The Effects of Financial Leverage on Firm Performance in Shariah-Listed Consumer Products & Services Firms

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ABSTRACT

This study examined the effects of financial leverage on firm performance that focussed on Shariah-listed Consumer Products & Services firms in Malaysia from 2014 to 2018. The data for firm performance was Tobin's Q and return on asset, while debt-asset ratio, debt-equity ratio, and tangibility were indicators of financial leverage. This study applied a balanced panel regression model, including the pooled regression model, fixed-effect model, and random effect model. The results indicated that Tobin's Q is the best model to identify the impact of financial leverage on Shariah firm performance. The outcome showed that the financial leverage indicators had a significant and negative effect on Shariah firm's performance, in line with the assumption of the pecking order theory assumptions that internal financing will be the first option of financing compared to external financing.

Keywords: Shariah firms, financial leverage, firm performance, Tobin's Q, internal financing

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INTRODUCTION

The business environment's inherent risks have caused firms to instinctively align their decisions toward achieving their objectives to manage the relationship between risks and returns. Hence, financial managers must set their capital structure to minimize a firm's capital cost and maximize its performance (Rahman, Hossain, & Dey, 2018).

The capital structure can be crucial for business entities because financial managers will select the best alternatives as the most appropriate debt-equity mixture from different financial leverage levels. Financial leverage refers to how a firm relies on debt (Ross, Westerfield, Jordan, Lim, & Tan, 2016). It means that the more debt financing a firm uses in its capital structure, the more a firm will rely on debt.

Capital structure is referred to as the mix of debt and equity that the firm uses in its operation (Akhtar & Javed, 2012). It is the mixture of the firm's total debt derived from short-term debts and long-term debt and maintained equity. In today's business environment, the capital structure decision is crucial because it maximizes various stakeholders' returns. Besides, it also contributes to the effects of the value or performances of a firm. If a firm uses an appropriate mix of finance, its performance will not be severely affected (Abor, 2005). Therefore, business entities must make the right decision because a large amount of money is involved, with the possibility of long-term implications on the firm's objectives (Admassu, 2016).

Modigliani and Miller (1958) believed that capital structure is independent of the performance of a firm. In other words, a firm's performance can be determined by its earning power and the risk of its existing assets. Not only that, Modigliani and Miller (1958) also believed that capital structure is independent due to the way a firm chooses financing sources to conduct its activities. Due to unrealistic assumptions made by Modigliani and Miller (1958), several theories have been developed to explain the optimal capital structure. Capital structure has a negative effect on firms' profitability (Rahman, Saima, & Jahan, 2020). Furthermore, Bui (2020) found that financial leverage had a significant impact on firm performance for the real estate industry in Vietnam, indicating the more debts and inefficient use of financial funds may bring firms more financial risks.

The trade-off theory (TOT) by Myers (1977) proposed that a static amount of debt will serve as an incentive for financial managers to find the 'optimal capital structure' that will maximize firm performance when the benefits of debt equals to the marginal cost of debt. Another theory known as the Pecking-order Theory (POT) was developed by Myers and Majluf (1984). It aims to minimize the cost of asymmetric information, especially adverse selection, and focus on internal rather than external financing. This theory suggests that profitable firms that generate high earnings from their business activities are expected to use less debt capital (Admassu, 2016).

Malaysia has practiced a dual financial system: Shariah-compliant and non-Shariah- compliant business entities (Shahar & Shahar, 2015). For Shariah-compliant business entities, their nature is very different from non-Shariah-compliant businesses. This is because Shariah-compliant firms need to comply with Shariah values, regulations, and restrictions in dealing with their financial sources. The establishment of Shariah-compliant business entities assists Muslims in Malaysia in identifying Shariah-compliant investments, enhancing Muslim investors' confidence, and serves as an international centre for Islamic Capital Market (Securities Commission, 2006). The Shariah-compliant business entities in Malaysia will improve Islamic financial institutions' financial stability, and benefit borrowers and institutional investors (Dadgar, 2005; Iqbal & Tsubota, 2006).

Shariah-compliant firms are firms that have specific features of their securities due to the prohibition of activities that involve interest (riba), gambling (maisir), as well as uncertainties and speculative trading (gharar) (Sahudin, Ismail, Sulaiman, Rahman, & Jaafar, 2019). In recent years, many studies have been conducted to identify the effect of financial leverage on firm performance. However, only several studies examined these effects on Shariah-listed firms. Hence, the primary focus of this study was to investigate the impact of financial leverage on Shariah firm performance in an emerging market, specifically in Malaysia.

