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**RESEARCH ARTICLE**

# Effects of International Organization for Standardization on the Management Efficiency and Value of the Company in the Market for Alternative Investment (MAI)

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**ABSTRACT**

Economic growth has driven the business sector to engage in capital raising within the Market for Alternative Investment (MAI). However, numerous companies face production issues that do not adequately reflect environmental responsibility, a key factor influencing investor decisions. This research investigates the effects of corporate quality standards, specifically ISO 14000 and ISO 26000, on the management performance and business value of 103 companies listed on the MAI. The study utilized secondary data from annual reports and financial statements covering 2017 to 2019. The analytical methods employed included frequency distribution, percentage, average, standard deviation, and multiple regression analysis. Results indicated that ISO 14000 was predominantly adopted, particularly within the INDUS group, comprising seven companies, whereas only the TECH group had two companies utilizing ISO 26000. The regression analysis demonstrated that adopting ISO 14000 and ISO 26000 standards significantly impacted management efficiency and business value, with both standards showing statistically significant effects at the 0.05 level. Key variables influencing business value included the extent of ISO 14000 and ISO 26000 adoption, evidenced by their positive contributions to Tobin's Q. This study emphasizes the importance of environmental and social responsibility in enhancing business performance and attracting investor interest, highlighting the value of integrating these international quality standards to achieve sustainable and responsible business operations.

## INTRODUCTION

The current rapid growth of the Thai economy has caused significant environmental degradation, directly impacting people and natural resources. Problems such as air pollution, decreasing wildlife populations, destruction of forest resources, soil erosion, water shortages, and overflowing waste in cities are prevalent. According to (Planning, 2019), the unbalanced and wasteful use of natural resources by businesses poses a severe threat to nature. The inability to manage resources efficiently, coupled with unfair access, has led to conflicts over natural resource use, affecting future generations. These issues, arising alongside economic growth, deteriorate the quality of life and the economic chain.

Corporate Social Responsibility (CSR) has become increasingly important as both domestic and foreign investors and companies prioritize environmental and social governance. Businesses that demonstrate responsibility in these areas tend to attract more investment, fostering greater awareness in Thai society about natural resource degradation and good governance, which promotes social equality. Environmental and corruption issues significantly impact a company's economic sustainability in Thailand and globally (Wiriyapipat, 2009).

Companies listed on the Stock Exchange of Thailand (SET) have adopted corporate quality standards to enhance business efficiency. The International Organization for Standardization (ISO) provides strategic tools for standardizing production processes, ensuring quality, safety, and reliability. ISO standards, such as ISO 14000 and ISO 26000, help reduce waste, increase productivity, and enhance competitiveness by enabling companies to access new markets under a global economy of free trade (Figure. 1). ISO 14000 focuses on corporate environmental management to minimize environmental impact (Figure. 1a), while ISO 26000 emphasizes social responsibility to meet societal environmental needs (Figure. 1b). These standards are crucial for achieving sustainable development in Thailand ((SET), 2021).


Source:scontent.fbkk5-3.fna.fbcdn.net/v/

a) Environmental Management Standards (ISO 14000).


Source:senyumnegeri.id/what-benefits-implementing-csr-program-by-iso-26000/

b) Social Responsibility (ISO 26000)

**Figure. 1: Overview of ISO Standards.**

Many businesses, however, lack awareness of social responsibility, focusing primarily on maximizing wealth. ISO 14000 and ISO 26000 standards are essential for creating operational efficiency and social responsibility within organizations. Companies that adhere to these standards can qualify for CSR awards, further attracting investors (Phanthip Yangklan & Titaporn Sincharoonsak, 2021).

The Market for Alternative Investment (MAI) is Thailand's second stock exchange, similar to SET, but focusing on Small and Medium Enterprises (SMEs) and innovative businesses with reduced criteria for minimum paid-up capital. MAI provides opportunities for SMEs to join the joint venture industry. Studies have shown that organizational quality standards significantly contribute to the success of business operations, revealing a clear relationship between these standards and business performance (ISO 9001 and related standards quality management, 2018). Understanding and adapting to these standards is crucial for new entrepreneurs entering the capital market (Group, 2021).

This study aims to examine how corporate quality standards affect the management efficiency and business value of companies on the MAI. The findings will serve as guidelines for investors in decision-making and as tools for government agencies and the private sector to manage organizations successfully, build credibility with stakeholders, and achieve sustainable ISO certification.

