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FUND CHARACTERISTICS AND FUND MANAGER SKILLS AS DETERMINANTS OF MUTUAL FUND PERFORMANCE: EVIDENCE FROM SHARIA EQUITY FUNDS IN INDONESIA

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ABSTRACT

As a country with the largest Muslim majority population in the world, Indonesia is the most potential target market for sharia-based products. The increasing public enthusiasm for various sharia investment products indicates this. There are two aims of this study. The first aim is to evaluate the performance of sharia equity funds in Indonesia by employing risk-adjusted returns as the measurement and its investment manager's competence. The second aim is to provide empirical evidence of whether fund characteristics such as fund size, expense ratio, and portfolio turnover ratio, together with fund manager skills such as stock selection skills and market timing ability, influence fund performance. This study used a sample of 15 sharia equity funds in Indonesia with an observation period from 2017-2021. Secondary data on fund characteristics are available on the annual financial report contained in the renewal prospectus of each sample. Meanwhile, secondary data of portfolio return, market return, and risk-free rate for measuring fund manager skills and fund performance can be obtained from several data provider websites. The data analysis technique used in this study is descriptive analysis and panel data multiple regression analysis. This study provides additional empirical evidence in the field of sharia capital market investment that is beneficial for future researchers, and also useful for sharia-compliant investors as another essential reference regarding factors that can significantly influence sharia equity fund performance.

Keywords: Sharia mutual fund; fund performance; fund manager skill; fund characteristics

1. INTRODUCTION

Mutual funds are an investment vehicle available in many countries across the world. They are essentially an investment basket that pools funds from investors and allocates them into various securities, typically capital market and money market instruments (Bani Atta & Marzuki, 2020). Mutual funds have an important intermediation role in the financial market of any country.

Developed financial intermediation will make a country's economic activities flourish by providing local and foreign investors opportunities. Mutual funds are managed by Asset Management Companies (AMCs), under their investment managers, which aims to invest their investors' fund in various profitable financial instruments (Ahmad et al., 2017).

As one of the largest Muslim-majority countries, Indonesia has great potential in developing Islamic capital market investment products, including sharia mutual funds, which have different criteria from conventional mutual funds. Based on the Islamic mutual fund statistics report published by Indonesia's Financial Services Authority or OJK (2022), there are 289 sharia mutual funds in Indonesia's capital market with a total Net Asset Value (NAV) reaching approximately IDR 44 Trillion in December 2021. That number is equivalent to 13.15% of the total number of mutual fund products and equivalent to 7,61% of the total NAV in Indonesia.

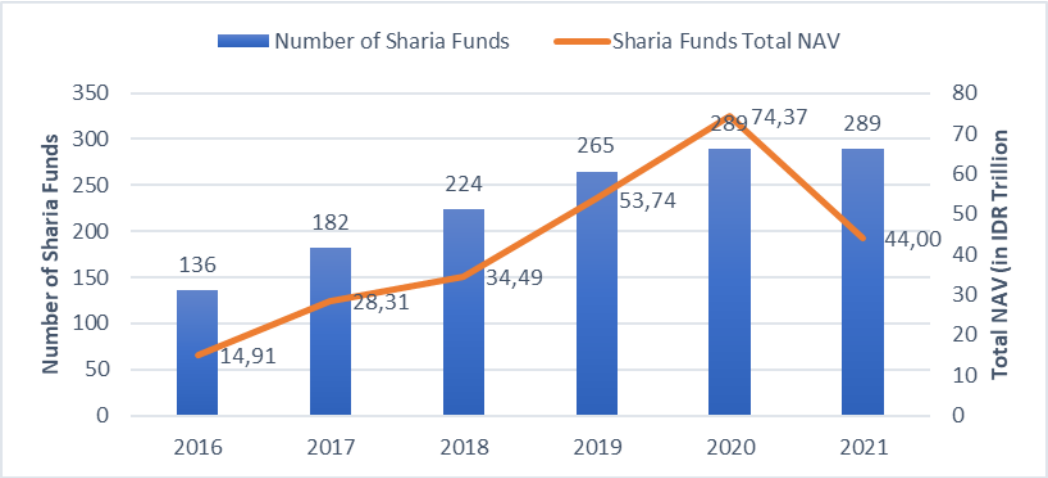

Figure 1. Indonesia sharia mutual funds development

According to Ahmad et al. (2017), the fundamental framework for an Islamic financial system is sharia principles; a set of rules and regulations governing the economic, social, political, and cultural dimensions of human beings living in societies. The primary sources for these sharia laws originated from the Quran, the Sunnah, and Islamic jurisprudence. OJK also regulates sharia investment matters on POJK No.15/POJK.04/2015, stating that the selection of investment instruments and investment mechanisms should not be against the sharia principle, which does not

impose measures such as usury, gambling, ambiguity, bribery, and exploitation. In other words, sharia funds must invest only in halal companies or not related to the above measures.