Every year, the list of Shariah-listed firms increases. This can be seen on the Bursa Malaysia and Securities Commission respective websites, which has the updated list of Shariah firms. Table 1 shows that the total number of Shariah listed firms as of 31 May 2019 is 599 for the primary market. This illustrates that many sectors that have been documented in Bursa Malaysia are now leading toward Shariah-based principles.

Since the consumer products & services are the second-highest percentage of Shariah listed firms (65%) as shown in in Table 1, this motivated the study to investigate the Shariah-compliant consumer products & services firms. In addition, based on Hirschmann (2021), one-fifth of Malaysian household consumption expenditure was spent on the fast-moving consumer goods segment (FMCG). Hence, it is one of the country's most critical consumer goods sectors.

Table 1: Shariah Listed Firms as of 31 May 2019

Main market	Number of Shariah Listed Firms	Total firms*	Percentage of Shariah listed firms (%)
Consumer products & services	126	194	65
Industrial products & services	187	254	74
Energy	29	32	91
Construction	47	52	90
Transportation & logistics	24	35	69
Property	76	101	75
Plantation	36	44	82
Technology	36	88	41
Utilities	10	14	71
Financial services	2	34	6
Health care	13	18	34
Telecommunications & media	13	33	39
SPAC	Nil	2	Nil
Close-end fund	Nil	1	Nil
Total	**599**	**902**	**66**

*As of 31 May 2019
(Source: Securities Commission of Malaysia, 2019)

The capital structure decision is one of the most critical decisions to be made by financial managers. It can be crucial for financial managers because they will select the best alternatives that will be the most appropriate debt-equity mixture from different levels of financial leverage, which refers to the extent to which a firm relies on debt (Ross et al., 2016). From the Islamic perspective, debt is indispensable. Even though debt is allowed in Islam, debt cannot be encouraged for non-essential and wasteful consumption (Ahmed, 2010).

Even though debt is permissible in Islam, too much reliance on it will affect individuals and the whole system in the economy (Ramli &

Haron, 2017). There is a certain debt level in Islam, which describes those debts must not exceed tangible assets. This is expressed in the percentage of 33 percent or the phrase – "one third is enough" (Bacha, 2019). Due to the importance of capital structure decisions, managers must employ the appropriate finance mix to boost their firms' performance.

Hence, this study will examine the relationship between financial leverage and the Shariah listed firms' performance in Malaysia. It will also determine the best model and relevant theory that is in line with this study. Many empirical studies have inconclusive findings regarding the effects of financial leverage on firm performance. Thus, this study attempted to seek the extent of financial leverage indicators on the performance of Shariah listed consumer products & services firms in Malaysia.

LITERATURE REVIEW

Concept of Financial Leverage

Financial leverage is not the only determinant of a firm's profit-earning potential; it is also a source of risk (Kaupelyte & Mscichauskas, 2016). If firm managers cannot administer finance sources, the firms will not be able to handle the cost. Eventually, firms may also not achieve the objectives of minimizing cost and maximizing performance. Financial leverage refers to the extent to which a firm relies on debt. Therefore, any firm must make the right decision in terms of its capital structure to forecast capital costs.

In reality, firm performance is determined by the capital structure decision and factors such as taxes, agency conflicts, and time-varying financial market opportunities (Frank & Goyal, 2008). Arguments for and against this have finally led to developing other capital structure theories such as the Trade-Off Theory (TOT) and the POT.

In the context of Shariah-compliant firms, these firms see debt from a different perspective compared to non-Shariah-compliant firms (Ramli & Haron, 2017). In the non-Shariah-compliant firms' mechanism, debt can be described as a highly complex contract entailing a promise to repay the principal amount with interest incurred on a loan or advance (Davis, 1995).

Basically, in a non-Shariah or conventional contract, the mechanism only protects the interest of the lenders and transfers the risks to borrowers. Lenders will have absolute power over the interest rate charged to borrowers; not only that, lenders too can charge penalties to borrowers (Lokken, 1986).

The non-Shariah compliant firms' mechanism is different from the Shariah-compliant mechanism because in the latter, debt should not be encouraged for non-essential and wasteful consumption (Ahmed, 2010). In Islam, interest (riba), gambling (maisir), as well as uncertainties and speculative trading (gharar), are strictly prohibited (Sahuddin et al., 2019). In dealing with financial resources, the Shariah compliant firms must adhere to Islamic principles. Several theories have explained the optimal capital structure. TOT, which was developed by Myers (1977), suggests that there is a static amount of debt which serve as an incentive for financial managers to find the 'optimal capital structure' that will maximize firm performance when the benefits of debt are equal to the marginal cost of debt. The TOT theory looks at the cost and benefits of debt (Ramli & Haron, 2017). This theory assumes that firms prefer high debt financing rather than equity.

