Impact of profitability elements on the food and beverage industry in Malaysia

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ABSTRACT

This study investigates the impact of profitability on Malaysia's food and beverage industry, analysing four independent variables: leverage, liquidity, growth, and productivity. The sample comprised 35 listed companies in the sector, and ordinary least square (OLS) regression was used for data analysis. The results indicate a significant negative correlation between liquidity and profitability, while growth and productivity have a positive influence on profitability. These findings diverge from prior research, which suggested a negative effect of liquidity on profitability and a positive impact from growth, leverage, and productivity. However, certain limitations exist, such as the small sample size and exclusion of sub-sectors. Future research should consider a more diverse and extensive sample, including private firms, to yield comprehensive results. Additionally, adopting novel data gathering methods could enhance the study's quality and scope. Policymakers and investors can benefit from this study's insights to foster growth and informed decision-making within the food and beverage industry.

INTRODUCTION

The food and beverage sector encompass companies involved in the processing, packaging, and distribution of food products. In Malaysia, the food and beverage industry is recognised as a rapidly

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growing market and a major contributor to the national economy (Kwong et al., 2021). The majority of firms operating within this sector are small and medium-sized enterprises (SMEs). The industry itself is extensive, covering a wide range of products such as processed fruits and vegetables, confections, food ingredients, herbs and spices, drinks, animal feed, and more (Tan, 2022). Malaysia is heavily reliant on imports for various essential items such as rice and seafood products for domestic consumption. Additionally, for manufacturing and export purposes, raw materials such as wheat and dairy milk are imported. The food and beverage (F&B) sector is a significant industry in Malaysia, playing a significant role in the country's economy (Husin & Rizal, 2021).

In recent years, this sector has attracted significant academic research to explore various aspects of its operations. In Addition, the Malaysian government has implemented several policies to support the F&B sector, such as tax incentives for food manufacturers and initiatives that promote food tourism. Nevertheless, Kwong et al. (2021) have raised concerns about the impact of these policies on small and medium-sized enterprises in the sector. The F&B industry in Malaysia is highly competitive, with both domestic and international players striving to increase their market share. Yeoh et al. (2021) found that food quality, price, and customer service are essential drivers of customer satisfaction and loyalty in the sector.

The (F&B) sector is an essential industry globally, contributing significantly to economic growth and job creation. However, this sector is facing various challenges in meeting the growing demand for sustainable and healthy food options, particularly in the wake of the COVID-19 pandemic. According to a report by the World Economic Forum (WEF), the global food system is under severe stress, with issues such as food insecurity, environmental degradation, and resource depletion posing significant threats to the sustainability of the sector (WEF, 2021). Malaysia's economy has experienced a slowdown in recent years due to the COVID-19 pandemic (Tan, 2022), The pandemic has resulted in significant losses, particularly for suppliers and consumers. Additionally, during the nearly one year and seven months of Movement Control Order (MCO), many Malaysians have faced financial difficulties (Mohd Shah, 2021). For instance, a substantial number of business owners, especially those in the food and beverage sector, have been forced to shut down their businesses.

