

RESEARCH ARTICLE

# The Impact of Green Initiative Announcements on the Stock Prices of Selected Publicly Listed Companies in the Food and Beverage Industry in ASEAN-5

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Companies are now expected to implement green initiatives to reduce negative environmental impact and promote sustainability. Through an event study, the researchers determined the impact of green initiative announcements concerning waste management and renewable energy on the cumulative average abnormal return (CAAR) of the stock prices of selected publicly listed companies in the food and beverage industry in ASEAN-5 countries. The researchers adopted a causal, mixed-method research design and applied the total enumeration approach in determining the sample. Using Microsoft Excel and Jamovi, the CAAR was computed and tested for its significance through a one-sample, two-tailed t-test. The findings indicated that the CAAR was significant and negative before the announcement date. Before the announcement, waste management green initiatives also had a significant and negative CAAR. Meanwhile, renewable energy green initiatives had no significant impact during the event window. The findings demonstrate various market responses to the different types of green initiatives and can aid in advancing knowledge of how these can influence market reactions and investor sentiments.

**Keywords:** green initiatives; food and beverage; event study; CAAR; ASEAN-5

**JEL Classification:** G14

In 2018, Indonesia (ID), Malaysia (MY), collectively known as ASEAN-5 countries, contributed Philippines (PH), Singapore (SG), and Thailand (TH), approximately a total of 419 billion US Dollars to the

Gross Domestic Product of ASEAN (Von Kameke, 2021). Their strategic geographic location, situated amidst mountains and oceans, allows ASEAN-5 countries to be a major global hub of manufacturing and trade for food and beverage, making them one of the fastest-growing consumer markets globally (HV et al., 2014). However, using data from more than 200 countries, the research of Xu et al. (2021) showed that food production and food-related processes contribute approximately 35-37% of total greenhouse gas emissions. Thus, companies, especially in the food and beverage industry, have begun incorporating more sustainable practices into their operations to improve their competitive advantage (Haanaes & Olyneec, 2022). One of these practices is the implementation of green initiatives.

Green initiatives (GI) refer to actions, policies, and practices designed to reduce negative environmental impact, conserve natural resources, and promote sustainability (Agarwal, 2023; Khalil et al., 2022). It may be classified into two types, namely: (a) waste management (WM) and (b) renewable energy (RE).

Waste management green initiatives refer to actions, policies, and practices designed to reduce the amount of waste generated by human activities and promote sustainable ways of managing and disposing of waste (Anuardo et al., 2022). It involves strategies such as recycling, upcycling, clean-up drives, composting, and the use of reusable containers or eco-friendly packaging (Tangwanichagapong et al., 2017). This also focuses on sustainable production methods, non-toxic and natural materials, innovative waste processing techniques, and the development of sustainable waste management standards (Martin-Rios et al., 2022).

On the other hand, renewable energy green initiatives refer to actions, policies, and practices that are aimed at promoting the widespread adoption of clean and renewable energy sources to mitigate the effects of climate change and reduce dependence on fossil fuels. It encompasses renewable energy technologies such as biomass, solar, geothermal, hydro, and biogas (Ang et al., 2022). This also promotes energy efficiency by adopting energy-efficient practices, reconfiguring energy-related processes, and energy performance management systems (Shinn, 2022; Bridge & Gailing, 2020).

Thus, with the modern-day environmental trends and the growth potential of the ASEAN Food and Beverage market, it is beneficial to assess and analyze if

green initiative announcements could potentially affect a company's stock price. With this, the researchers primarily aim to answer the question: "What is the impact of green initiative announcements on the cumulative average abnormal returns (CAAR) of the stock prices of selected publicly listed companies (PLCs) in the food and beverage industry (F&B) in ASEAN-5 from 2021 to 2022?"

## Literature Review

The food and beverage industry in ASEAN-5 countries contributes to the region's economy (PricewaterhouseCoopers, 2020; The Pew Charitable Trusts & SYSTEMIQ, 2020). However, the industry's environmental impact has raised concerns among stakeholders, leading to a call for sustainable practices (El Ghouli et al., 2018). This pressure has prompted companies in the industry to adopt green initiatives, such as proper waste management and the use of renewable energy, to demonstrate their commitment to sustainability (Wagner & Lutsey, 2018; Woodard, 2020).