The spirit of sharia-compliant investing is similar to that of ethical and socially responsible investing. In contrast, Islamic financing is more "risk sharing" than "risk shifting" as often practiced in conventional debt-based financing (Lubza Nihar & Modekurti, 2021). Non-muslims investors who realize that sharia mutual funds are established on ethical principles, and therefore invest only in socially responsible securities, might also be interested to invest in this instrument. Thus, non-muslim investors are enticed to invest in the funds as they consider them part of socially-responsible investment (SRI) funds. In contrast, religious investors prefer sharia mutual funds as they value ethics in pursuing their investments (Mughal et al., 2017).

The main advantage of a mutual funds is that it can be regarded as one of the diversification strategies in the investment activity and an alternative investment instrument for investors, especially those with limited time and ability to calculate risk on the investment (Robiyanto et al., 2019). However, the investors may face a risk that sharia mutual funds cannot provide a better return or yield than conventional mutual funds. That risk is due to the limitation of allocated investment funds that are less than optimal. This statement is quite reasonable, considering the products of sharia mutual funds in Indonesia are still limited in numbers. It is crucial for sharia-compliant investors to understand the performance of mutual funds before selecting the existing sharia mutual funds alternative (Hilman, 2017).

Several previous studies have investigated mutual fund performance and its possible determinants, whether it is fund characteristics or fund manager skills, or both (Ahmad et al., 2017; Bani Atta & Marzuki, 2020; Chong et al., 2021; Farid & Wahba, 2022; Kaur, 2018; Setiawan & Wati, 2019; Sanjaya et al., 2020; Singh & Tandon, 2021; Veeravel & Balakrishnan, 2022). However, there are differences in research results regarding the direction and significance of these factors' influence on the performance of mutual funds. Moreover, those studies mainly examine the mutual fund or equity fund in general, while studies on sharia mutual fund performance and its determinant are scarce, especially in Indonesia. This is due to the lack of adequate samples caused by the Indonesian Sharia fund industry is still in its emerging phases.

The object of this study will solely focus on sharia-based equity funds in Indonesia. This study aims to close the gap mentioned above by evaluating the performance of sharia equity funds in Indonesia and its investment manager's competence. Providing empirical evidence on whether fund characteristics such as fund size, expense ratio, and portfolio turnover ratio, together with fund manager skills such as stock selection skill and market timing ability, might influence Indonesian sharia equity fund performance is another objective of this study. Thus, the following research questions arise:

1) How is the performance of Indonesia Sharia equity funds?
2) How are the fund manager skills of Indonesia Sharia equity funds measured by stock selection skills and market timing ability?
3) How do fund characteristics and manager skills affect Indonesia's Sharia equity fund performance?

Literature Review

The performance of funds is directly related to modern portfolio theory, which addressed two important issues: return and risk. The modern portfolio theory began its development from Markowitz (1952), who introduced a new portfolio selection hypothesis and challenged the conventional one that stated the maximization of returns could be achieved through the diversification of assets that provide the highest expected return. In response to this model, Markowitz argued that portfolio attributed to the return variability. Therefore, to reduce risks, an investor should avoid securities with high covariance (Bani Atta & Marzuki, 2020).

Modern portfolio theory has become the main guideline that supports portfolio allocation decisions for various investment instruments such as mutual funds, retirement funds, and other institutions that seek maximum portfolio investment returns and minimize risk. Modern portfolio theory examines how investors with risk avoidance characteristics can form optimal portfolios by considering the exchange between market risk and expected returns (Robiyanto et al., 2019). Modern portfolio theory is still developing, with an increasingly narrow focus on mutual fund products as one of its main observed samples. From the various types of multi-factor models written previously, it has been proven that it is not enough to rely solely on one factor—systematic risk—as a determining factor for an asset valuation model.