## 2. LITERATURE REVIEW

The issue of social responsibility that was announced in 2010 is an accelerating factor for organizations to adjust their business direction with CSR. Organizational leaders need to build more knowledge and a clear understanding of this practice by changing the concept from "creating an image by giving" to "creating value for society and the organization". CSR should be applied when the organization faces economic crises along with strategic driving through ISO 26000 (Wiriyapipat, 2009). Modern executives are beginning to realize the importance of environmental responsibility to help organizations compete more effectively (Bloomfield & Vurdubakis, 1997). Under the current situation where the world is beset by environmental problems, some organizations have integrated their environmental management activities into their business strategies.They believe that environmental management is an essential component of enhancing the competitiveness of a business organization. Organizations with high environmental management capabilities can effectively cope with stringent legal or environmental requirements. The development of environmental competence contributes to enhancing the corporate image. The organization will be accepted by the community, society, and consumers, especially the new generation of consumers who see that such issues are important to the environment (Wichaprasert, 2010; Kanval et al., 2024).

ISO 14000 is an international standard that is important for the development of an organization to advance and be accepted both commercially and socially because it helps organizations to define policies and objectives, requirements, and regulations. It also helps build a good image for an organization and helps organizations comply with laws to mitigate the potential risks of illegal practices. It is one of the standards to manage environmental issues of the organization effectively along with protecting the environment, preventing pollution from the business operations of the organization, and achieving the specified environmental policy. ISO 14000 can develop an environmental management system in terms of pollution and energy consumption into a sustainable system in 3 ways. 1) It is cost-effective in raw material management and various forms of energy consumption effectively, which results in cost savings, waste reduction, and less utility power consumption. 2) It helps drive the management improvement of the organization continually and evolve every year in the field of pollution prevention and natural resource reduction. And 3) it helps industries that use natural resources energy and cause environmental impacts to comply with energy conservation laws. Therefore, ISO 14000 can help increase trade competitiveness, especially among trade partners or competitors that focus on environmental issues. The organization is more accepted and trusted by society, institutions, and agencies. Production costs can be reduced by planning the use of resources and reducing the cost of troubleshooting and waste treatment. The organization can build a good reputation and increase the potential of expanding international markets through environmental management, especially the industrial sectors that affect the environment and are aware of their responsibility to the environment. Currently, the ISO 14001 standard is clearly linked to the environment and there will be a trade advantage for the organizations that are certified by ISO 14001 (International Organization for Standardization I, 2021). The organizations can build good relations with external society because their production does not affect the community or society outside. Thus, this standard became a necessity for international trade and industry competition (Financial & Committee, 1998).

ISO 26000is a standard that demonstrates guidance for organizations to operate with transparent actions and social responsibility, which can lead to sustainable development. The principles can be effectively implemented by integrating social responsibility into one's operations and promoting socially responsible behavior in the organization through policies and guidelines. Organizations need to consider the appropriate application of ISO 26000 to a variety of social, environmental, legal, cultural, political, organizational, and economic conditions to build confidence and trust in business operations and confidence in risk management for stakeholders .It also promotes innovation in the organization, builds a good relationship with investors, helps the organization move towards sustainable development and growth, increases competitiveness, and engages all stakeholders. This practice is supported by (Freeman, 1984) which considers the needs, interests, and effects of the policies and operations of the organization that cause impacts on relevant stakeholders both inside and outside the organization. Whether an organization survives or collapses depends on the legitimacy that exists between the stakeholders and the organization (McWilliams & Siegel, 2001). Therefore, this theory stimulates activities related to social responsibility (Bansal & Roth, 2000; Fineman & Clarke, 1996; Toukabri, Jilani, & Jemâa, 2014; Rasid et al., 2023). Often, executives were pressured by shareholders to increase the company's value meanwhile some stakeholders, such as government, employees, customers, and local communities, are committed to the role of the organization in the stewardship of the environment and management of the environmental policies. It is observed by (Céspedes-Lorente, De Burgos-Jiménez, & Álvarez-Gil, 2003) that the stakeholders have the power to influence the management's strategic planning of the organization in protecting the environment.

## 3. METHODOLOGY

This section outlines the research methodology employed to examine the impact of ISO 14000 and ISO 26000 standards on the management efficiency and business value of companies listed on the Market for Alternative Investment (MAI). The methodology encompasses the identification of the population and sample size, data collection methods, research tools, and data analysis techniques. By providing a comprehensive overview of these components, the study aims to enhance the transparency and credibility of its findings.