Although it is clear that the environment benefits from these green initiatives, the impact of the same on stock prices has been the subject of much research, with results varying widely. Some studies have found a positive significant relationship between green initiative announcements and stock price performance, indicating that investors react positively to such announcements (Li et al., 2022; Ramiah et al., 2016; Wassmer et al., 2014; Du et al., 2017; Zhang et al., 2018). Other studies, however, have found a negative significant relationship, suggesting that investors may perceive green initiatives as costly and detrimental to firm performance (Fiori et al., 2015; Rahi et al., 2021). Some studies have found that the relationship between green initiatives and stock prices is positive or negative but not significant (Ding, 2020; Meher et al., 2020), whereas others have found no effect at all (Bhatti & Sulaiman, 2023; Kwicinski et al., 2020).

Green initiatives made by various companies seek to foster awareness among different stakeholders of the importance of taking good care of the environment. In the study by Salehi et al. (2022), they investigated the effect of CO<sub>2</sub> gas emissions on the market value, price, and yield of car companies on the Tehran Stock Exchange. The study emphasized the significance of the green initiative for renewable energy, addressing

the escalating consumption of diverse fossil fuels driven by the human need for energy. The relationship between economic complexity and green economy, in relation to earnings management, was also studied by Ahmadi et al. (2023), which provided helpful ideas on environmental management decisions toward more sustainable business operations.

In studying the relationship of green initiatives in connection with stock prices, event studies as the methodology used in the study of Teitler-Regev and Tavor (2022) to measure various factors on hotel stocks is also utilized. The event study approach was also used in the study of Das & Das, (2022) in investigating the impact of a specific event, that is, the union budget announcement, on the stock market reaction.

Although the impact of green initiatives on stock prices may be mixed, it is widely accepted that both firm-specific and external factors influence stock prices. Aside from the mixed findings of previous studies, there is also a lack of research on green initiative announcements as an event and studies contextualized in a specific country and region to date. Therefore, examining the relationship between green initiatives and stock prices in a specific industry and region is essential. By examining this relationship, the researchers better understand how green initiatives affect stock prices and provide insight into the role of sustainability for companies in this industry.

The use of event study as utilized in the study of Teitler-Regev & Taylor, (2022) and Das & Das, (2022) proved to help analyze the impact of green announcements on stock prices of the selected food and beverage companies in ASEAN-5, namely Indonesia (ID), Malaysia (MY), Philippines (PH), Singapore

(SG), and Thailand (TH).

**Hypothesis**

Food and beverage companies have started to adopt sustainable practices and environmental projects to build a positive reputation and attract more customers and investors (Adams et al., 2022). This section contains various hypotheses to test the impact of green initiative announcements on the CAAR of the stock prices of selected publicly listed companies in the food and beverage industry in ASEAN-5 from 2021 to 2022.

*Green Initiative Announcements*

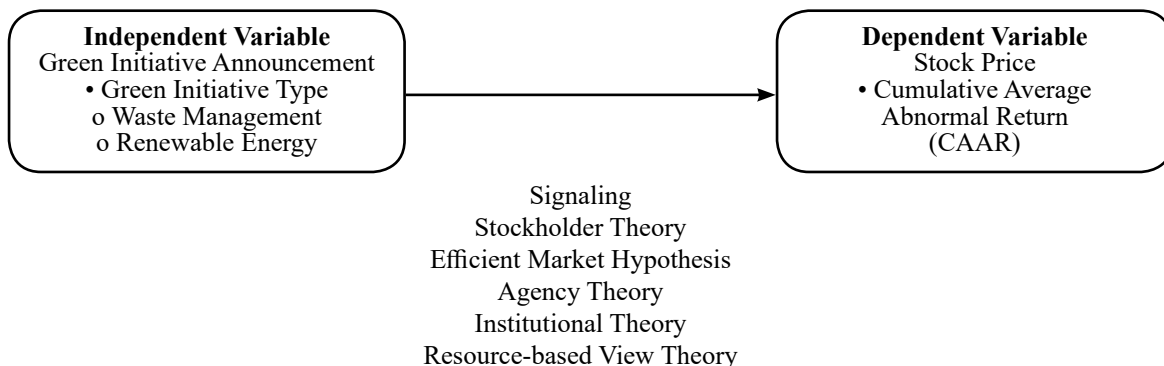
**Ha1:** The CAAR of the stock prices of selected publicly listed companies in the food and beverage industry in ASEAN-5 are significant during the event window of the green initiative announcements.