Figure 1 provides evidence that the food and beverage industry encountered significant obstacles in 2019 as a result of the weak Malaysian Ringgit exchange rate, and the COVID-19 pandemic is also a contributing factor to the sector's weakness in recent years. Shirley Tay Bee Koo, the President of the Malaysia Retail Chain Association (MRCA), disclosed to The Edge that most of the MRCA's F&B members have been severely impacted by the pandemic. Many of them have witnessed a considerable decline in sales, forcing them to consolidate their operations to remain viable, with only a few managing to remain unaffected.
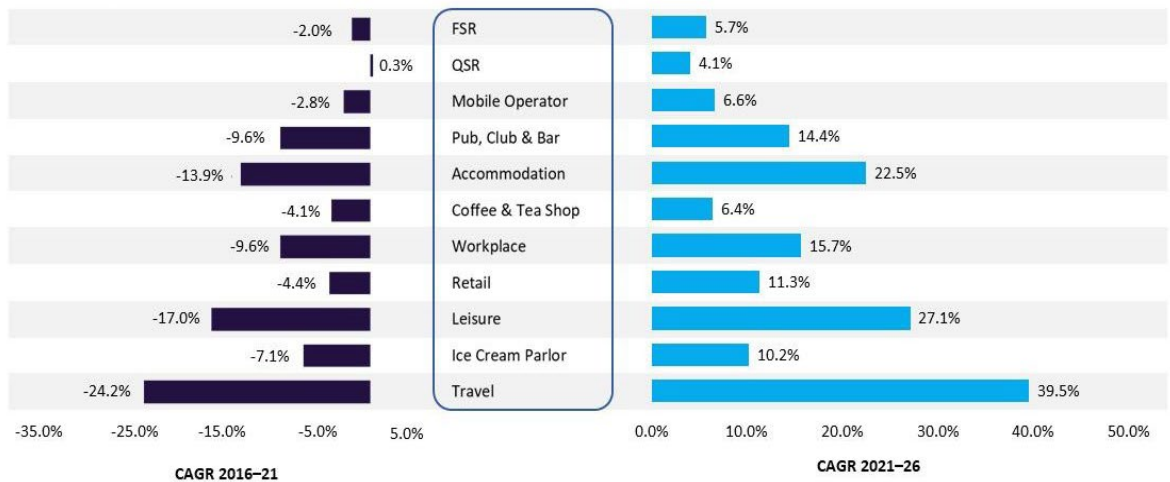
Fig. 1. Malaysia historic and future performance of food service profit sector channels

Source: GlobalData (2023)

The declining value of the Ringgit exchange rate has had an impact on production costs. In early November 2022, the Malaysian ringgit depreciated from approximately MYR 4.20 per USD to around MYR 4.74 per USD, as reported by the Central Bank of Malaysia (2022). This exchange rate has particularly affected the food and beverage industry's purchase of imported raw materials, including wheat and sugar. Additionally, the market's growth can be hindered by stringent government regulations and fluctuations in raw material prices, as illustrated in Table 1 below:

Table 1. Exchanges rates 2022

DATE	USD/RM
01/03/22	4.193
30/03/22	4.2045
31/03/22	4.206
01/04/22	4.2105
28/04/22	4.3685
05/0522	4.3475
31/05/22	4.381
01/06/22	4.388
30/06/22	4.408
01/07/22	4.41
29/07/22	4.4505
01/08/22	4.453
30/08/22	4.479
01/09/22	4.4815
30/09/22	4.634
03/10/22	4.647
31/10/22	4.728
01/11/22	4.7345

Source: Bank Negara Malaysia on exchanges rates (2022)

In addition, the conflict between Russia and Ukraine could potentially impact Malaysia's food and beverage industry. The war has caused global chaos, as Ukraine is a major exporter of wheat and seed oil worldwide. Although Malaysia's trade with Ukraine is not substantial, the country primarily imports fertilizers from Russia. According to Loh (2016), the Head of Social, Law and Human Rights Research, Russia is only one of Malaysia's top five fertilizers importing countries, and the total value of all chemical fertilizers (potassic, phosphatic, nitrogenous, and others) in 2020 was US$76.82 million (RM321.88 million). Any increase in fertilizer prices could result in a rise in the prices of raw materials and, subsequently, the final product, as reported by BBC News (2014) and Jang et al. (2019). Due to their unstable financial circumstances during these difficult times, consumers may think twice before making any purchases.

Furthermore, the escalation of food inflation has emerged as a contributing factor to the surge in food prices. Food inflation refers to the impact of overall inflation on food prices, resulting in a substantial increase in prices in a short period, sometimes exceeding 100% of the previous price. As a result, consumers' grocery bills have increased, and they must spend more money to purchase the same quantity of food, which may force them to cut their food expenses to save money. According to Tan (2022), the Consumer Price Index (CPI) inflation rate in Malaysia for April 2022 rose by 2.3%, as reported by the Department of Statistics Malaysia (DOSM) on May 25. DOSM Chief Statistician Datuk Seri Dr. Mohd Uzir Mahidin identified food inflation as the primary factor contributing to this increase. The food and non-alcoholic beverages category saw a year-on-year increase of 4.1%, with 89.1% of its products experiencing an increase in price (Baba at el., 2019).