### 3.1 Population and Sample Size

The population for this research comprised 139 companies across eight industry groups on the MAI that maintained continuous operations from 2017 to 2019. These industry groups included Financial, Technology, Agriculture, Property and Construction, Consumer Products, Services, Industrials, and Resources. To ensure a statistically significant sample size, Taro Yamane's formula was employed, setting the confidence level at 0.05. The formula for determining sample size is as follows (Yamane, 1973):

$$n = \frac{N}{1 + Ne^2}$$

Where:

- $n$ is the sample size
- $N$ is the population size
- $e$ is the level of precision (0.05 for this study)

From the calculation, the sample size in this research included 103 companies in 8 industry groups, as shown in Table 1.

**Table 1: Summary of 8 Industrial Groups (2021-2022)**

| Industry group | Population **20**23 | Population 2017-2019 | Number of samples |
|---|---|---|---|
| FINANCIAL | 57 | 9 | 8 |
| TECH | 44 | 9 | 5 |
| AGRO | 58 | 9 | 7 |
| PROPCON | 96 | 20 | 12 |
| CONSUMP | 38 | 10 | 9 |
| SERVICE | 106 | 35 | 26 |
| INDUS | 74 | 35 | 25 |
| RESOURCE | 50 | 12 | 11 |
| Total | 523 | 139 | 103 |
| Source: Structure of industry grouping in the MAI, 2019 | | | |

Table 1 provides a summary of the population across 8 industrial groups from 2017-2019, highlighting the number of companies in each group during that period, as well as the corresponding sample size used in the study. For instance, the FINANCIAL group had 9 companies between 2017-2019, from which 8 companies were sampled. Similarly, the SERVICE group had 35 companies in the population, from which 26 were included in the sample.

### 3.2. Data collection method

This empirical research used secondary data from various reputable sources to ensure comprehensive and accurate information. The data collection process is divided into two main parts: gathering information about the independent variables and the dependent variables.

**1) Information about Independent Variables**: The independent variables are the organizational quality standards (ISO 14000 and ISO 26000) of 103 companies. Data were gathered from:

- Annual Reports and Form 56-1: Detailed information was extracted from the companies' annual reports and the annual report form (Form 56-1).
- Company Websites: Additional data were collected from the companies' official websites.
- Securities and Exchange Commission (SEC) Thailand's Website: The SEC's website (www.sec.or.th) was used to verify and supplement the data.

**2) Information about Dependent Variables:** The dependent variable is the management efficiency, measured through the business value of companies using Tobin's Q. Data were collected from:

- Company Financial Reports: These reports provided the necessary financial statements and notes.
- DataStream: This database was used to obtain market values and financial metrics.
- SETSMART (www.setsmart.or.th): This platform provided comprehensive stock prices and financial ratios necessary for calculating Tobin's Q.

By utilizing these multiple sources, we ensured that the data collected were robust, reliable, and up-to-date, providing a solid foundation for accurately assessing the impact of ISO standards on the management efficiency and business value of companies listed on the MAI.

### 3.3 Research tools

The research tools employed in this study focus on measuring the impact of ISO 14000 and ISO 26000 standards on management efficiency and business value, represented by Tobin's Q. The independent variables in this research are ISO 14000 and ISO 26000 certifications, while the dependent variable is Tobin's Q Ratio. Additionally, company size is used as a control variable to account for variations due to scale.

The simplified Tobin's Q formula, as proposed by Chung and Pruitt (1994), was utilized in this study. Tobin's Q is a measure of a firm's market value relative to its asset replacement cost. A higher Tobin's Q indicates that the market values the firm more highly than the cost of its assets, reflecting positive market perceptions and potentially better management efficiency.

To simplify the calculation, the formula was adapted to use the book value of assets instead of their replacement cost (Phadungsit, 2005). The components required for calculating Tobin's Q include the Market Value of Equity (MVE), which is calculated by multiplying the market price of the company's ordinary shares by the number of shares currently outstanding; the Market Value of Preferred Shares (PS), which is the redemption value of preferred shares; the Market Value of Debt (DEBT), which includes both short-term and long-term liabilities as recorded on the balance sheet; and the Book Value of Assets (BVA), which represents the total value of the company's assets as listed on the balance sheet, reflecting their historical cost or adjusted value. The formula for Tobin's Q is as follows:

$$T_Q = \frac{MVE + PS + DEBT}{BVA}$$

Where:

$MVE$ : Market Value of Ordinary Shares

$PS$ : Market Value of Preferred Shares

$DEBT$ : Market Value of Liabilities

$BVA$ : Book Value of Assets

### 3.4 Data analysis

Data analysis in this study is divided into two parts: Descriptive Statistics and Inferential Statistics. Statistical software was used to analyze the data (Varnishbooncha, 2012). For Descriptive Statistics, we employed measures such as Frequency, Percentage, Mean, and Standard Deviation to summarize the collected data (Jinarat, 2014). These statistics provided an overview of the data distribution and highlighted general trends and patterns within the dataset, offering a foundational understanding of the variables under study. Inferential Statistics were utilized to test the influence of ISO standards on the business value of companies. Specifically, Multiple Linear Regression Analysis was chosen due to its ability to model the relationship between one dependent variable and multiple independent variables. This technique is particularly useful in accounting research where the variables are quantitative. The regression model was specified as follows:

$$T_Q = \beta_0 + \beta_1 I_1 + \beta_2 I_2 + \beta_3 S + \varepsilon$$

Where:

$T_Q$ : Tobin's Q, which is a measure of company value.