*Waste Management Green Initiative Announcements*

**Ha2:** The CAAR of the stock prices of selected publicly listed companies in the food and beverage industry in ASEAN-5 are significant during the event window of the waste management green initiative announcements.

*Renewable Energy Green Initiative Announcements*

**Ha3:** The CAAR of the stock prices of selected publicly listed companies in the food and beverage industry in ASEAN-5 are significant during the event window of the renewable



**Figure 1**

Diagram of the Operational Framework

energy green initiative announcements.

**Framework**

The operational framework aims to guide the researchers in investigating the relationship between the announcement of green initiatives and the stock price. The effect on the stock price as measured by CAAR is analyzed using the operational framework in Figure 1.

**Methodology**

This study used the event study methodology to examine the impact of green initiative announcements on stock prices, similar to the approach used by Teitler-Regev & Taylor, (2022) and Das & Das, (2022). The event study method uses information on the stock price behavior before an event (an estimation window) to examine the changes in the stock price around the event window. In this manner, events are collected on different dates. Then, for every event, data are collected before, during, and after the event. All of the data are brought to a common time defined as zero. Doing so neutralizes the factors that could influence the changes in stock prices (Teitler-Regev & Taylor, 2022).

**Event Study Methodology**

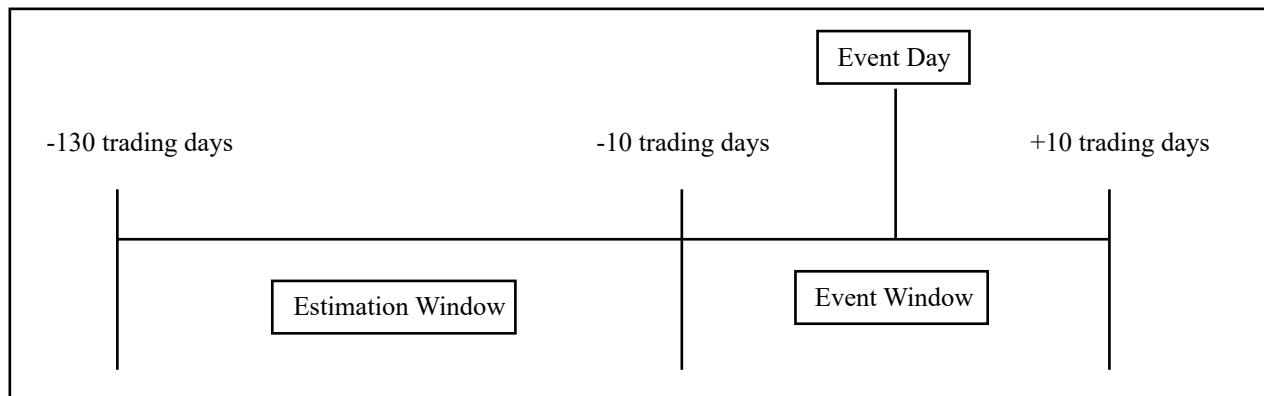
The event study comprises a causal mixed method research design, wherein the event studied is the green initiative announcement to investigate its impact on the stock prices of publicly listed companies in the food and beverage industry in ASEAN-5 from 2021 to 2022. The event study methodology developed by Fama et al. (1969) is used to observe whether abnormal returns

occur within the event window of the green initiative announcements.