RESEARCH QUESTIONS

This study was designed in response to concerns raised in the problem statement. Consequently, the forthcoming discussion will address the following research questions: As a result, the following main research questions are will be discussed:

1. What is the nature of the relationship between leverage and firm profitability in the food and beverages sector?

2. How does liquidity relate to firm profitability in the food and beverages sector?

3. What is the impact of growth factors on firm profitability in the food and beverages sector?

4. How does productivity influence firm profitability in the food and beverages sector?

RESEARCH OBJECTIVES

The main objective of this study is to augment the existing knowledge and substantiate the factors that impact the profitability of the food and beverage industry in the present circumstances. The primary contribution of this research lies in investigating the key determinants of profitability in the Malaysian food and beverage sector, with particular emphasis on the relationship between leverage, liquidity, growth, and productivity. The study's purpose perfectly aligns with its research question, and consequently, the study's objectives are based on these research questions:

1. To examine the relationship between the leverage and firm profitability in the food and beverages sector.

2. To identify the relationship between liquidity and firm profitability in the food and beverages sector.

3. To explore the impact of growth factors and firm profitability in the food and beverages sector.

4. To determine the impact of productivity on the firm profitability in the food andbeverages sector.

SIGNIFICANCE OF STUDY

The aim of this study is to enhance understanding of the factors that determine firm profitability in the food and beverage sector. The study seeks to go beyond the theoretical aspects and offer practical insights into the actual factors that impact firm profitability in this sector. By addressing this knowledge gap, the study is expected to shed new light on the factors that influence profitability in the food and beverage industry. The food and beverage sector is a critical segment of any country's economy as it plays a vital role in meeting the nutritional needs of the population while minimizing dependence on food imports. Given its size, growth, and performance relative to other sectors, the importance of the food and beverage industry cannot be overstated. In fact, this industry is one of the most successful in terms of revenue generation and employment, outperforming other manufacturing industries.

EMPIRICAL STUDY BASED ON FOOD AND BEVERAGES SECTOR

Yodit and Yirgu, (2019) conducted a study to investigate the factors influencing the profitability of the food and beverage industry and the impact of selected variables on profitability. The findings of the study revealed that both internal and external factors play a crucial role in determining the profitability of the industry. Internal factors were derived from financial accounts specific to the food and beverage sector, whereas external factors encompassed macroeconomic determinants that affect the operations and performance of manufacturing companies. The study emphasized that profitability ratios serve as an effective measure of an organization's overall performance and are indicative of its growth, performance, and management. Noteworthy firm-specific factors, including capital intensity, leverage, growth, liquidity, and firm size, were identified as significant determinants of profitability. Additionally, macroeconomic factors such as inflation were recognised as influential factors.

In addition, Supriati and Wardhana (2019) highlights the significant impact of a company's financing on its financial performance. Specifically, the size of the company is a crucial factor affecting its performance as larger companies have a greater ability to secure funding. Another important factor is liquidity, which refers to the company's ability to meet its immediate obligations. In a study conducted by Fawzi, Agung, and Sunarti, (2021), they explored the factors influencing the performance of the food and beverage (F&B) industry in Malaysia and Indonesia. The independent variables identified by the authors that could impact a firm's profitability were Current Ratio, Debt to Equity, Total Assets Turnover, and Net Profit Margin. The study also utilized Return on Asset and Return on Equity as dependent variables. Additionally, the (F&D) sector is predicted to continue to grow until 2050 by the World Bank, as it has become one of the key sectors contributing to a nation's income due to its profitability (Hassan & Yahya, 2020).

Therefore, firm profitability is a significant challenge for firms in the food and beverage industry, and several factors can influence their profitability. Strategic positioning, product quality, brand equity, supply chain management, leverage, liquidity, firm size, and technological innovation are some of the key factors that can impact the profitability of firms in this industry.

THEORETICAL DISCUSSION

The modern capital structure theory, established in 1958 and based on the Modigliani-Miller (M&M) framework, posits that a company's capital structure does not affect its value when the capital market is efficient or perfect. This is because, in such a scenario, there are no taxes, issuance costs, or agency costs associated with raising capital through debt or equity (Bhattacarya, 1979).