Many things should be considered to answer the question of what factors can affect the performance of mutual funds. Mutual funds' performance can be described as the determination of the success of the portfolio manager to achieve the balance between the different rates of return and acceptable levels of risk. Thus, evaluating the performance of mutual funds does not mean measuring the return on these funds, but also measuring the risk levels associated with those returns during a particular time (Farid & Wahba, 2022). Robiyanto et al. (2019) also emphasized that if risk factors are taken into account, investors will get more in-depth information on the performance or outcome of a mutual fund associated with the risks taken to achieve such performance. Thus, the evaluation of mutual fund performance can be performed using measures that consider risk and return also referred to as a risk-adjusted return.

One of the most frequently used risk-adjusted returns is Sharpe Ratio. According to Ahmad et al. (2017), this ratio basically measures the rate of excess return according to its proportion to the unit change in risk. To get the Sharpe Ratio, the risk-free rate of return is taken out of the excess rate of return, and the subsequent yield is divided by the standard deviation of the portfolio's own rate of return. The higher the ratio, the better the fund performance compared to the risk, and vice versa. And because the risk-free rate of return is the minimum expected return on any financial investment, the risk of any investment should be attributed only to the excess return of investment above the risk-free rate itself (Lubza Nihar & Modekurti, 2021). Bani Atta and Marzuki (2020) also stated that Sharpe Ratio could also provide some insights into whether a mutual fund is efficient in selecting diversified stocks so that it can achieve higher levels of profit by taking lower risks. This statement can indicate a relationship between the Sharpe Ratio and the stock-selectivity skill of the investment managers.

Another measurement of risk-adjusted return besides Sharpe Ratio is Information Ratio which measures the portfolio's excess return on its reference market rate of return in relation to the standard deviation of the excess return itself. This ratio can measure whether a fund manager can consistently beat the market they are referring to. The higher the value, the better the performance of the fund manager. The mutual fund industry rule of thumb generally defines a value range between 0.4 and 0.6 as a good Information Ratio (Lubza Nihar & Modekurti, 2021). The value of Information Ratio can be obtained by calculating the difference between the rate of return on the mutual fund and the rate of return on the reference market, then dividing it by the standard deviation of the difference between the rate of return on the mutual fund and the market reference.

If the value of the mutual fund information ratio is positive or greater than the market information ratio—which is always zero—then it can be said that the mutual fund's performance is good (Robiyanto et al., 2019).

Two factors often used in previous studies as possible determinants of mutual fund performance are fund characteristics and fund manager skills. Some of the characteristics of mutual funds that have been analyzed as indicators that have the potential to influence mutual fund performance in the future are expense ratio, turnover ratio, and fund size (Alam & Ansari, 2020; Chong et al., 2021; Ferreira et al., 2013). Investment manager abilities' that can determine the performance of mutual funds are generally measured through stock selection skills and market timing ability as its proxies (Bani Atta & Marzuki, 2020; Hung et al., 2019).

The expense ratio is the annual maintenance fee charged to cover operational and administrative costs. Because information is something that is not free, an investment manager who collects any information, costs will be the same as management fees and transaction costs (Singh & Tandon, 2021). Fund manager skills should be reflected in better fund performance, thus being able to justify higher management fees. In some cases, high management costs signify superior instability and result in better performance. In fact, investment managers' ability can form a relationship between mutual fund costs and performance. If a well-qualified investment manager manages a mutual fund, the relationship between cost and fund performance is positive. However, this relationship will be negative when mutual funds are managed by incompetent investment managers (Graham et al., 2019). Suppose expense ratios are seen as the price that ordinary investors have to pay to investment managers. In that case, these investors pay for the benefits associated with investing in these funds and achieve better investment performance (Farid & Wahba, 2022).

Ahmad et al. (2017) found that expense ratio has a negative and significant effect on conventional funds' performance in Sharpe Ratio and Information Ratio, but has no significant influence on sharia funds' performance. On the contrary, Kaur (2018) showed that the expense ratio positively and significantly influences Indian fund performance using Sharpe Ratio as its proxy both in short-term and long-term periods. Nguyen et al. (2018) emphasized that the expense ratio has a positive and significant influence on fund performance in Sharpe Ratio, and argue that funds with good performance tend to increase the expense ratio for administrative reasons. The result of a significant expense ratio supports the efficient market theory.

Farid & Wahba (2022) also confirms that the expense ratio positively and significantly influences fund performance in Egypt by using Sharpe Ratio as its proxy. According to Ferreira et al. (2013), there is a lack of consistent evidence to suggest a negative and significant relationship between expense ratio and fund performance, based on their research findings where the relationship between the two is negative and significant only in a few sample countries and does not apply to mutual funds in the United States.