In contrast with the TOT, the POT Theory by Myers and Majluf (1984) is aimed at minimizing the cost associated with asymmetric information, especially with the adverse selection and preference of internal financing to external financing. This theory assumes that profitable firms that generate high earnings from their business activities are expected to enjoy more available internal funds (Admassu, 2016).

Pecking-order Theory (POT) and the Shariah-compliant Firms

The early development of the POT began with a study by Donaldson (1961) on a sample of large corporations' financing practices. This then encouraged Myers and Majluf (1984) to explore other theories, resulting in the development of a new theory called the POT. Basically, in the POT theory, internal financing will be the first option of financing rather than external financing. In this theory, it is thought that when funds are needed, firms will use their internal financing first. However, when there are not enough funds, external financing will be chosen.

In the context of Shariah-compliant firms, Ahmed (2010) pointed out that Shariah firms have similarities with the POT. Also, Obaidullah (2006) explained that Shariah-compliant firms are irrelevant to the TOT due to the interest tax shield elements. According to Obaidullah (2006), Shariah listed firms will minimize financing costs by choosing internal equity, internal debt, Mudarabah-based equity, and Musharakah-based equity. Hence, the order of the proposed choice is similar to that of the POT. Therefore, the TOT would be mostly irrelevant to Islamic firms (Obaidullah, 2006).

Relationship of Financial Leverage and Firm Performance

Many researchers have studied the relationship between financial leverage and firm performance from a different perspective in a different environment. Findings reveal various discoveries based on the implications of financial leverage theories. Ani and Aimera (2018) and Hongli, Ajorsu, and Bakpa (2019) found that financial leverage positively impacted firm performance among India's pharmaceutical firms. This finding, however, is inconsistent with its literature review that mostly assumes that financial leverage should have a negative association with the performance of firms. In contrast with previous literature, this study has the same findings as the study conducted by Lin and Chang (2011).

Lin and Chang (2011) looked at the effect of financial leverage on Taiwanese firm performance, showing positive results of the relationship between financial leverage and firm performance. Hence, this study is in line with the TOT which suggests a static amount of debt that prompts managers to find the 'optimal capital structure' that maximizes firm performance when the benefits of debt equals the marginal cost of debt.

There is also a study conducted by Singh (2016), which studied financial leverage and the performance of the selected Indian companies. He examined the impact of financial leverage on a firm's performance using panel data analysis. It was found that financial leverage had a negative effect on firm performance indicators (ROA and Tobin's Q). In addition, a current study conducted by Sarkar (2022) showed the negative effect of financial leverage on the performance of Non-Bank Financial Institutions (NBFIs) in Bangladesh. Tobin's Q, Return on Assets and Return on Equity were used to measure NBFIs in Bangladesh.

In addition, Nwude, Itiri, Agbadua, and Udeh (2017) shared the same findings as Singh (2016), which indicated that financial leverage contributed negatively to a firm's performance. In their study, they agreed that Nigeria followed the POT, since the results showed that financial leverage had a negative impact on the performance of selected Nigerian firms.

A study conducted by Rahman et al. (2018) on the effects of corporate financial leverage in Publicly Traded Manufacturing firms in Bangladesh showed negative results between Publicly Traded Manufacturing's financial leverage and firm performance. Hence, this result is in line with the assumptions of the POT. Another study in line with the POT assumptions is the study conducted by Akhtar and Javed (2012). Their research which focussed on the interrelationship between capital structure and financial performance, firm size, and growth, has indicated that capital structure, leverage, interest cover, and sales growth negatively impacted firm performance.

Relationship of Financial Leverage and Shariah-compliant Firm Performance

Studies on the performance of Shariah-listed firms, especially in Malaysia, can be considered as few in number compared to other countries. Shahar and Shahar (2015) studied the impact of firm leverage on performance in Shariah and non-Shariah firms in Malaysia. They found a negative relationship between leverage and the performance measure (ROA, ROE) in Malaysia's Shariah listed firms; on the other hand, there exists an inverse relationship between leverage and the performance measure (ROA, ROE) in the non-Shariah listed firms in Malaysia. Hence, different findings exist between Shariah and non-Shariah firms in Malaysia.

Another study by Sahudin et al. (2019) presented that the relationship between financial leverage and Shariah-compliant firms' performance agrees with the POT. In this study, the POT is the dominant theory governing Malaysia's corporate financing decision. Likewise, Jaafar, Muhamat, Basri, and Joreme's (2020) findings were aligned with Pecking Order Theory, where the Shariah trading and services companies in Malaysia prefered to use internal financing rather than external financing. The results were supported by a previous study done by Ibrahim and Masron (2011). In

contrast, a study conducted by Ramli and Haron (2017) was found to be consistent with the TOT.