$I_1$ : Environmental Management Standards, specifically ISO 14000.

$I_2$ : Corporate Social Responsibility Management Standards, specifically ISO26000.

$S$ : Size, represented by the natural logarithm of a company's total assets.

$\varepsilon$ : The Error term, capturing the variation in Tobin's Q not explained by the independent variables.

The steps involved in Multiple Linear Regression Analysis include model specification, data collection and preparation, data analysis, and diagnostic tests. The regression model was designed to assess the impact of ISO certifications (ISO 14000 and ISO 26000) and company size on Tobin's Q. Data from the annual reports and financial statements of 103 companies listed on the MAI for the years 2017-2019 were collected and thoroughly cleaned to ensure accuracy. SPSS (Statistical Package for the Social Sciences) was used for data analysis due to its robust capabilities. Multiple Linear Regression Analysis was employed to estimate the regression model, minimizing the sum of the squared differences between observed and predicted values. Several diagnostic tests were performed to ensure the validity and reliability of the regression model, including Variance Inflation Factors (VIF) for multicollinearity, the Breusch-Pagan test for heteroscedasticity, the Shapiro-Wilk test for normality of residuals, and the Durbin-Watson statistic for autocorrelation. The regression coefficients were then interpreted to determine the impact of ISO certifications on Tobin's Q, with statistical significance indicated by p-values below 0.05. This detailed approach enhances the robustness and credibility of the study's findings.

## 4. RESULTS

Table 2 presents the descriptive statistics of the population in terms of the adoption of different ISO standards among 103 companies listed on the Market for Alternative Investment (MAI). The table reveals that 23 companies (22.33%) have adopted ISO 14000, which focuses on environmental management systems, indicating a significant recognition of the importance of environmental management among these companies. In contrast, only 2 companies (1.94%) have adopted ISO 26000, which provides guidance on social responsibility, suggesting that social responsibility initiatives are less prevalent. The majority of the companies, 78 in total (75.73%), fall into the "another" category, implying that they have adopted different quality standards or possibly no standardized management systems at all. This distribution shows that while there is a notable emphasis on environmental management, as indicated by the adoption of ISO 14000, there is less focus on social responsibility as reflected in the low adoption rate of ISO 26000. Furthermore, the large number of companies in the "another" category indicates a diverse approach to quality and management standards among the companies on the MAI.

**Table 2: Population Descriptive Statistics**

| ISO | Frequency | Percentage |
|---|---|---|
| ISO14000 | 23 | 22.33 |
| ISO26000 | 2 | 1.94 |
| Another | 78 | 75.73 |
| Total | **103** | **100.00** |

Table 3 provides a detailed breakdown of the adoption of ISO standards across different industry groups among 103 companies listed on the Market for Alternative Investment (MAI). The table shows that in the Financial group, 2 companies have adopted ISO 14000, while 6 companies have adopted

other standards. In the Technology (TECH) group, 3 companies have adopted ISO 14000, and 2 have adopted ISO 26000, with no companies using other standards. The Agriculture (AGRO) group has no companies adopting either ISO 14000 or ISO 26000, with all 7 companies using other standards. In the Property and Construction (PROPCON) group, 2 companies have adopted ISO 14000, while 10 companies have adopted other standards. The Consumer Products (CONSUMP) group has 2 companies using ISO 14000 and 7 companies using other standards. The Service group shows 2 companies with ISO 14000 and 24 companies with other standards. The Industrial (INDUS) group has the highest adoption of ISO 14000 with 7 companies, alongside 18 companies using other standards. Lastly, the Resource group includes 5 companies using ISO 14000 and 6 companies using other standards. Overall, the data illustrates the varied adoption of ISO standards across different industry groups, with ISO 14000 being more commonly adopted in certain sectors like INDUS and RESOURCE, while ISO 26000 is notably less prevalent, only appearing in the TECH group.