H1: Expense ratio has a positive and significant effect on Indonesia sharia equity fund performance

The portfolio turnover ratio in one year compares the portfolio's purchase or sale value in one period (whichever is lower) with the average net asset value in one year. This ratio describes the level at which assets are often traded in a mutual fund. In other words, this ratio represents mutual fund trading activity which can also lead to a higher expense ratio. A high portfolio turnover ratio indicates that a mutual fund is actively managed (Kaur, 2018). This ratio also correlates with the ability of investment managers, where the positive performance of mutual funds is caused by investment managers who are skilled at using their information superiority to trade securities more frequently and improve their performance (Chong et al. 2021).

Ahmad et al. (2017) found that the portfolio turnover ratio positively and significantly affects both conventional and sharia fund performance by using Sharpe Ratio as its proxy. However, the portfolio turnover ratio did not significantly affect sharia fund performance when Information Ratio was used as its proxy. Kaur (2018) also found that the portfolio turnover ratio positively affects fund performance by using the Sharpe Ratio as its proxy in the short term. However, its positive impact is not significant. On the other hand, Nguyen et al. (2018) showed that the portfolio turnover ratio has negative and significant influences on fund performance in Sharpe Ratio, thus suggesting that aggressive funds performed worse than passive funds. Singh and Tandon (2021) confirmed that the portfolio turnover ratio negatively and significantly affects fund performance when gross return is used as its proxy. However, the negative effect of the portfolio turnover ratio became insignificant when Treynor Ratio was used as its proxy.

H2: Portfolio turnover ratio has a positive and significant effect on Indonesia sharia equity fund performance

The size of the fund can affect its performance in many ways. Ahmad et al. (2017) found that fund size does not significantly influence conventional and sharia mutual fund performance measured in Sharpe Ratio and Information Ratio. Farid & Wahba (2022) confirmed that fund size negatively and significantly influences fund performance in Sharpe Ratio. Kaur (2018) employed two observation periods of Indian equity funds and the result was that fund size negatively affects fund performance in Sharpe Ratio. The significance is more significant in the short term but weaker in the long term.

Meanwhile, Ferreira et al. (2013) found that fund size affects America's fund performance negatively and significantly but affects other countries' fund performance positively and significantly. This shows that the phenomenon of diminishing returns to scale in the United States is not a general truth and does not necessarily apply to other countries as well. Sanjaya et al. (2020) confirmed that fund size has a positive but insignificant influence on Indonesian equity fund performance in Sharpe Ratio.

Although past studies mentioned above mostly use total net asset value (TNA) as a proxy for the size of a mutual fund, fund size also refers to the total pool of funds that investment managers will manage. Total assets under management (AUM) grow in two ways: either security included in the funds exhibit strong performance or there is an increase in capital inflows from investors. The inflow of the investor's money is due to the strong persistence of performance. AUM can be an obstacle to mutual fund performance for mid-cap funds but provides an advantage over cost efficiency for large-cap funds (Singh & Tandon, 2021).

H3: Fund size has a positive and significant effect on Indonesia sharia equity fund performance

Chen et al. (2021) argue that investors who are guided by fund manager skills in selecting their mutual funds will get better results when compared to relying solely on past performance or ratings from mutual fund rating agencies. If the investment manager can make a reasonably good selection of stocks, then the benefits of stock selection will exceed the costs incurred. They emphasize that the ability of investment managers to select stocks is more important than the ability to do market

timing. Investors should pay more attention to the ability of fund managers than to the past performance of mutual funds.

Stock selection skill has an enormous impact on the performance of mutual funds. In contrast, Aziz et al. (2022) define this factor as an investment manager's activity in choosing good stocks. The performance of mutual funds will improve along with the investment managers' ability to select good stocks. The more efficient the selection of these stocks, the more these mutual funds can obtain better returns with lower risk. Stock selection skills also include estimates when a stock is undervalued or overvalued relative to stocks in general. This indicates that fundamental analysis plays an important role in choosing stocks of an investment manager (Gusni et al., 2018).