However, in terms of the relationship among financial leverage towards Shariah-compliant firms' performance, most of the findings indicated a negative relationship between these two variables since, in Islam, internal sources such as profit or retained earnings are preferred. Hence, most of the researchers believed that financial leverage influences Shariah-compliant firm performance and therefore should be consistent with the POT.

METHODOLOGY

In this section, the discussion concentrates on the regression model, specifically on the effect of financial leverage on firm performance. Panel regression analysis was employed to examine the relationship between firm performance and financial leverage.

Sample of the Study

The sample comprised of Shariah listed consumer products & services firms in Malaysia from 2014 to 2018. Due to incomplete data for the study period, this study only examined 60 Shariah listed consumer products & services firms. The data was collected from each firm's annual report from 2014 to 2018. The firms' level data on Tobin's Q and Return on Asset (ROA) was collected from the Thomson Reuters Financial Data Stream.

Theoretical Model

This model refers to the conceptualization of the relationship between the dependent variable and the independent variables. The panel data regression was applied to analyze the effect of financial leverage on firm performance. Tobin's Q and Return on Asset (ROA) indicated the firms' financial performance indicators in Model 1 and Model 2 respectively. The basic model for firm performance and financial leverage follows Singh (2016) and Antonio (2002). Therefore, to analyze the relationship, two regression models were constructed.

$$\text{Model 1: TOBIN'S } Q_{it} = \beta_o + \beta_1 DAR_{it} + \beta_2 DER_{it} + \beta_3 TNGBLTY_{it} +$$
$$\beta_4 SIZE_{it} + u_{it} + \varepsilon_{it} \tag{1}$$
$$\text{Model 2: } ROA_{it} = \beta_o + \beta_1 DAR_{it} + \beta_2 DER_{it} + \beta_3 TNGBLTY_{it} + \beta_4 SIZE_{it}$$
$$+ u_{it} + \varepsilon_{it} \tag{2}$$

where, *TOBIN'S* Q_{it}, and ROA_{it} are the financial performance indicators for Shariah-listed Consumer Products & Services firms *i in year t. TOBIN'S* Q_{it} is the ratio of the market value of firms' equity plus total liabilities to book value of total assets (Market Value Equity + Total Liabilities/Book Value Total Asset). ROA_{it} is the ratio of net income to total assets (Net Income/ Total Asset). DAR_{it} is the ratio of total liabilities to total assets, DER_{it} is the ratio of total liabilities to total equity, $TNGBLTY_{it}$ is the ratio of net fixed assets to total assets, and $SIZE_{it}$ is calculated as the natural logarithm of net sales, which a control variable in this model. u_{it} is the individual effect of firm *i,* and ε_{it} is the error term. ROA_{it} is the most well-known accounting-based variable of firms' performance (Admassu, 2016; Bhayani, 2018; Lin & Chang, 2011; Ramli & Haron, 2018). *Tobin's* Q_{it} has been used as a vital valuation indicator of firms' performance (Singh, 2016; Antonio, 2002, Sarkar 2022).

This study attempted to see the relationship between financial leverage variables and firm performance among the listed consumer products & services of Shariah-compliant firms in Malaysia, and to examine whether this study is in line with the POT or the TOT.

Data Analysis

A panel data analysis was used in this study to identify the relationship between financial leverage and firm performance. Hsiao (2003) defined panel data as a given sample of an individual over time, thus providing multiple observations on each individual in the sample. Panel data is also known as pooled data, pooled time-series and cross-sectional data and event history analysis (Greene, 2012; Baltagi, 2008; Gujarati, 2003). The advantage of using panel data is that it provides researchers with many data points, increasing the degree of freedom and reducing collinearity among variables, hence improving econometric estimates' competence (Hsiao, 2003). Besides, panel data can also detect and measure effects better, which

is unavailable in pure cross-section or pure time-series data (Gujarati & Poter, 2009).

Descriptive Statistical Analysis

Table 2 below presents the results of the descriptive statistics of the dependent variable, while Table 3 below illustrates the descriptive statistical results for the independent variable of this study.

Table 2: Descriptive Statistics of Dependent Variables

	ROA	TOBIN'S Q
Mean	0.699	1.979
Median	0.452	1.830
Maximum	4.341	7.400
Minimum	0.003	-0.171
Std. Dev	0.788	2.047
Skewness	1.811	0.777
Kurtosis	6.120	2.958
Jarque- Bera	285.625	30.226
Probability	0.000	0.000
Observations	300	300

Table 2 presents the dependent variable's descriptive statistics and firm performance, which comprised return on asset (ROA) and Tobin's Q. It showed that the means of both indicators were 0.699 and 1.979. This indicates that all the Shariah Listed Consumer Products & Services firms experienced higher performance based on the market value performance (Tobin's Q). In the value of skewness, none of the variables were equal to zero. The skewness value should be similar to zero (Gujarati, 2009). If both the indicatos showed positive skewness it implied that the distribution had a long right tail.

