risk and technical efficiency of fish farms in Ghana. *Aquaculture*, 495, 55-61. <https://doi.org/10.1016/j.aquaculture.2018.05.033>
- Otley, D. T. (1980). The contingency theory of management accounting: Achievement and prognosis. *Accounting, Organizations and Society*, 5(4), 413-428. [https://doi.org/10.1016/0361-3682\(80\)90040-9](https://doi.org/10.1016/0361-3682(80)90040-9)
- Pham, Q. H. (2014). Discuss COSO 2013 and application orientation in monitoring the implementation of business strategy. *Journal of Development and Integration*, 15(25), 29-33.
- Pham, T. B. T. (2017). Ảnh hưởng của môi trường kiểm soát đến tính hữu hiệu của kiểm soát nội bộ tại các doanh nghiệp bia — Rượu — Nước giải khát Việt Nam [The impact of control environment on the effectiveness of internal control in beer — Alcohol beverage companies of Vietnam]. *Journal of Economics and Development*, 242(2), 67-80. [https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2017/S%E1%BB%91%20242\(II\)/375701.pdf](https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2017/S%E1%BB%91%20242(II)/375701.pdf)
- Pham, T. T. (2019). Ảnh hưởng của kiểm soát nội bộ đến độ tin cậy của thông tin tài chính trong các doanh nghiệp nhỏ và vừa [The influence of internal control on the reliability of financial information in small and medium enterprises]. *Industry and Trade Journal*, 231, 24-34. <https://tapchicongthuong.vn/anh-huong-cua-kiem-soat-noi-bo-den-do-tin-cay-cua-thong-tin-tai-chinh-trong-cac-doanh-nghiep-nho-va-vua-64515.htm>
- Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. Free Press.
- Rodrigues, A. M., Stank, T. P., & Lynch, D. F. (2004). Linking strategy, structure, process, and performance in integrated logistics. *Journal of Business Logistics*, 25(2), 65-94. <https://doi.org/10.1002/j.2158-1592.2004.tb00182.x>
- Shadab, H. B. (2008). Innovation and corporate governance: The impact of Sarbanes-Oxley. *Journal of Business and Employment Law*, 10(4), 955-1008. <https://scholarship.law.upenn.edu/jbl/vol10/iss4/5>
- Simons, R. (1995). *Levers of control: How Managers use innovative control systems to drive strategic renewal*. Harvard Business School Press.

- Thy, H. (2023, November 23). *Thủy sản Việt Nam “lơ là” với thị trường nội địa* [Vietnamese seafood “neglects” the domestic market]. Tepbac. <https://tepbac.com/tin-tuc/full/thuy-san-viet-nam-lo-la-voi-thi-truong-noi-dia-35885>
- Tien, D. N., & Thanh, H. H. (2023). The impacts of internal audit practices on the quality of internal control in Vietnamese SMEs. *International Journal of Professional Business Review*, 8(5), Article e02027. <https://doi.org/10.26668/businessreview/2023.v8i5.2027>
- Tran, T. T., & Tran, T. S. L. (2021). Ảnh hưởng của quy mô doanh nghiệp tới kiểm soát nội bộ trong các doanh nghiệp dệt may Việt Nam [The impact of firm size on internal control in Vietnamese textile and garment firms]. *Kinh Tế Và Phát Triển/Journal of Economics and Development*, 291(9), 97-86. <https://ktpt.neu.edu.vn/Uploads/Bai%20bao/2021/So%20291/380527.pdf>