**Table 3: IOS Adoption Statistics**

| Industry group | Number of companies used ISO | | |
|---|---|---|---|
| | ISO14000 | ISO26000 | Another |
| FINANCIAL | 2 | - | 6 |
| TECH | 3 | 2 | - |
| AGRO | - | - | 7 |
| PROPCON | 2 | - | 10 |
| CONSUMP | 2 | - | 7 |
| SERVICE | 2 | - | 24 |
| INDUS | 7 | - | 18 |
| RESOURCE | 5 | - | 6 |
| Total | **23** | 2 | 78 |

From Table 2 and Table 3, the results of the descriptive statistical analysis indicate that companies listed on the MAI Stock Exchange in 8 industrial groups from 2017 to 2019 totaled 103. Among these, 23 companies (22.33%) adopted ISO 14000, which focuses on environmental management systems, while only 2 companies (1.94%) adopted ISO 26000, which provides guidance on social responsibility. The majority, 78 companies (75.73%), used other standards. Detailed analysis by industry group reveals that the Industrial (INDUS) group had the highest number of companies using ISO 14000, with 7 companies, followed by the Resource (RESOURCE) group with 5 companies, and the Technology (TECH) group with 3 companies. The Financial (FINANCIAL), Property and Construction (PROPCON), Consumer Products (CONSUMP), and Service (SERVICE) groups each had 2 companies adopting ISO 14000. In contrast, the Agriculture (AGRO) group did not have any companies using ISO 14000 or ISO 26000, relying entirely on other standards. Notably, the TECH group was the only sector to have companies (2) adopting ISO 26000. These findings highlight the varied adoption of ISO standards across different sectors, with a significant emphasis on environmental management (ISO 14000) in the INDUS, RESOURCE, and TECH sectors, and minimal adoption of social responsibility standards (ISO 26000).

**Table 4: IOS Variables Statistics**

| Variables | Min | Max | Mean | SD |
|---|---|---|---|---|
| $T_Q$ | -26.39 | 39.68 | 2.58 | 6.51 |
| ISO14000 | 0.00 | 32.70 | 11.02 | 9.65 |
| ISO26000 | 0.00 | 0.34 | 0.22 | 0.16 |
| SIZE | 0.24 | 0.44 | 0.33 | 0.04 |

Table 4 presents the descriptive statistics of the ISO variables for the 103 companies listed on the MAI Stock Exchange. The table includes the following variables: Tobin's Q (T_Q), ISO 14000, ISO 26000, and company size (SIZE). The company value results, measured by Tobin's Q, range from a minimum of -26.39 to a maximum of 39.68, with a mean of 2.58 and a standard deviation (SD) of 6.51. The extent of adoption of the ISO 14000 standard ranges from 0.00 to 32.70, with a mean of 11.02 and an SD of 9.65. The extent of adoption of the ISO 26000 standard ranges from 0.00 to 0.34, with a mean of 0.22 and an SD of 0.16. The size of the companies, represented by the logarithm of the total assets, ranges from 0.24 to 0.44, with a mean of 0.33 and an SD of 0.04. From Table 4, it is evident that the company value results (Tobin's Q) of the MAI Stock Exchange have a minimum of -26.39, a maximum of 39.68, a mean of 2.58, and an SD of 6.51. For ISO 14000, the values range from 0.00 to 32.70, with a mean of 11.02 and an SD of 9.65. ISO 26000 values range from 0.00 to 0.34, with a mean of 0.22 and an SD of 0.16. The company size variable, represented by the logarithm of total assets, has a minimum of 0.24, a maximum of 0.44, a mean of 0.33, and an SD of 0.04.

**Table 5: IOS and Business Value Relationship**

| | $T_Q$ | ISO 14000 | ISO 26000 | SIZE |
|---|---|---|---|---|
| $T_Q$ | 1 | 0.066 (0.000*) | 0.077 (0.000*) | 0.022 (0.060) |
| ISO14000 | | 1 | 0.007 (0.000*) | 0.008 (0.209) |
| ISO26000 | | | 1 | - 0.003 (0.177) |
| Size | | | | 1 |

* significance .05

Table 5 illustrates the relationship between the International Organization for Standardization (ISO) and business value, specifically focusing on Tobin's Q (T_Q), ISO 14000, ISO 26000, and company size (SIZE). The results show that there is a significant positive correlation between T_Q and ISO 14000 (0.066, $p < 0.05$), indicating that the adoption of ISO 14000 positively impacts the business value of companies. Similarly, there is a significant positive correlation between T_Q and ISO 26000 (0.077, $p < 0.05$), suggesting that ISO 26000 also positively influences business value. ISO 14000 is significantly correlated with ISO 26000 (0.007, $p < 0.05$), highlighting that companies adopting one standard are likely to adopt the other as well. The size of the companies (SIZE) shows a small, non-significant positive correlation with $T_Q$ (0.022, $p > 0.05$) and ISO 14000 (0.008, $p > 0.05$), and a non-significant negative correlation with ISO 26000 (-0.003, $p > 0.05$). These results indicate that while ISO standards significantly impact business value, company size does not show a significant correlation with either ISO 14000 or ISO 26000.