Meanwhile, the value of kurtosis of return on asset (ROA) was 6.120, and the importance of kurtosis of Tobin's Q was 2.958. Gujarati and Porter (2009) stated that the kurtosis value should be equal to three for normally distributed data. In this study, the kurtosis value of ROA indicated Leptokurtic or the distribution was peaked as compared to normal distribution. Finally, the *p-value* of Jarque-Bera stated that all the indicators of the dependent variables were equal to 0.000, which is less than 0.01, and it indicated a significant result. Thus, it did not show a normal distribution.

Table 3: Descriptive Statistics of Independent Variables

	DAR	DER	TNGBLTY	TOBIN'S Q
Mean	0.926	1.894	0.673	2.154
Median	0.628	1.342	0.449	1.871
Maximum	3.154	4.298	3.154	7.400
Minimum	0.072	0.039	-0.171	0.039
Std. Dev	0.771	1.478	0.751	1.911
Skewness	1.480	0.124	1.739	0.863
Kurtosis	4.234	1.352	5.423	3.329
Jarque- Bera	128.570	34.709	224.664	38.583
Probability	0.000	0.000	0.000	0.000
Observations	300	300	300	300

Table 3 above illustrates the descriptive statistical results for the independent variables of this study. As stated by Gujarati (2009), for normal distribution data, the value of the mean should be close to the value of its median, the value of skewness is equal to zero, the value of kurtosis should be three, and the value of Jacque-Bera should not be significant for probability.

The mean value for debt asset ratio, debt-equity ratio, tangibility, and firm size was 0.926, 1.894, 0.673, and 2.154 respectively as shown in the Table above. As for the skewness value, none of the above variables was equal to zero. Positive skewness, represented by all independent variables, implied that the distribution had a long right tail. Meanwhile, the value of kurtosis of debt asset ratio, tangibility, and firm size was 4.234, 1.352, 5.423, and 3.329 respectively. Since the value exceeded three for all except the debt-equity ratio, the kurtosis indicated Leptokurtic or that the distribution was peaked compared to a normal distribution. As for the debt-equity ratio, the value of kurtosis was less than three. Therefore, it indicated playtikurtic or the distribution is flatter as compared to normal distribution. Finally, the *p-value* of the Jacque-Bera stated that the indicator of all the independent variables was equal to 0.000, which is less than 0.01, and it indicated a significant result. Thus, it did not show a normal distribution.

The findings from the descriptive data shown in Table 2 and Table 3 indicate that the data sample distribution is not normal. The initial findings signified the estimation result of the relationship between dependent variable and the independent variables were unable to produce a consistent result

with the Ordinary Least Squares estimation method. Hence, the Generalized Least Squares (GLS) method was employed to counter this issue (Ma'in & Ismail, 2012).

Correlation Analysis

The correlation matrix for this study is presented in Table 4 below. The table shows the correlation analysis results between all the independent variables in this study.

Table 4: Correlation Among Independent Variables

	DAR	DER	TNGBLTY	SIZE
DAR	1.000			
DER	0.037	1.000		
TNGBLTY	-0.005	0.189	1.000	
SIZE	0.072	-0.854	-0.347	1.000

Correlation analysis was employed to examine the presence of the multicollinearity problem among the variables. Correlation analysis was also used to describe the strength and direction of the linear relationship between variables (Shahar & Shahar, 2015). As shown in Table 4 in general, the correlation coefficient between independent variables is below 0.8 (not severe multicollinearity) except for DER and SIZE, which is 0.854.

Breusch-Pagan Godfrey Test

To detect the presence of heteroscedasticity, the Breusch-Pagan Godfrey test was employed. The test included testing the null hypothesis, assuming the variance of the errors is homoscedasticity or heteroscedasticity versus the alternative that the errors did not have persistent variance.

Table 5: Model 1 (ROA as A Measure of Firm's Performance)

Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.459	Prob. F(4,295)	0.046
Obs*R-squared	9.679	Prob. Chi-Square(4)	0.046
Scaled explained SS	30.354	Prob. Chi-Square(4)	0.000

Table 6: Model 2 (Tobin's Q as A Measure of Firm's Performance)

Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	22.448	Prob. F(4,295)	0.000
Obs*R-squared	70.006	Prob. Chi-Square(4)	0.000
Scaled explained SS	159.291	Prob. Chi-Square(4)	0.000

Based on the Heteroscedasticity test as shown in Table 5 and Table 6, the p-value of the two models of firm performance were at 0.000 for Return on Asset (ROA) and 0.000 for Tobin's Q. These values show a significance; thus, the null hypothesis was rejected. Therefore, both models of firm performance indicated the presence of heteroscedasticity in this study. Generalized Least Squares (GLS) can be used to account for the heteroscedasticity problem (Ma'in & Ismail, 2012). Thus, this is why the study should use Generalized Least Squares (GLS) as an alternative method of estimation.