Lubza Nihar and Modekurti (2021) argue that Alpha is compensation for the stock selection ability of an investment manager. The measurement of stock selection skill can be seen through the value of Alpha from either Treynor-Mazuy (TM) Model or the Henriksson-Merton (HM) Model. If the investment manager has an Alpha greater than zero, then the investment manager has superior stock selection skills. However, if the Alpha value is less than zero, or negative, then the investment manager has inferior stock selection skills (Sanjaya et al., 2020).

Bani Atta and Marzuki (2020) found that the value of Alpha obtained with the TM Model and HM Model has a positive and significant effect on the excess return of Malaysian conventional funds but has a negative effect on Malaysian sharia fund samples. Veeravel dan Balakrishnan (2022) also confirms that most of their big-cap fund samples in India have positive Alpha and significantly affect fund performance in excess return. Azis et al. (2022), in their research on Indonesian equity funds during the Covid-19 pandemic, revealed that the stock selection skill obtained from the TM Model has a positive and significant effect on the performance of mutual funds, which is represented by the Sharpe Ratio proxy. Approximately 81.18% of its equity fund sample has positive stock selection characteristics. Other research conducted in Indonesia by Gusni et al (2018), Sanjaya et al. (2020), and Setiawan & Wati (2019) also exhibit similar results regarding the significantly positive effect stock selection skill has risk-adjusted return performance.

H4: Stock selection skill has a positive and significant effect on Indonesia sharia equity fund performance

Market timing ability can be defined as a fund manager's strategy to adjust the allocation of invested capital among its investment portfolio, depending on future market conditions to obtain abnormal returns. The market timing model identifies the ability of investment managers to develop market entry and exit strategies to move the capital from safe assets to risky assets, and vice versa, based on scenarios of whether the market is projected to perform well or poorly. Good investment managers are more able to estimate the exit and entry strategies in the market for the better performance of their mutual funds (Bani Atta & Marzuki, 2020).

Like stock selection skills, market timing ability can be measured using the Treynor-Mazuy (TM) Model or Henriksson-Merton (HM) Model. Gamma (γ) in the TM Model represents the compensation for market timing ability in actively managed portfolios. If the coefficient value of gamma is positive and significant then the mutual fund is said to have successfully executed market timing, and vice versa (Lubza Nihar & Modekurti, 2021).

Alam and Anshari (2020) found evidence that Indian investment managers generally lack market timing ability as their research shows that market timing value is negative and significant towards fund performance. A similar result was also revealed in research conducted by Azis et al. (2022), where only 9,09% of its samples have positive market timing ability, and Sanjaya et al. (2020), where market timing ability has a positive but insignificant impact on fund performance by using Sharpe Ratio as its proxy. On the other hand, Gusni et al. (2018) and Bani Atta & Marzuki (2020) found that market timing ability has a negative but insignificant effect on fund performance.

The lack of evidence or insignificant impact market timing ability has on fund performance is perhaps not surprising. Several things can explain this, one of which is the movement of investment managers who may be limited either by the fund's investment objectives or by exchange authority regulations in using leverage and derivative products. They also argue that negative market timing ability can be associated with poor stock selection skills. Some investment managers are too confident in the stocks they choose and therefore are reluctant to change their investments while market trends change. This behavior may result in a negative and significant market timing ability (Pilbeam & Preston, 2019).

H5: Market timing ability has a negative and significant effect on Indonesia sharia equity fund performance