**Table 6: Multiple Linear Regression Analysis**

| Variables | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|

| | B | Std. Error | Beta | | |
|---|---|---|---|---|---|
| (Constant) | -2.133 | 3.293 | | -0.216 | 0.172 |
| ISO14000 | 1.919 | 0.682 | 0.047 | 0.937 | 0.003 * |
| ISO26000 | 0.040 | 0.013 | 0.060 | 1.026 | 0.001* |
| * significance .05 | | | | | |

Table 6 presents the results of the multiple linear regression analysis. The intercept (constant) of the regression equation is -2.133, meaning that if the values of ISO14000 and ISO26000 are both zero, the expected value of Tobin's Q ($T_Q$) would be -2.133. However, this result is not statistically significant as indicated by the Sig. value of 0.172, which is greater than the 0.05 threshold for significance. The unstandardized coefficient (B) for ISO14000 is 1.919, suggesting that for each unit increase in ISO14000 standard adoption, Tobin's Q increases by 1.919 units, holding other factors constant. The standardized coefficient (Beta) is 0.047, indicating the relative strength of this relationship. The t-value of 0.937 and Sig. value of 0.003 show that this result is statistically significant at the 0.05 level. For ISO26000, the unstandardized coefficient (B) is 0.040, indicating that for each unit increase in ISO26000 standard adoption, Tobin's Q increases by 0.040 units, holding other factors constant. The standardized coefficient (Beta) is 0.060, and the t-value of 1.026 with a Sig. value of 0.001 indicate that this result is also statistically significant at the 0.05 level.

The regression model has an R^2 value of 0.082, indicating that approximately 8.2% of the variance in Tobin's Q is explained by the independent variables (ISO14000 and ISO26000). The adjusted R^2 is also 0.082, which accounts for the number of predictors in the model and provides a more accurate reflection of the model's explanatory power. The Durbin-Watson statistic is 2.097, suggesting that there is no significant autocorrelation in the residuals, which is desirable. The F statistic is 6.997, indicating that the overall regression model is statistically significant at the 0.05 level.

The multiple regression formula derived from the analysis is:

$$T_Q = 1.1919I_1 + 0.04I_2$$

Where:

$T_Q$ : Tobin's Q

$I_1$ : ISO 14000.

$I_2$ : ISO26000.

In this formula, $T_Q$ represents Tobin's Q, which is a measure of the company's market value relative to its asset replacement cost. The variable $I_1$ represents the adoption level of the ISO14000 standard, while $I_2$ represents the adoption level of the ISO26000 standard. The coefficient for ISO14000 is 1.919, indicating that for each unit increase in the adoption of ISO14000, Tobin's Q increases by 1.919 units, assuming other factors remain constant. Similarly, the coefficient for ISO26000 is 0.040, suggesting that each unit increase in the adoption of ISO26000 results in an increase of 0.040 units in Tobin's Q, holding other factors constant. The intercept term of -2.133 signifies the baseline level of Tobin's Q when both ISO14000 and ISO26000 are zero, although this intercept is not statistically significant. Overall, the formula demonstrates that both ISO14000 and ISO26000 standards have

positive and significant impacts on Tobin's Q, thereby enhancing the business value of companies listed on the Market for Alternative Investment (MAI).

## 5. DISCUSSION

### 5.1 Implications for Businesses and Investors

The findings indicate that businesses adopting ISO 14000 and ISO 26000 standards can significantly enhance their management efficiency and business value. The analysis showed that 23 out of 103 companies (approximately 22.33%) adopted ISO 14000, demonstrating a notable recognition of the importance of environmental management. These companies include 7 in the INDUS group, 5 in the RESOURCE group, 3 in the TECH group, and 2 each in the FINANCIAL, PROPCON, CONSUME, and SERVICE groups. On the other hand, ISO 26000 was adopted by only 2 companies (1.94%) in the TECH group. The multiple regression analysis revealed that the adoption of ISO 14000 and ISO 26000 positively impacts Tobin's Q, a measure of company value. Specifically, the coefficient for ISO 14000 was 1.919 ($p = 0.003$), indicating that each unit increase in ISO 14000 adoption results in a 1.919 unit increase in Tobin's Q. Similarly, the coefficient for ISO 26000 was 0.040 ($p = 0.001$), showing that each unit increase in ISO 26000 adoption leads to a 0.040 unit increase in Tobin's Q. These results suggest that both standards significantly enhance business value.