Findings of Panel Data

To identify the effects of financial leverage on firm performance of Shariah Listed Consumer Products & Services Firms in Malaysia, panel data regression was estimated.

Table 7: Model 1 (ROA as a measure of Firm's Performance)

	Pooled Regression Model	Fixed Effect Model	Random Effect Model
Intercept	1.662	0.764	0.961
	(0.009)	(0.000)	(0.000)
DAR	-0.149	0.013	-0.022
	(0.009)***	(0.027)**	(0.687)
DER	-0.275	-0.049	-0.129
	(0.000)***	(0.003)***	(0.024)**
TNGBLTY	-0.109	0.029	-0.008
	(0.077)*	(0.001)***	(0.895)
SIZE	-0.106	-0.001	0.005
	(0.023)**	(0.914)	(0.898)
R^2	0.150	0.930	0.030
Adj. R^2	0.139	0.912	0.017
F statistics	13.045	49.962	2.315
	(0.000)***	(0.000)***	(0.057)*
DW Statistics	0.359	1.797	0.896
Total observations	300	300	300

Note: (***), (**) and (*) indicates significant at 1%, 5% and 10% respectively.

Table 8: Diagnostic test of Model 1

	Result	Probability
Likelihood Test	34.761	(0.000)***
Lagrange Multiplier Test	215.559	(0.000)***
Hausman Test	10.713	(0.030)**

Note: (***) and (**) indicates significant at 1% and 5% respectively.

To identify which empirical methodology (pooled regression model, fixed-effect model, and random effect model) was the most suitable for model 1, Return on Asset (ROA), as a measure of a firm's performance, three statistical tests were performed. First, a likelihood test was used to specify the best model between the pooled regression model and the fixed effect model. Second, to specify the best model between the pooled regression model and random effect model, the Lagrange multiplier test was used. Finally, the Hausman test was used to specify the best model between the fixed effect model and the random effect model.

Table 8 above shows the result of the three tests for model 1. As for the likelihood test, the *p-value* was equal to 0.000, which is less than 0.01, and it indicated a significant result. Thus, the null hypothesis was rejected, and the results suggested that the fixed effect model was the most suitable in this case. Next, in the Lagrange multiplier test, the *p-value* was also equal to 0.000, which is less than 0.01, and it indicated a significant result. Thus, the null hypothesis was rejected, and the results suggested that the random effect model was suitable in this case. Lastly, in the Hausman test, the *p-value* was equal to 0.030, which is less than the 5% significance level, and it indicated that the results were significant. Thus, the null hypothesis was rejected, and the results suggested that the fixed effect model was the most suitable in this case. Therefore, in the first model, Return on Asset (ROA), as a measure of firm performance, details of the analysis will be based on the fixed-effect model (Table 7, 3rd column).

Table 7 showed that the *p-value* of the independent variables, Debt Asset Ratio (DAR), and tangibility significantly impacted Shariah compliant firm performance. At the same time, the Debt Equity Ratio (DER) had a significant and negative impact on Shariah's firm performance. This result is consistent with Singh (2016), Shahar and Shahar (2015), Nwude et al. (2017), and Admassu (2016), which presents that leverage (DER) has a negative impact on ROA. According to Shahar & Shahar (2015), there was a

negative relationship between leverage (DER) towards the firm performance variable due to Shariah Compliance, where the firms would minimize their capital cost. Therefore, internal financing was preferred compared to external financing. This means that leverage in the Shariah-compliant firms cannot exceed the value of its tangible assets. As a result, ROA exhibited a negative relationship with the leverage variables.

Meanwhile, debt asset ratio and tangibility indicated a positive effect on the firm performance indicator, Return on Asset (ROA). Mackie (1990) concluded that a firm with a high fraction of plant and equipment (tangible assets) is the asset base that made the debt choice more likely and influences the firm performance. Akistnye (2008) argued that a firm that retains significant investments in intangible assets will have smaller financial distress costs than a firm that relies on intangible assets. Therefore, the relationship between asset tangibility and firm performance is expected to be positive.

The adjusted R^2 in the fixed effect model was equal to 0.912, and the *p-value* of the *F*-statistic was at 0.000. This result indicated that the explanatory variables were significant in determining the dependent variable at a 1% level of significance. So, this model is a good fit. The DW statistic computed the value of d, which is 1.797, and indicated that this model had no autocorrelation problem.