Another significant theoretical framework is the Signaling Theory, which elucidates why companies share information with the capital market. According to this theory, high profitability serves as an indicator of positive prospects for the company, leading investors to increase their demand for its stock (Bhattacarya, 1979). Brigham and Houston (2001) define a signal as an action taken by management to provide investors with insights into how the company perceives its future prospects.

In addition, the Modigliani-Miller theorem suggests that, under ideal conditions, firm profitability should be independent of capital structure. However, real-world factors may influence this relationship. Signaling Theory, on the other hand, suggests that high profitability can serve as a positive signal to investors, leading to increased valuation and easier access to capital. Both theories provide valuable insights into how the financial decisions and performance of a firm can impact its profitability and relationships with external stakeholders.
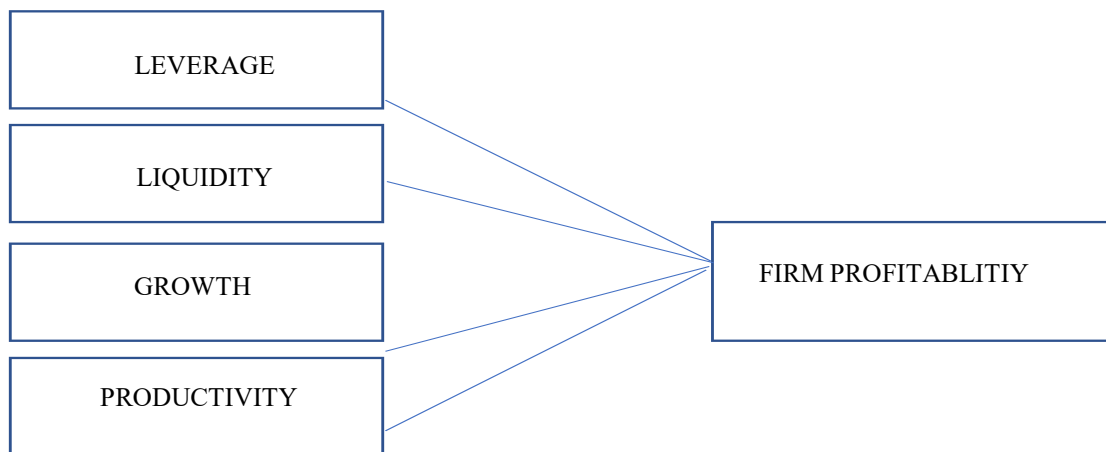

Fig. 2. Theoretical framework

Sources: Yodit & Yirgu (2019); Supriati & Wardhana (2019); Fawzi et al. (2021); Bhattacarya (1979); Brigham & Houston (2001)

METHODOLOGY

Sample and Data

The sample population for this research study consisted of F&B businesses that were listed on the Bursa Malaysia for year 2021. The selection process for the sample companies was based on specific criteria that were established by the researchers. The criteria required that the companies must have been listed on the Bursa Malaysia, and that they must have shown growth in their assets every year. Additionally, the companies must have provided financial statements and data for the research year, with a financial year that ended on December 31st. In December of each year, the stocks of the sample companies had to have a size

and book to market value ratio, which was obtained from the annual balance sheets published by the Bursa Malaysia.

Analysis Method

The deductive method of research begins with the formulation of a general theory, which is then refined into a more precise hypothesis through the examination of specific data and facts. This approach, referred to as the "top-down" method, aims to validate the hypothesis by comparing it with observations. If the hypothesis is supported by the data, it may lead to further refinement and confirmation of the theory. However, if the observations refute the hypothesis, it may prompt reconsideration and revision of the theory. That is based on empirical observations and data analysis. Unlike the deductive method, the inductive approach does not start with a preconceived theory and instead builds one through observations and data analysis (Mertens, 1998). The inductive method is an iterative process that allows for the formation of new and more comprehensive theories based on the data collected. The goal of this method is to generate new insights and ideas about a particular phenomenon, rather than just testing preconceived theories.

The methodology used in this research study is the deductive method, which is characterised by a systematic and structured approach to exploring and examining a particular phenomenon. The deductive method involves conducting a thorough review of existing theories and prior studies related to the topic being studied, and using the insights gained to generate and test hypotheses (Gill & Johnson, 2010). Through this approach, the study aims to advance the understanding of the phenomenon in question by testing and refining existing theories and uncovering new insights and relationships.