The event period of the study, as seen in Figure 2, consists of the estimation window, event day, and event window. The estimation window (-130, -11) occurs before the event window and represents the normal condition of the stock returns before the event day. Meanwhile, the event window consists of the event day, denoted by (0,0), which is the specific date of the announced event. The event window also comprises the pre-event and post-event days (-10, +10) to consider possible leaks of information about the event prior to the announcement date and delayed market reactions influenced by different internal and external factors (Tomlin, 2023).

**Population and Sampling Design**

In terms of scope, only publicly listed companies that are (a) actively trading, (b) issue ordinary shares, (c) have announced green initiatives in the years 2021 to 2022, (d) have not been suspended or delisted during this period, and (e) are under the food and beverage industry classification with their local stock exchange in any of the ASEAN-5 countries is covered in this research. An actively trading company refers to an entity that is actively engaged in business operations and conducts its core activities, such as manufacturing products, providing services, generating revenue, and fulfilling its obligations to shareholders. In contrast, an inactive company is a company whose shares were publicly traded on a stock exchange but is no longer actively engaged in business operations or generating significant revenue. Companies that have only recently become publicly listed are also not included in the



**Figure 2**

Event Period of the Study

scope of the study. These conditions are necessary to ensure that there is sufficient historical data to analyze the impact of green initiatives on each company’s stock prices.

A limitation of this research is that it only covers green initiative announcements made between the years 2021 to 2022. Rooted in the research of Goldstein et al. (2021), the researchers opted to exclude data from the year 2020 due to the significant and unprecedented impact of COVID-19 on the stock prices of companies across different sectors and industries. Moreover, the pandemic resulted in a global economic slowdown, leading to market volatility and stock fluctuations that may not accurately reflect the impact of the green initiative announcements. Thus, the COVID-19 pandemic may have confounding effects on the

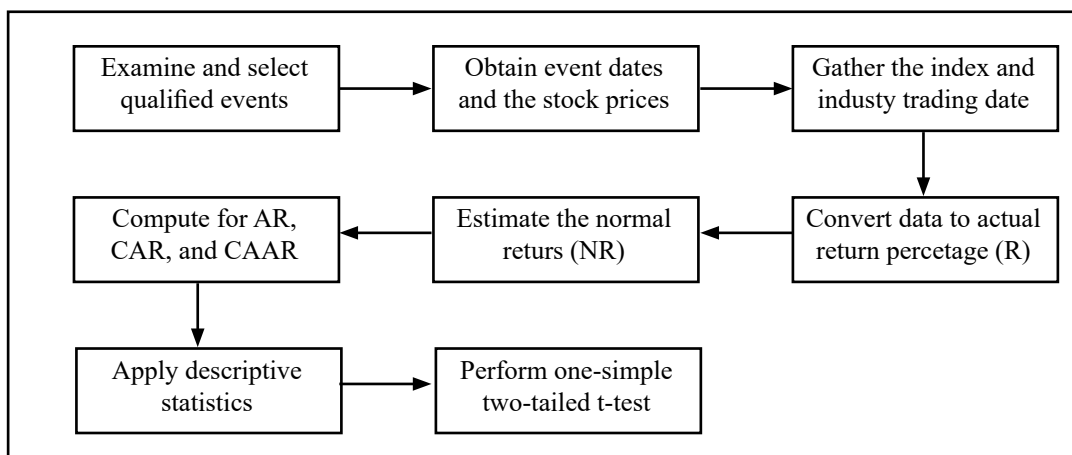
relationship between this study’s independent and dependent variables. Additionally, it is challenging for the researchers to isolate the impact of an event other than the pandemic on the stock prices of PLCs in 2020.

As such, the researchers gathered the list and total count of PLCs in the food and beverage industry from the stock exchange of each country in the ASEAN-5 region. The total enumeration approach was then used to sample the green initiative announcements from companies in these countries. This resulted in the final count of companies seen in Table 1.