Table 9: Model 2 (Tobin's Q as a measure of Firm's Performance)

	Pooled Regression Model	Fixed Effect Model	Random Effect Model
Intercept	5.457	2.405	4.641
	(0.000)	(0.000)	(0.000)
DAR	-0.184	-0.081	-0.246
	(0.014)**	(0.013)**	(0.001)***
DER	-1.405	-0.117	-1.109
	(0.000)***	(0.001)***	(0.000)**
TNGBLTY	-0.294	-0.019	-0.159
	(0.000)***	(0.077)*	(0.058)*
SIZE	-0.208	-0.054	-0.105
	(0.000)**	(0.011)*	(0.049)*
R2	0.781	0.989	0.501
Adj. R2	0.778	0.987	0.495
F statistics	263.637	363.036	74.193

	(0.000)***	(0.000)***	(0.000)***
DW Statistics	0.578	1.669	0.969
Total observations	300	300	300

Note: (***), (**) and (*) indicates significant at 1%, 5% and 10% respectively.

Table 10: Diagnostic test of Model 2

	Result	Probability
Likelihood Test	33.389	(0.000)***
Lagrange Multiplier Test	106.589	(0.000)***
Hausman Test	71.313	(0.000)***

Note: (***) indicates significant at 1% level.

Table 10 above shows the results of the three statistical tests of panel equation for model 2, Tobin's Q. To identify which empirical methodology (pooled regression model, fixed effect model and random effect model) was the most suitable for Model 2, Tobin's Q as a measure of firm performance, three statistical tests were performed. First, a likelihood test was used to specify the best model between the pooled regression model and the fixed effect model. Second, to specify the best model between the pooled regression and random effect model, the Lagrange multiplier test was used. Finally, the Hausman test was used to specify the best model between the fixed effect model and the random effect model. As for the likelihood test, the *p-value* was equal to 0.000, which is less than 0.01, and it indicated a significant result. Thus, the null hypothesis was rejected, and the results suggested that the fixed effect model was the most suitable in this case. Next, in the Lagrange Multiplier test, the *p-value* was also equal to 0.000, which is less than 0.01, and it indicated a significant result. The results suggested that the random effect model was suitable in this case.

Lastly, in the Hausman test, a p-value was equal to 0.000, which is less than the 1% significance level, and it indicated the results were significant. Thus, the null hypothesis was rejected, and the results suggested that the fixed effect model was the most suitable in this case. Therefore, in the second model, with Tobin's Q as a measure of firm performance, the details of analysis was based on the fixed-effect model (Table 9, 3rd column). The finding is supported by Sarkar (2022) that the fixed effect model is applied when Tobin's Q has been used as the dependent variable to show the performance of Non-Bank Financial Institutions in Bangladesh.

The results of as in Table 9 show that the *p-value* of all the independent variables, Debt Asset Ratio (DAR), Debt Equity Ratio (DER), Tangibility and Firm's size, was a negative significant impact at the 1% level, 5% level and 10% level. This result shows that the leverage variables had a negative effect on Shariah listed consumer products & services firm performance in Malaysia.

From the Islamic perspective, debt is allowed, but debt cannot be encouraged for non-essential and wasteful consumption and unproductive speculation (Ahmed, 2010). Therefore, according to Ahmed (2010), Shariah-compliant firms operate differently from Non-Shariah-compliant firms by choosing their internal equity, internal debt, Mudharabah-based equity and Mushakarah-based equity compared to external sources. As a result, leverage will negatively impact the performance of Shariah Compliant Firms.

Also, the adjusted R2 in the fixed effect model was equal to 0.987, and the *p-value* of the *F*-statistic was at 0.000. This result indicated that the explanatory variables were significant in determining the dependent variable at the 1% level of significance. Hence, this model is a good fit. The DW statistic value was 1.669, indicating that this model had no autocorrelation problem.

This model's findings also showed that Tobin's Q is the best model that explains the relationship between financial leverage and the Shariah firm performance. Ahmed (2010) indicated that Shariah-compliant firms are relevant to the pecking order theory in terms of Shariah-compliant firms. In this theory, Shariah-compliant firms will tend to choose their internal sources as compared to external sources. Hence, it indicates that leverage will negatively impact the performance of the firms. Since all of the variables of financial leverage showed an impact on firm performance, it is in line with the POT. Due to this, Tobin's Q is the best model that explain the relationship between financial leverage and Shariah-compliant firms in Malaysia.

This result is in line with the study by Antonio (2002), which indicated that Tobin's Q is a good indicator of firm performance. Antonio stated that Tobin's Q could be utilized as a global indicator of firm performance because Tobin's Q results in the firms' past performance and points to

growth opportunities following the value of q (future performance). Therefore, Tobin's Q is the best model compared to the ROA in explaining the relationship between financial leverage and Shariah-listed Consumer Products & Services firms in capital structure decisions in Malaysia. Meanwhile, ROA only measures the ratio of net income to total assets for Shariah listed consumer products & services firms.