Moreover, in this study, have utilised the innovative EViews software for research analysis. This software provides advanced econometric and statistical analysis tools within a customizable and user-friendly interface. EViews facilitated efficient data management and manipulation, as well as allowing us to perform statistical and econometric analysis, create forecasts, model simulations, and produce visually appealing graphs and tables that could be used in different presentations and outputs (Mertens, 1998). The intuitive interface of EViews greatly simplified each step of the analysis process, from data entry and import to visualisation, statistical analysis, forecasting, modeling, and presentation creation, with a particular emphasis on the production of high-quality output for publication (EViews User Guide, 2022).

Data Analysis

In conducting this research, the EVIEWS Version 12 software played a crucial role. This software, specifically designed to assist with data processing and model development, was used to analyse panel data through the utilisation of a Least Square (NLS and ARMA) regression approach. The significance of the hypotheses was evaluated using t-statistical tests in conjunction with a multiple regression analysis, where the impact of each independent variable on the dependent variable of probability was analysed. The results were deemed significant if the probability was found to be 0.05 or less. Findings revealed that the F-statistics value was less than 0.05, indicating the efficacy of this model in fitting the data.

Diagnostic Checks

Normality Test

In evaluating the normality of the data distribution, the Jarque-Bera test was employed in this study. This test is commonly utilized to assess if the data follows a normal distribution by determining if the mean and variance conform to the first two moments of a normal distribution (Jarque et al., 1980). The p-value from the test is compared to a significance level of 5%, with a p-value exceeding 5% accepting the hypothesis of normality and a p-value below 5% rejecting it. Additionally, skewness and kurtosis, which are the third and fourth moments of a distribution, are also considered when evaluating normality. Skewness measures the symmetry of the distribution around its mean and kurtosis describes the size of the tails. A

normal distribution has a skewness of 0 and a kurtosis of 3, while a negative skewness indicates negative skewness, and a positive skewness indicates positive skewness. A kurtosis greater than 3 results in a leptokurtic distribution with a sharper peak and fatter tails, and a kurtosis less than 3 represents a platykurtic distribution with a flatter peak and thinner tails around the mean (Kharka et al., 2012).

The results of the study's normality tests are presented in Table 2 and provide insight into the distribution of the variables under examination. It is noted that with the exception of leverage, all variables exhibit a kurtosis value higher than 3, indicating that their distribution is leptokurtic in nature with a sharper peak and fatter tails compared to a normal distribution. Conversely, leverage displays a kurtosis value lower than 3, revealing that its distribution is platykurtic with a flatter peak and thinner tails compared to a normal distribution. The normality assumption is upheld for growth, productivity, and liquidity as their *p*-values are higher than 5%, while the *p*-value for leverage falls below 5%, indicating that its data does not conform to a normal distribution. These results suggest that the residuals of the study align with a normal distribution.

Descriptive Statistics

The descriptive statistics of the study variables are presented in this section. The central focus of the analysis is the dependent variable, return on equity (ROE), and the independent variables, growth, productivity, leverage, and liquidity. The results of the descriptive statistics, including mean, minimum, maximum, and standard deviation, for each variable were generated utilising the EViews 12 econometric software and are displayed in Table 2. The results provide a comprehensive and clear understanding of the study variables, thereby providing valuable insights into their distributions and ranges.

Table 2. Analysis of descriptive statistics

	Dv Return on Equity	**Growth**	**Productivity**	**Liquidity**	**Leverage**
Mean	7.099143	14.28429	0.828843	15.94943	15.77457
Median	7.890000	7.12000	0.663545	2.100000	13.83000
Maximum	33.63000	158.2400	3.519960	308.6600	37.86000
Minimum	-16.80000	-9.850000	0.007126	0.410000	0.000000
Std. Dev.	10.54769	29.52256	0.783162	52.00635	13.73949
Skewness	0.280734	3.722933	1.576284	5.309337	0.219054
Kurtosis	3.122952	17.82874	5.618960	30.38924	1.497414
Jarque-Bera	0.481780	401.5264	24.49655	1258.435	3.572484
Profitability	0.785928	0.000000	0.000005	0.000000	0.167589
Sum	248.4700	499.9500	558.2300	558.2300	552.1100
Sum Sq. Dev.	3782.627	29633.78	20.86367	91958.44	6418.300
Observations	35	35	35	35	35