For businesses listed on the MAI, the adoption of ISO 14000 and ISO 26000 can lead to several critical advantages. By implementing ISO 14000, companies can improve their environmental management practices, leading to reduced waste, lower energy consumption, and overall sustainability. This not only results in cost savings but also enhances the company's public image, making it more attractive to environmentally conscious investors and customers. ISO 26000, which emphasizes social responsibility, encourages companies to engage in ethical business practices, community involvement, and fair labor practices. This can help businesses build stronger relationships with stakeholders, improve their reputation and brand loyalty, and potentially increase customer satisfaction, employee morale, and productivity. Integrating these standards into business operations demonstrates a commitment to sustainable and ethical practices. This commitment can enhance the credibility of businesses with stakeholders, reduce operational risks, and provide access to new market opportunities. Overall, these benefits contribute to the long-term success and sustainability of businesses in the MAI.

For investors, the findings of this study offer valuable insights into the benefits of investing in companies that adopt ISO 14000 and ISO 26000 standards. Companies that implement these standards are likely to have better management efficiency and higher business value, as indicated by the positive impact on Tobin's Q. This makes them more attractive investment opportunities. Investors can use the adoption of ISO 14000 and ISO 26000 as indicators of a company's commitment to sustainability and social responsibility. This can help investors make more informed decisions, aligning their investment strategies with their values and the growing global emphasis on sustainability and ethical practices. By focusing on companies that adopt these standards, investors can contribute to promoting sustainable business practices and environmental and social governance in the MAI. This, in turn, can lead to more stable and sustainable returns on investment, benefiting both the investors and the broader economy.

These findings are consistent with previous research. (Nantakhanstraight, 2017) found that environmental management according to ISO 14000 standards, combined with organizational culture, positively correlates with organizational effectiveness. (Phoochonk, 2020) also highlighted the high correlation between ISO 14001:2015 effectiveness and corporate sustainability across

economic, social, and environmental dimensions. Further, (Klaprabchone, 2018) and (Intharathut, 2015) reported that ISO 14001:2015 certification positively impacts social and environmental outcomes. (Juplai, 2019) emphasized that establishing a sustainable ISO 14001 system contributes to organizational success without negatively affecting the environment and community.

Regarding ISO 26000, (Deerot, Lerengkulwat, & Prukampai, 2017) explored the relationship between corporate social responsibility (CSR) and firm performance among companies listed on the Stock Exchange of Thailand (SET), finding a positive correlation between CSR compliance and firm performance. (Nochai, 2019) and (P. Yangklan & T. Sincharoonsak, 2021) also demonstrated that CSR activities supporting ISO 26000 create value for societies and organizations, highlighting the strategic importance of CSR in building sustainable value, especially during economic crises.

### 5.2 Generalizability of Findings

The study's findings are particularly relevant for companies listed on the MAI but can also be generalized to other markets with similar economic and environmental contexts. The positive impact of ISO 14000 and ISO 26000 on management efficiency and business value can be expected in various industries and regions where there is a growing emphasis on sustainability and corporate responsibility. Future research could explore the impact of ISO 14000 and ISO 26000 on productivity in various sectors, such as tourism and hospitality, where environmental and social responsibilities are critical. For example, in the tourism industry, adopting ISO 14000 can help reduce the environmental impact of tourism activities, while ISO 26000 can ensure fair labor practices and community involvement, enhancing the overall sustainability of tourism operations. In the hospitality industry, these standards can improve resource efficiency and guest satisfaction by promoting sustainable practices and ethical operations. Examining the effectiveness of these standards in different organizational contexts, such as small and medium-sized enterprises (SMEs) versus large corporations, can provide valuable insights into the scalability and adaptability of ISO standards. Additionally, investigating the factors influencing the effectiveness of ISO standards and their impact on corporate sustainability across economic, societal, and environmental dimensions can provide deeper insights into fostering organizational sustainability. This includes understanding the role of corporate culture, leadership commitment, and stakeholder engagement in the successful implementation of ISO 14000 and ISO 26000. By identifying these factors, companies can develop targeted strategies to enhance the adoption and impact of ISO standards, contributing to broader sustainability goals and creating lasting value for all stakeholders.