CONCLUSION AND RECOMMENDATIONS

This study has strived to investigate the effects of financial leverage on the Shariah Listed Consumer Products & Services firm performance in Malaysia from 2014 to 2018. The theoretical literature on financial leverage was created by the assumption of Modigliani and Miller (1958); hence, the development of the TOT and the POT was reviewed in this study to provide an adequate understanding on how the use of leverage can impact the performance of Shariah Listed Firms in Malaysia.

In the second model, with Tobin's Q as a measure of firm performance, the Hausman test results showed the 1% significance level. Thus, the results are significant. Hence, the null hypothesis was rejected. The results suggested that the fixed effect model was suitable to relate financial leverage and Shariah firm performance. The study revealed that all the independent variables negatively correlated with Shariah firm performance. Hence, the result aligns with the POT. The outcomes of previous studies also support that the relationship between financial leverage and the Shariah firm performance will be in line with the POT since Shariah firms will prefer internal financing over external financing.

In this study, the results revealed that the financial leverage contributes negatively to the Shariah Listed Consumer Products & Services firm performance in Malaysia within the period under review, which supports the POT theory. Since the capital structure decision is crucial for any business organization, these findings are significant from a Shariah perspective. The study is expected to provide more knowledge about how Shariah-compliant firms would minimize their capital costs by focusing more on internal than external financing. Therefore, policymakers and other players in the economy and related fields should not ignore the importance of this outcome.

It will also contribute to the development of Shariah Listed Companies, especially in Malaysia.

Since the capital structure decision is essential for any business organization, including Shariah-compliant firms, this study is expected to enrich the literature and knowledge on Shariah-compliant firm efforts to minimize its capital cost. In terms of policy, this study provides an insight to policymakers in forecasting firms' long-term plans, enhancing their performance and increasing their profits. It is crucial because each firm contributes to the health of the economy of a country. Thus, this study is significant in providing information about the Shariah-compliant firm performance; also, it gives a more comprehensive understanding of Shariah firm performance to policymakers so that better governance of Shariah firms can be practiced effectively through a complete policy on financial management.

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APPENDIX 1

Table. List Name of the Consumer Products & Services Firms as of 31st May 2019

No.	Name of Firms
1	Acoustech Bhd
2	Advance Synergy Bhd
3	AEON Co. (M) Bhd
4	AHB Holdings Bhd
5	AirAsia X Bhd
6	Ajinomoto (Malaysia)
7	Amtek Holdings Bhd
8	Amway (Malaysia) Holdings Bhd
9	Apollo Food Holdings Bhd
10	Asia Brands Bhd
11	Avillion Bhd
12	Bermaz Auto Bhd
13	Bonia Corporation Bhd
14	C.I. Holdings Bhd
15	CAM Resources Bhd
16	CCK Consolidated Holdings Bhd
17	Classic Scenic Bhd
18	CNI Holdings Bhd
19	Cocoaland Holdings Bhd
20	D.B.E. Gurney Resources Bhd
21	DeGem Bhd
22	DRB-HICOM Bhd
23	Dutch Lady Milk Industries Bhd
24	Eastland Equity Bhd
25	EKA Noodles Bhd
26	Emico Holdings Bhd
27	Eng Kah Corporation Bhd
28	Esthetics International Group Bhd
29	Euro Holdings Bhd
30	Formosa Prosonic Industries Bhd

No.	Name of Firms
31	Greenyield Bhd
32	Hup Seng Industries Bhd
33	Hwa Tai Industries Bhd
34	IQ Group Holdings Bhd
35	Kamdar Group (M) Bhd
36	Kawan Food Bhd
37	Khee San Bhd
38	Khind Holdings Bhd
39	Latitude Tree Holdings Bhd
40	Lay Hong Bhd
41	Nestle (Malaysia) Bhd
42	NTPM Holdings Bhd
43	Padini Holdings Bhd
44	Paos Holdings Bhd
45	Paragon Union Bhd
46	Parkson Holdings Bhd
47	PCCS Group Bhd
48	Pelikan International Corporation Bhd
49	Petronas Dagangan Bhd
50	Power Root Bhd
51	PBB Group Bhd
52	QL Resources Bhd
53	Sanbumi Holdings Bhd
54	Saudee Group Bhd
55	Sime Darby Bhd
56	Solid Automotive Bhd
57	Spritzer Bhd
58	Tan Chong Motor Holdings Bhd
59	UMW Holdings Bhd
60	Yee Lee Corporation Bhd

(Source: Securities Commission of Malaysia, 2019)