In Table 1, only 50 companies qualified to be included in the sample after the necessary factors needed in the study were considered out of the total 281 companies belonging to the food and beverage industry. Note that if one company publicly

**Table 1.** No. of PLCs in the Food and Beverage Industry in Each Country in ASEAN-5

	ID	MY	PH	SG	TH	Total
No. of F&B Companies	90	65	35	36	55	281
<i>Less: Inactive and Suspended Companies</i>	19	0	0	15	0	34
<i>Less: Recent PLCs</i>	18	0	0	3	3	24
<i>Less: Non-ordinary Shares</i>	0	5	6	0	0	11
<i>Less: Companies with no Green Initiative Announcements</i>	41	51	21	8	41	162
Total PLCs	12	9	8	10	11	50



**Figure 3**

Data Collection and Analysis Map

announces multiple initiatives, all announcements are considered one event. Therefore, out of 90 companies from Indonesia, only 12 qualified. There were 65 companies in Malaysia, but only nine were included. The Philippines has 35 companies, but only eight were considered. Singapore has 36 companies, but only 10 are qualified to be included. Lastly, Thailand has 55 companies, but only 11 were included. A total of 50 companies were included in this study. Figure 3 illustrates the procedures for collecting and analyzing the data gathered.

**Data Collection and Analysis**

The data collection started with the examination and selection of events that satisfied the established criteria. After this, the event dates and the relevant stock prices during the event period were compiled. The data collection ended with gathering the index and industry trading data from each country’s stock exchange.

The data analysis began with converting all trading data to actual return percentages using Equation 1:

$$R_t^i = \frac{CC_t^i}{PC_t^i} \tag{1}$$

- wh
- $R_t^i$  = security  $i$ ’s actual return at period  $t$
  - $CC_t^i$  = security  $i$ ’s current closing price at period  $t$
  - $PC_t^i$  = security  $i$ ’s prior closing price at period  $t$

The next step was using ordinary least squares regression to compute the parameters of the two-factor risk-adjusted return model used in estimating the expected returns during the event window, as seen in Equation 2:

$$\widehat{NR}_t^i \equiv \hat{\alpha}_i + \beta_{i1}R_t^{in} + \beta_{i2}R_t^{in} \tag{2}$$

- $\widehat{NR}_t^i$  = stock  $i$ ’s estimated NR at period  $t$
- $R_t^{in}$  = market return at period  $t$
- $\hat{\alpha}_i, \beta_{i1}, \beta_{i2}$  = industry return at period  $t$
- = estimated model parameters

By subtracting the NR from the R during the event window, the researchers derived the AR as seen in Equation 3. Given the assumptions of this study, the resulting AR now represents the excess returns that the green initiative announcement generated for the announcing company.

$$\widehat{AR}_t^i \equiv R_t^i - \widehat{NR}_t^i \tag{3}$$

- $\widehat{AR}_t^i$  = stock  $i$ ’s estimated AR at period  $t$
- $R_t^i$  = stock  $i$ ’s return at period  $t$
- $\widehat{NR}_t^i$  = stock  $i$ ’s estimated NR at period  $t$

The CAR was then calculated by adding the ARs during the event window, as seen in Equation 4:

$$\widehat{CAR}_{s,t}^i \equiv \sum_{T=s}^t \widehat{AR}_t^i \tag{4}$$

- $\widehat{CAR}_{s,t}^i$  = stock  $i$ ’s estimated CAR from period  $s$  to  $t$
- $\widehat{AR}_t^i$  = stock  $i$ ’s estimated AR at period  $t$

The CAAR was then calculated using Equation 5 to examine the overall impact of the announcement of green initiatives on each of the firm’s stock returns. Similarly,  $\widehat{CAAR}_{s,t}^i \equiv \frac{1}{n} \sum_{i=1}^n \widehat{CAR}_{s,t}^i$  formed on a per-initiative

$$\widehat{CAAR}_{s,t}^i \tag{5}$$

- $\widehat{CAAR}_{s,t}^i$  = stock  $i$ ’s estimated CAR from period  $s$  to  $t$
- $\widehat{CAR}_{s,t}^i$  = estimated CAAR from period  $s$  to  $t$