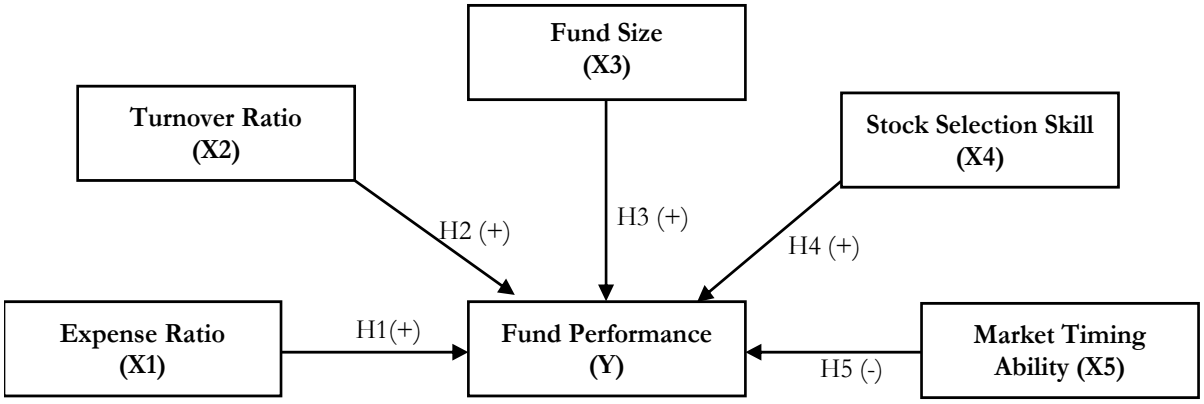

Figure 2. Empirical model

2) METHODS

This study employed a descriptive quantitative method with an initial population of 59 sharia equity funds in Indonesia during the 2017-2021 observation period. A purposive sampling technique was used to determine the number of samples for this study, with the following conditions that resulted in 15 sharia equity funds as the final samples:

1) Sharia equity funds that must be in Indonesian Rupiah (IDR) denomination;
2) Sharia equity funds that are not index funds and ETF; and
3) Sharia equity funds that have the completeness of the required data for each variable.

Fund characteristics secondary data, such as fund size, expense ratio, and portfolio turnover ratio was imported and processed from the annual financial report inside each fund's renewal prospectus. Fund manager skills value, such as stock selection skill and market timing ability, was generated from the Treynor-Mazuy regression model that has been done before the main data analysis was conducted. The secondary data needed to estimate fund manager skills and fund performance, represented by the Sharpe Ratio and Information Ratio, are portfolio return, risk-free rate, and market return. The risk-free rate used in this study was the BI 7 Days Repo Rate (BI7DRR), obtained from Bank Indonesia's official website. Portfolio returns are derived from each fund's NAV/unit data obtained from pasardana.id and Bareksa's official website. Market returns

derived from the Indonesia Sharia Stock Index (ISSI), rather than the Jakarta Composite Index (IHSG) widely used in most of the research conducted in Indonesia, obtained from id.investing.com website.

Table 1. Variables and operational definition

Variables	Operational Definition	Measurement
Fund Performance (PERF)	The determination of the success of the portfolio manager is to achieve a balance between the different rates of return and acceptable levels of risk.	• Sharpe Ratio = $\frac{R_p - R_f}{\sigma_p}$ • Information Ratio = $\frac{R_p - R_b}{\sigma_{(R_p - R_b)}}$
Expense Ratio (EXP)	The annual maintenance fee is charged to cover operational and administrative costs.	$\frac{Total\ Fund\ Operational\ Costs}{Total\ Fund\ Assets}$
Portfolio Turnover Ratio (TURN)	The comparison between the purchase or sale value of the portfolio in one period (whichever is lower) with the average net asset value in one year.	$\frac{Minimum\ of\ Total\ Securities\ Bought\ or\ Sold}{Average\ Net\ Asset\ Value\ or\ AUM} \times 100$
Fund Size (SIZE)	The total pool of funds that investment managers will manage.	Natural logarithm of Asset Under Management (AUM)
Stock Selection Skill (SSS)	Ability of investment managers to choose good stocks through fundamental analysis.	Treynor-Mazuy Model: $R_p - R_f = \alpha + \beta(R_m - R_f) + \gamma(R_m - R_f)^2 + \varepsilon$
Market Timing Ability (MTA)	Ability of investment managers to develop market entry and exit strategies based on scenarios whether the market is projected to perform well or badly	Treynor-Mazuy Model: $R_p - R_f = \alpha + \beta(R_m - R_f) + \gamma(R_m - R_f)^2 + \varepsilon$

This study used SPSS Statistics 22 as its analysis tool, where two different panel data multiple regression were planned to be executed on that platform. The relationship between fund characteristics, as well as fund manager skills, with fund performance, was presented as follow:

$$PERF_{Sharpe} = c + \beta_1 EXP + \beta_2 TURN + \beta_3 LogSIZE + \beta_3 SSS + \beta_3 MTA + \varepsilon$$

and,

$$PERF_{Information} = c + \beta_1 EXP + \beta_2 TURN + \beta_3 LogSIZE + \beta_3 SSS + \beta_3 MTA + \varepsilon$$

The data analysis technique this study employed was descriptive analysis to answer the first and second research questions and panel data multiple regression analysis to answer the third research question reflected in five hypotheses written in the previous section. There was a total of 75-panel data from five years of observation of each selected sharia equity fund. By combining time series of cross-section observations, panel data give more informative data, more variability, less

collinearity among variables, more degrees of freedom, and more efficiency (Gujarati, 2004, p. 637). Based on Basuki and Prawoto (2016), autocorrelation only occurs in time series data. Testing autocorrelation on data that is not time series (cross-section or panel) will be useless or meaningless. Therefore, this study did not include an autocorrelation test and only include normality, multicollinearity, and heteroscedasticity test.