Source: Primary data analysis (2021)

The table provides a summary of financial indicators for different industries in terms of their return of equity. The industries are categorised based on their affiliation, and the table presents the mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque-Bera, profitability, sum, sum square deviation, and number of observations for four variables: productivity, liquidity, leverage, and return of equity. The mean return of equity for all industries is 7.099143, with a standard deviation of 10.54769. This indicates that the industries' return on investment is positive, although it varies widely across the industries. The median return on equity is 7.890000, which is slightly higher than the mean, indicating that there are some outliers with high returns.

In terms of productivity, the mean is 14.28429, with a standard deviation of 29.52256. The median productivity is only 7.12000, indicating that there are a few industries that are highly productive and skewing the distribution. The mean liquidity is 234493.1, with a large standard deviation of 702885.2, indicating that liquidity varies widely across the industries. The median liquidity is only 43671.00, indicating that there are some industries that are not very liquid. The mean leverage is 0.828843, indicating that the industries have a moderate level of debt. The maximum leverage is very high at 308.6600, indicating that some industries are highly leveraged.

The skewness of the data is positive for all variables except for profitability, indicating that the distribution of the data is skewed to the right, with a long tail of high values. The kurtosis values for all variables except for productivity are much higher than 3, indicating that the data is highly peaked. The Jarque-Bera test is a test of normality, and the results indicate that the data is not normally distributed for most variables. The only variable with a significant *p*-value is liquidity, indicating that the data is not normally distributed. In terms of profitability, the mean is 0.785928, indicating that the industries have a positive profitability ratio. The sum of all observations for profitability is 0, indicating that some industries have negative profitability ratios, which is offset by industries with very high profitability ratios. In summary, the table provides a summary of financial indicators for different industries and highlights the variability of return on equity across different, productivity levels, liquidity, and leverage ratios.

Regression Analysis

The present section provides the results of a regression analysis conducted to investigate the impact of four distinct independent variables on the profitability of the food and beverage sector in Malaysia. The regression model employed is represented by the following equation.

Regression Model:

$$ROE_{I,t} = \alpha + \beta_1 LEV_{I,t} + \beta_2 LIQ_{I,t} + \beta_3 GROW_{I,t} + \beta_4 IA_{I,t} + \beta_5 PROD_{I,t}$$

RESEARCH HYPOTHESES

H_1 There is impact between firm's leverage and profitability.

H_2 There is impact between firm's liquidity and profitability.

H_3 There is impact between firm's growth and profitability.

H_4 There is impact between firm's productivity and profitability.

RESEARCH RESULTS

Table 3. Classic Assumption Test

Dependent Variable: RETURN ON EQUITY				
Method: Least Squares				
Date: 01/25/23				
Sample: 135				
Included observations: 35				
Variable	**Coefficient**	**Std. Error**	***t*-statistic**	**Prob.**
GROWTH	0.103219	0.041618	2.480177	0.0192
PRODUCTIVITY	8.713821	1.924156	4.528645	0.0001
LEVERAGE	-0.099252	0.117634	-0.843739	0.4057
LIQUIDITY	-0.127243	0.013846	-2.168746	0.0384
C	0.127243	2.063720	0.061657	0.9513
R-squared	0.646220	**Mean dependent var**		7.099143
Adjusted R-squared	0.585223	**S.D dependent var**		10.54769
S.E of regression	6.793046	**Akaike info criterion**		6.824481
Sum squared resid	1338.219	**Schwarz criterion**		7.091112
Log likelihood	-113.4284	**Hannan-Quin criter.**		6.916522
F-statistic	10.59436	**Durbin-Watson stat**		1.475184
Prob (F-statistics)	0.000007			

Source: Primary data analysis (2021)

According to the results presented in Table 3, the relationship between leverage and the profitability of companies in the Food and Beverage sector in Malaysia is negative, with a coefficient value of -0.099252. However, this relationship is not statistically significant, as indicated by the *p*-value of 0.41, which is greater than the significance level of 0.05. Therefore, hypothesis H_1, which postulated that leverage would have a significant impact on firm profitability, is not supported by the data.