The remaining steps of the data analysis are dedicated to hypothesis testing. First, the standard deviation of the CAAR was calculated using Equation 6:

$$SD_{\widehat{CAAR}_{s,t}^i} = \sqrt{\frac{\sum_{i=1}^n (\widehat{CAR}_{s,t}^i - \widehat{CAAR}_{s,t}^i)^2}{n-1}} \tag{6}$$

- $SD_{\widehat{CAAR}_{s,t}^i}$
- $\widehat{CAR}_{s,t}^i$
- $\widehat{CAAR}_{s,t}^i$

= standard deviation of CAAR from period  $s$  to  $t$   
 = stock  $i$ 's estimated CAR from period  $s$  to  $t$   
 = estimated CAAR from period  $s$  to  $t$

= standard deviation of CAAR from period  $s$  to  $t$

Once the CAAR and the standard deviation were computed, the next step was to perform a one-sample, two-tailed t-test for CAAR during the event window. The researchers used Equation 7 and compared the computed t-test value with t-critical values of 1.96 at 95% confidence level and 2.58 at 99% confidence level to  $CAAR_{s,t}$ : the results against the hypotheses.

$$t = \frac{CAAR_{s,t}}{\frac{SD_{CAAR_{s,t}}}{\sqrt{n}}} \tag{7}$$

where:

$t$  = t-test value  
 = estimated CAAR from period  $s$  to  $t$

## Results and Discussion

Examining the green initiative announcements in the food and beverage industry across the ASEAN-5 countries reveals a varied landscape. While a significant portion of companies are embracing sustainability, the prevalence differs considerably.

In Indonesia, 22.64% of surveyed companies (12 out of 53) announced green initiatives, aligning with the nation's environmental commitments but facing challenges like large-scale land conversion for palm oil production (Tyson, et al, 2018). Malaysia follows closely with 20.45% (9 out of 44), reflecting its aspirations to become a low-carbon leader, supported by waste management efforts (Raihan & Tuspekova, 2022). The Philippines, with 27.59% (8 out of 29) multinational companies announcing green initiatives, showcases its focus on sustainable materials and renewable energy (Raihan, 2023). Singapore stands out,

**Table 2.** *T-Test Results of Overall Green Initiative Announcements*

Event Window	CAAR	t-value
0, +10	-0.00350	-0.471
0, +9	-0.00402	-0.568
0, +8	-0.00432	-0.620
0, +7	-0.00215	-0.314
0, +6	-0.00185	-0.274
0, +5	0.00032	0.046
0, +4	-0.00060	-0.093
0, +3	0.00162	0.245
0, +2	0.00251	0.424
0, +1	0.00075	0.124
0, 0	0.00042	0.073
-1, 0	-0.00104	-0.178
-2, 0	-0.00087	-0.158
-3, 0	-0.00235	-0.433
-4, 0	-0.00190	-0.344
-5, 0	-0.00785	<b>-2.039*</b>
-6, 0	-0.00649	<b>-1.962*</b>
-7, 0	-0.00500	-1.597
-8, 0	-0.00526	<b>-1.964*</b>
-9, 0	-0.00302	-1.105
-10, 0	0.00019	0.090

Note. \* denotes significance at  $\alpha = 0.05$ ; \*\* denotes significance at  $\alpha = 0.01$ .

with 55.56% (10 out of 18) of its sampled companies actively announcing such initiatives. This aligns with the country's focus on cost-effective clean energy solutions (Quah, 2018; Meirun et al., 2021). Thailand, with 21.15% (11 out of 41) participation, demonstrates a commitment to its 20-year sustainability plan, though the potential for further progress remains (Office of the National Economic and Social Development Board, 2018).

Across the food and beverage industry in ASEAN-5, green initiatives emerge in a diverse landscape, with a total of 96 announcements reflecting varying levels of environmental commitment. Of the 50 publicly listed multinational companies analyzed, 60% made only one announcement, while the remaining 40% embraced multiple initiatives, ranging from two to eight.

The varied announcement frequency aligns with our research design, treating each announcement as a distinct event. This approach isolates the impact of each initiative on stock prices while controlling for confounding variables like market trends and company specifics. In cases of multiple announcements, we analyze the announcement with the earliest date to

capture the primary market reaction, which is crucial for our event study.