3) RESULTS AND DISCUSSION

Descriptive Analysis

Based on Table 2 below, it can be concluded that the performance of the sharia equity fund in Indonesia during the observation period of 2017-2021 was relatively poor, in which the value of Sharpe Ratio is -0.1313 and Information Ratio is -0.2460 on average. This performance was followed by the average value of stock selection skill and market timing skill is -0.0014 and -0.7702 respectively, indicated relatively poor fund manager's skill on selecting stock and market timing.

Table 2. Descriptive statistics

Variables	Mean	Max	Min	Std. Deviation
Sharpe Ratio	-0.1313	0.464521	-0.5451	0.181836811
Information Ratio	-0.2460	0.415914	-1.52777	0.382357021
Expense Ratio	0.0443	0.1993	0.0159	0.023695052
Turnover Ratio	2.1951	13.2300	0.1000	2.311107359
Fund Size	24.9210	27.47029	22.61507	1.379254011
Stock Selection Skill	-0.0014	0.020833	-0.01877	0.007414831
Market Timing Ability	-0.7702	9.630354	-9.56406	4.560871892

Among all the samples, only Sucorinvest Sharia Equity Fund exhibits overall good fund performance in which its performance measured by Sharpe Ratio value was consistently positive during the observation period. However, its performance measured by the Information Ratio value was only positive during 2017-2020 and negative in 2021. This pattern was almost similar to its stock selection skill negative value only in 2021 and it's market timing ability negative value in 2019 and 2021. Additionally, the maximum value of the Sharpe Ratio and market timing ability above was from Sucorinvest Sharia Equity Fund in 2017 and 2018 respectively.

Based on Table 3 below, it can be concluded that only stock selection skill has a high degree or strong correlation (above 0.5) to both fund performance indicators. Market timing ability has

moderate degree or medium correlation (between 0.3 and 0.49) to Sharpe Ratio only, but has low degree or weak correlation (below 0.29) to Information Ratio. The rest of existing variables exhibit weak correlation to both fund performance indicators of Indonesian sharia equity fund.

Table 3. Pearson Correlations

Variables	Correlation	
	Sharpe Ratio	Information Ratio
Expense Ratio	0.179	0.173
Turnover Ratio	-0.048	-0.030
Fund Size	0.180	0.178
Stock Selection Skill	0.579	0.770
Market Timing Ability	0.325	0.102

Multiple Regression Analysis

According to previuos section this study only did three tests on classical model assumption before executing panel data multiple regression and its analysis. Those tests are normality, multicollinearity, and heteroscedasticity test. The testing result was as follow:

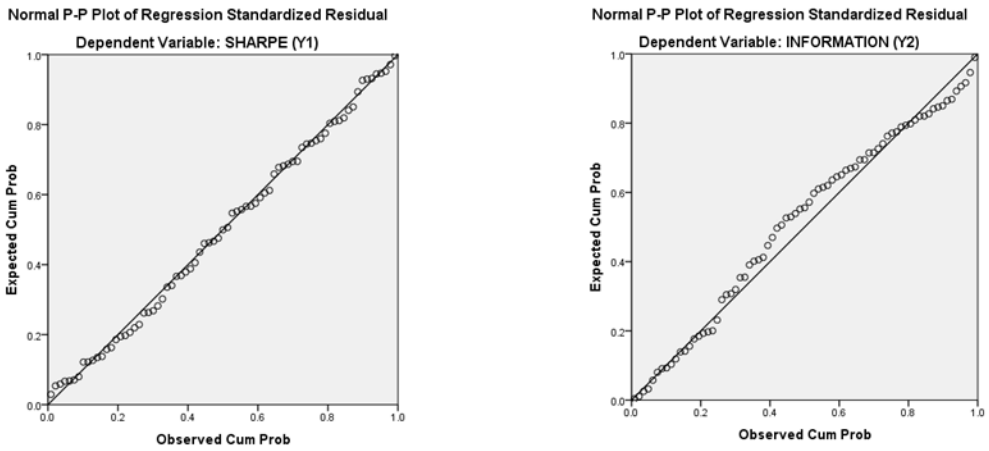

Figure 3. Normality test

Based on Figure 3 above, it can be concluded that the sample data has been drawn from a normally distributed population in which the observed data were on around the line with little deviation. And from Table 4 below it can be concluded that there was no multicollinearity problem in this study's model in which the tolerance of all independent variables exhibit a value above 0,1 and the VIF of all independent variables exhibited a value below 10. Glejser Test was used to test