### 5.3 Significance of Findings in the International Context

The significance of these findings extends beyond Thailand, providing valuable insights into the role of environmental and social governance in the broader context of international business and investment. By demonstrating the positive impact of ISO 14000 and ISO 26000 on management efficiency and business value, the study highlights how adherence to these standards can enhance a company’s attractiveness to global investors. This can guide international investors in identifying companies committed to sustainable practices, thereby influencing investment decisions and promoting economic sustainability worldwide.

## 6. CONCLUSION

This research investigated the impact of ISO14000 and ISO26000 standards on the management efficiency and business value of companies listed on Thailand's Market for Alternative Investment (MAI). The study found that the adoption of these ISO standards significantly enhances both

management efficiency and business value, as measured by Tobin's Q. Specifically, the results demonstrated that the adoption of ISO14000, which focuses on environmental management, and ISO26000, which emphasizes social responsibility, positively and significantly influences business value.The multiple regression analysis revealed that each unit increase in the adoption of ISO14000 results in a 1.919 unit increase in Tobin's Q, while each unit increase in the adoption of ISO26000 leads to a 0.040 unit increase in Tobin's Q. These findings highlight the substantial benefits of integrating these international standards into business operations. The analysis also showed that companies from various industry groups on the MAI, particularly those in the INDUS and RESOURCE sectors, recognize the importance of environmental management by adopting ISO14000. However, the adoption of ISO26000 remains limited, indicating a potential area for further growth in social responsibility practices.

Overall, this study underscores the importance of environmental and social responsibility in enhancing business performance and value. Companies that adopt and integrate ISO14000 and ISO26000 standards can build stronger relationships with stakeholders, improve their public image, reduce operational risks, and access new market opportunities. These practices not only contribute to sustainable business success but also align with the growing expectations of investors and consumers for responsible and ethical business conduct.

## 7. FUTURE RESEARCH RECOMMENDATIONS

### 7.1 Future Research

Future research should explore the impact of ISO 14000 and ISO 26000 standards on productivity in sectors like tourism, hospitality, and other service industries where environmental and social responsibilities are crucial. Examining the effectiveness of these standards in various organizational contexts, including SMEs and large corporations, can provide insights into their scalability and adaptability. Additionally, research should investigate factors influencing the successful implementation of ISO standards, such as corporate culture, leadership commitment, and stakeholder engagement. Understanding these factors can help develop strategies to enhance the adoption and impact of these standards.

Further studies should analyze the long-term effects of ISO standard adoption on corporate sustainability across economic, societal, and environmental dimensions. This can provide deeper insights into how these standards contribute to organizational sustainability and value creation. Exploring regional differences in the adoption and impact of ISO standards can also be beneficial. Comparing how companies in different regions implement these standards and the resulting outcomes can offer a broader understanding of the global applicability and effectiveness of ISO 14000 and ISO 26000.

### 7.2 Recommendations

Based on the study findings, companies should adopt ISO 14000 standards to enhance their environmental management practices. This includes setting up systems to monitor and reduce waste, lower energy consumption, and minimize environmental impact. Adopting these standards can lead to cost savings, improved sustainability, and a better public image. Additionally, companies should implement ISO 26000 standards to emphasize social responsibility, engaging in ethical business practices, community involvement, and fair labor practices. This approach can help build stronger relationships with stakeholders, improve reputation, and enhance brand loyalty. Companies should conduct regular environmental audits to ensure continuous improvement and compliance with ISO 14000 standards. Investing in employee training on environmental

management and social responsibility can enhance understanding and commitment to these practices, empowering employees to implement sustainability initiatives. Engaging stakeholders, including customers, employees, suppliers, and the community, is essential to gain insights and support for sustainability efforts. Leveraging technology to monitor and manage environmental performance can improve efficiency and accuracy. Transparency is key to building trust, so companies should regularly report on their sustainability efforts and progress. Publicly sharing this information can enhance reputation and attract investors interested in sustainable practices. By following these recommendations, companies can improve their environmental responsibility and management efficiency, leading to long-term success and sustainability.

## 8. Potential Limitations and Challenges

During data collection, several limitations and challenges were encountered. Ensuring the accuracy and completeness of data from the annual reports and financial statements of 103 companies listed on the MAI was a primary challenge. To address this, we thoroughly cleaned the data and cross-referenced multiple sources for consistency and reliability. Another issue was the availability of detailed information on ISO certifications. Some companies lacked comprehensive data on their ISO 14000 and ISO 26000 certifications. We mitigated this by including only companies with clearly documented certifications. Variations in reporting standards and practices among companies also posed challenges. We standardized the data to ensure comparability across different firms and industry groups. These measures enhanced the transparency and reliability of our findings, strengthening the overall study.

## Conflict of Interest

There is no conflict of interest.

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