Table 2 presents a comprehensive overview of the results obtained from the statistical analysis and reveals whether the hypotheses were rejected or failed to be rejected.

As presented in Table 2, for the overall green initiative announcements, results show that the difference in the CAAR during the event windows of -5 days, -6 days, and -8 days are statistically significant at the  $p < .05$  level of significance. With this, the researchers reject  $H_01$ . It can be concluded that the CAAR of the stock prices of selected PLCs in the food and beverage industry in ASEAN-5 is significant during the event window of the green initiative announcements. To highlight, all of the days were before the announcement date, and all significant findings showed a negative reaction to the market.

The t-test results in Table 3, specifically concerning waste management green initiative announcements, show that the difference in the CAAR during the event windows of -8 days and -10 days are statistically significant at the  $p < .05$  level of significance, whereas

**Table 3.** *T-Test Results of Waste Management Green Initiative Announcements*

Event Window	CAAR	t-value
0, +10	-0.00492	-0.537
0, +9	-0.00279	-0.322
0, +8	-0.00178	-0.204
0, +7	-0.00217	-0.250
0, +6	-0.00191	-0.223
0, +5	0.00116	0.130
0, +4	-0.00411	-0.543
0, +3	-0.00119	-0.140
0, +2	0.00239	0.324
0, +1	-0.00091	-0.120
0, 0	-0.00371	-0.525
-1, 0	-0.00243	-0.314
-2, 0	0.00044	0.059
-3, 0	-0.00182	-0.239
-4, 0	-0.00193	-0.244
-5, 0	-0.00865	-1.696
-6, 0	-0.00703	-1.638
-7, 0	-0.00461	-1.172
-8, 0	-0.00794	<b>-2.488*</b>
-9, 0	-0.00831	<b>-2.975**</b>
-10, 0	-0.00410	<b>-2.131*</b>

Note. \* denotes significance at  $\alpha = 0.05$ ; \*\* denotes significance at  $\alpha = 0.01$ .



**Table 4.** *T-Test Results of Renewable Energy Green Initiative Announcements*

Event Window	CAAR	t-value
0, +10	-0.00124	-0.097
0, +9	-0.00596	-0.489
0, +8	-0.00838	-0.718
0, +7	-0.00213	-0.188
0, +6	-0.00175	-0.157
0, +5	-0.00104	-0.097
0, +4	0.00502	0.442
0, +3	0.00609	0.574
0, +2	0.00270	0.271
0, +1	0.00338	0.339
0, 0	0.00701	0.706
-1, 0	0.00117	0.129
-2, 0	-0.00296	-0.369
-3, 0	-0.00321	-0.440
-4, 0	-0.00185	-0.265
-5, 0	-0.00656	-1.117
-6, 0	-0.00563	-1.073
-7, 0	-0.00562	-1.075
-8, 0	-0.00098	-0.208
-9, 0	0.00541	1.023
-10, 0	0.00702	1.680

Note. \* denotes significance at  $\alpha = 0.05$ ; \*\* denotes significance at  $\alpha = 0.01$ .

the result for the -9 days is statistically significant at the  $p < .01$  level of significance. Similarly, all of the days mentioned above are prior to the announcement date and show a negative reaction to the market. Above all, the researchers have sufficient evidence to reject Ho2. It is therefore concluded that the CAAR of the stock prices of selected PLCs in the food and beverage industry in ASEAN-5 is significant during the event window of the waste management green initiative announcements.

Lastly, for renewable energy green initiative announcements, it can be seen in Table 4 that the differences in the CAAR during the entirety of the event window, from -10 days to +10 days, are not statistically significant at the  $p < .01$  and  $p < .05$  levels of significance. With that being said, the researchers failed to reject Ho3. The CAAR of the stock prices of selected PLCs in the food and beverage industry in ASEAN-5 are not significant during the event window of the renewable energy green initiative announcements.