On the other hand, the results indicate a negative and statistically significant correlation between liquidity, represented by the quick ratio, and profitability in the (F&D) sector in Malaysia. The *p*-value of 0.04, which is less than 0.05, suggests that the impact of liquidity on profitability is not due to chance. Hence, the hypothesis that liquidity has a significant impact on firm profitability, or H_2, is supported by the regression analysis. The regression analysis also reveals a positive and statistically significant impact between the growth of a firm in the Food and Beverage sector in Malaysia and its profitability, with a coefficient value of 0.103219 and a *p*-value of 0.02, which is less than 0.05. Therefore, hypothesis H_3, which posits that growth has a significant impact on firm profitability in the Food and Beverage sector in Malaysia, is confirmed to be true.

Moreover, the results show a positive impact between the productivity variable and firm profitability (ROE), with a coefficient value of 8.713821. The hypothesis H_4, which states that productivity has a significant impact on the ROE of firms in the (F&D) sector in Malaysia, is supported by the statistically

significant *p*-value of 0.0001, which is less than 0.05. This suggests that an increase in productivity results in an increase in profitability, confirming the positive correlation between the two variables.

The R-squared value of 0.646220 indicates that 64.62% of the fluctuations in ROA can be explained by changes in the independent variables, including leverage, liquidity, growth, and productivity, while the remaining 35.38% is due to other factors. The Adjusted R-squared value of 0.585223, which is in proximity to 1 and above 0.5, implies that these independent variables have a considerable impact on ROA. Finally, the F-statistic value of 0.000007 is less than 0.05, indicating that the model is a good fit for the data. Therefore, multiple regression analysis is deemed appropriate for use in this study. The results of the analysis suggest that liquidity, growth, and productivity have a significant impact on the profitability of companies in the Food and Beverage sector in Malaysia, while leverage does not. These findings provide insights for companies in this sector to enhance their profitability by improving their liquidity, growth, and productivity.

Table 4. Hypothesis Result

NO	HYPOTHESIS	RESULTS
Hypothesis 1 (H_1)	The leverage is proven to have insignificant impact on profitability (ROE)	REJECTED
Hypothesis 2 (H_2)	The liquidity is proven to have significant impact on profitability (ROE)	ACCEPTED
Hypothesis 3 (H_3)	The growth does not have significant impact on the profitability (ROE)	ACCEPTED
Hypothesis 4 (H_4)	The productivity has a significant impact on profitability (ROE)	ACCEPTED

Source: Primary data analysis (2021)

Table 4 presents the results of the hypothesis testing in a structured format. The table includes four hypotheses (H_1, H_2, H_3 and H_4) and their respective outcomes in relation to the dependent variable, profitability measured through the return on equity (ROE).

H_1 proposes that leverage has an insignificant influence on profitability, but the statistical analysis conducted rejected this hypothesis. Therefore, it can be concluded that leverage does have not significant impact on profitability. H_2 suggests that liquidity has a significant impact on profitability, and the analysis conducted accepted this hypothesis. Therefore, it can be inferred that liquidity does play a significant role in determining the profitability of the company. H_3 suggests that growth does not have a significant influence on profitability, and the analysis conducted accepted this hypothesis. Therefore, it can be inferred that growth does not play a significant role in determining the profitability of the company.

H_4 proposes that productivity has a significant positive impact of growth on profitability, and the analysis conducted accepted this hypothesis. Therefore, it can be inferred that productivity plays a significant role in determining the profitability of the company. In summary, Table 4 presents the outcomes of the hypothesis testing and provides insights into the factors that have a significant impact on the profitability of the company. The table provides a clear and concise representation of the research findings, which can be used to draw conclusions and make informed decisions.

DISCUSSION

The purpose of this chapter is to provide an in-depth analysis of the findings from the previous chapter, which examined the impact of profitability elements on the (F&D) industry in Malaysia. The discussion is divided into two segments: the first segment focuses on outcomes that align with the research objectives, while the second presents recommendations for the industry. The study utilised four independent variables, namely leverage, liquidity, growth, and productivity, to investigate the drivers of firm profitability in the food and beverage sector.