The results observed for the overall green initiative announcements and waste management green initiative announcements align with the research

of Rahi et al. (2021) and Fiori et al. (2015), which found a significant negative impact of sustainability practices on stock prices. Specifically, these studies highlight the challenges and costs of implementing sustainability practices, which can lead to a negative market reaction. Likewise, investors may be concerned about the financial implications or perceive a lack of immediate financial benefits. This contradicts the results of previous studies by Ramiah et al. (2016), Wassmer et al. (2014), Du et al. (2017), Zhang et al. (2018), and Li et al. (2022).

In addition, the negative CAARs during the pre-event window indicate that there is a market reaction to the news, possibly due to the anticipation of potential changes in company operations or perceived risks associated with the implementation of green initiatives. Moreover, as postulated by Kliger and Gurevich (2014), the significantly negative CAARs observed during the pre-event window imply that there may have been information leakage before the official news announcement, which could have led to suspicions of insider trading.

Meanwhile, the analysis of renewable energy green

initiative announcements showed no irregularities in the CAARs throughout the event window. This finding aligns with previous studies that have reported insignificant or no significant effects of green initiatives on stock performance, such as Ding (2020), Meher et al. (2020), Bhatti and Sulaiman (2023), and Kwicinski et al. (2020). This indicates that the market did not exhibit a distinct reaction to announcements related to renewable energy. The absence of irregularities may suggest that investors already had expectations or knowledge about implementing such, potentially leading to a more muted market response.

## Conclusions and Recommendations

The rapid growth of the ASEAN-5 countries in the food and beverage industry has led to increased environmental concerns due to the industry's operations (HV et al., 2014; El Ghouli et al., 2018). A thorough examination of 50 publicly listed companies in this region, encompassing 96 events, indicated that announcements of green initiatives overall had a statistically significant and negative impact on stock prices, specifically on days -5, -6, and -8 leading up to the announcement.

The two types of green initiatives highlighted in the study have displayed varying market reactions. Waste management initiative announcements were associated with statistically significant negative returns on days -8, -9, and -10 before the announcement, possibly due to the exercise of caution brought about by insider trading and information leakage. On the contrary, announcements related to renewable energy initiatives did not significantly impact stock prices throughout the event window, from -10 days to +10 days. This variation underscores the need for effective communication about these initiatives' strategic and financial implications, as the market perceives and responds differently to distinct green strategies.

Current and future investors should discern between types of green initiatives when investing and remain vigilant about potential information leakage. Understanding the broader economic context, especially the relationship between green initiatives and other market assets, is also vital.

Publicly listed companies in the food and beverage industry should see green initiatives as long-term investments. Transparent communication and diversifying green strategies are essential, as is

safeguarding against unauthorized information leaks.

For regulatory bodies and governments, developing policies that encourage green initiatives and provide fiscal incentives can strengthen the bond between green innovation and enterprise performance.

The academic community's integration of interdisciplinary learning and collaborative industry partnerships can shape future industry leaders and foster sustainable practices. This study serves as a foundation for future researchers to explore other industries and regions.

Additionally, this study also has several limitations that should be addressed in future research, such as, but not limited to, increasing the number of companies included in the study, categorizing green initiative announcements by different classifications other than waste management and renewable energy, conducting per-country analyses, exploring the moderating effect of firm size, expanding the event window, conducting a sensitivity analysis, considering other influencing factors can offer a more comprehensive understanding of the financial implications of green initiatives, and the use of other statistical tools such as the ordinary least squares (OLS) which is used in regression analysis to estimate the relationship one or more independent variables and a dependent variable to improve the method of analysis in presenting the post estimation/diagnostics. It is recommended for future research to investigate the effect of green initiatives on companies by using parametric measures that consider the non-normality in the financial market. Moreover, due to the major impact of COVID-19 on business and everyday life globally, it would be valuable to compare the effect of green initiative announcements on the stock prices of companies in the food and beverage industry in the post-pandemic period.

Each stakeholder, from investors to researchers, plays a unique role in pursuing a sustainable future. By aligning their efforts and understanding the nuances of green initiatives, they can collectively drive environmental responsibility and economic growth.

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