The first objective of the study was to investigate the impact between leverage and firm profitability. The findings revealed a negative and statistically insignificant association between the two. This finding corroborates previous studies, such as Pu (2023), who found a negative relationship between leverage and profitability in the Chinese Food and Beverage industry. This implies that an increase in leverage does not necessarily lead to higher profitability in the food and beverage sector.

Besides, the study also found a negative impact between liquidity and profitability, consistent with prior research. For instance, Obeidat (2021) found a negative impact between liquidity and profitability in the Jordanian (F&D) industry. This implies that firms in the (F&D) industry that hold higher levels of liquid assets do not necessarily achieve higher levels of profitability.

The third objective was to investigate the impact of growth drivers on company profitability in the (F&D) sector. The study found a positive association between firm profitability and growth, which is in line with some prior research but differs from other studies. For instance, Charitou and Santoso (2012) found a positive relationship between growth and profitability in the Indian Food and Beverage industry. This suggests that firms in the food and beverage industry that invest in growth initiatives are more likely to achieve higher levels of profitability.

The study looked at the impact between productivity and firm profitability in the (F&D) industry. The findings indicated that productivity has a significant positive impact on firm profitability, which is consistent with prior research. For example, Girma et al. (2009) found a positive impact between productivity and profitability in the Chinese (F&D) industry. This implies that firms that focus on improving productivity can achieve higher levels of profitability.

Lastly, the study's limitations suggest that future research should expand the scope and sample size to generate more comprehensive and reliable results. The findings of this study have practical implications for firms in the food and beverage industry in Malaysia, as they can use the results to inform their decision-making regarding the drivers of firm profitability.

CONCLUSION

In conclusion, the present study discovered that profitability in the Malaysian food and beverage industry is negatively impacted by liquidity, while positively influenced by growth and productivity. However, the study's limitations, such as a restricted scope and small sample size, necessitate further investigation to improve the overall understanding of the topic. Future research should aim to broaden the sample size and include different sub-sectors of the industry for more comprehensive results. Additionally, the application of novel data gathering methods can enhance the quality and completeness of future findings. Furthermore, extending the scope of the study to other countries could provide more detailed and reliable information on the profitability factors in the food and beverage industry.

The study has limitations, such as the small sample size and the exclusion of sub-sectors of the industry. Therefore, one of potential area for future research is to investigate the impact of technological innovation on profitability in the food and beverage industry. With the rise of e-commerce and other digital technologies, it is essential to understand how businesses can leverage these tools to improve their profitability. Research has shown that digital technologies such as mobile apps, social media, and big data analytics can help businesses improve their marketing, distribution, and operational efficiency, leading to increased profitability (Yang et al., 2019; Tan et al., 2020). Another area is to examine the impact of corporate social responsibility (CSR) on profitability in the food and beverage industry. Consumers are becoming increasingly concerned about the environmental and social impact of the products they consume, and businesses that demonstrate a commitment to sustainability and ethical practices may be more likely to attract and retain customers. Research has shown that CSR activities can positively impact brand image, customer loyalty, and financial performance (Yang et al., 2020).

CONFLICT OF INTEREST STATEMENT

The authors affirm that this research was carried out with a commitment to uphold the highest ethical standards. They declare that there were no personal, commercial, or financial interests that could have influenced the research outcomes. Furthermore, the authors wish to clarify that there are no conflicts of interest with the funding sources, thus ensuring the integrity and objectivity of the study.

AUTHORS' CONTRIBUTIONS

Ain Nurnazhifa Zubir, Nurfaidzah Khordin, and Siti Nur Adawiyah Zainudin were responsible for conducting the research, composing the initial manuscript, and carrying out revisions. Mohamad Hanif Abu Hassan played a pivotal role in conceptualizing the central research idea and establishing the theoretical framework. The research design and oversight were conducted by Mohamad Hanif Abu Hassan and Fauziah Mohamad Yunus, who also provided guidance throughout the research process. Additionally, the critical review, substantial revisions, and final approval for article submission were coordinated by Mohamad Hanif Abu Hassan and Sharifah Syakila Syed Shaharuddin, ensuring the scholarly rigor and readiness of the article for publication.

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