the heteroscedasticity problem on the model in which Sharpe Ratio was used as dependent variable, whereas Spearman Rank Correlation Test was employed on the model in which Information Ratio was used as dependent variable. Table 5 below were the result of both tests respectively and it was concluded that there was no heteroscedasticity problem on both cases because all of its variables' significances is greater than 0.05.

Table 4. Multicollinearity test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)	-	-
Expense Ratio	0.3134	3.1904
Turnover Ratio	0.2957	3.3817
Fund Size	0.8529	1.1725
Stock Selection Skill	0.8491	1.1778
Market Timing Ability	0.8627	1.1591

Table 5. Heteroscedasticity test

	Expense Ratio	Turnover Ratio	Fund Size	Stock Selection Skill	Market Timing Ability
Glejser Test's (Sig)	0.080	0.104	0.901	0.460	0.084
Spearman's Rho (Sig. 2-tailed)	0.798	0.833	0.667	0.358	0.505

To analyze the magnitude of independent variables' relationship and influence on dependent variables, panel data multiple regression analysis was used in this study. Meanwhile, the F-test used in this study aims to determine whether independent variables on the model simultaneously affect the dependent variable significantly or not. Additionally, the test for determination coefficient (R2) used in this study aim to measure the model's ability to explain the dependent variable. Finally, the t-test was used with aim of knowing whether independent variables partially influence dependent variable significantly or not. Multiple regression equations based on Table 6 below are as follows:

$$PERF_{SHARPE} = -0.4446 + 1.1742EXP - 0.0062TURN + 0.0125LogSIZE + 16.2219SSS + 0.0182MTA$$

And,

$$PERF_{INFORMATION} = -0.9479 + 1.6751EXP - 0.0015TURN + 0.0282LogSIZE + 42.3662SSS + 0.0231MTA$$

Table 6. Panel data multiple regression statistics

	Dependent Variable			
	Sharpe Ratio		Information Ratio	
	Coefficient	p-value	Coefficient	p-value
(Constant)	-0.4446	0.1185	-0.9479	0.0634
Expense Ratio	1.1742	0.2760	1.6751	0.3835
Turnover Ratio	-0.0062	0.5850	0.0015	0.9411
Fund Size	0.0125	0.2653	0.0282	0.1614
Stock Selection Skill	16.2219	0.0000	42.3662	0.0000
Market Timing Ability	0.0182	0.0000	0.0231	0.0002
F-value	19.0593	0.0000	31.7441	0.0000
R-squared (R^2)	0.5800		0.6970	

According to Table 6 above, the F-values of 19.0593 and 31.7441 is statistically significant (p-value<0.05) and indicate that all independent variables significantly influence both dependent variables simultaneously. Based on the value of R2, it can be stated that 58% of the variability observed in Sharpe Ratio indicators can be explained by this study's regression model. The value is greater when the Information Ratio was used as the model's dependent variable, approximately at 69.7% level.

The result of the t-test on this study is as follows. Stock selection skill and market timing ability influence both fund performance indicators positively and statistically significantly (p-value<0.05). Therefore, H4 can be accepted and H5 can be rejected. According to Pilbeam and Preston (2019), market timing ability can be related to stock selection skill in which negative market timing ability can be associated with good stock selection skill, and vice versa, as the explanation of these results. If the investment manager can make a reasonably good selection of stocks, then stock selection benefits will exceed the costs incurred. Therefore, investors should pay more attention to the ability of fund managers than to the past performance of mutual funds (Chen et al., 2021).

The expense ratio affect both fund performance indicators positively thus supporting the argument from Graham et al. (2019) that if a well-qualified investment manager manages a mutual fund, the relationship between cost and fund performance is positive. Farid and Wahba (2022) also argues that if expense ratio are seen as the price that ordinary investors have to pay to investment managers, then these investors actually pay for the benefits associated with investing in these funds and achieved better investment performance. However, its positive influence is statistically insignificant (p-value>0.05). Therefore, H1 must be rejected.

A similar pattern also can be seen in the fund size variable, which has a positive but insignificant effect on both fund performance indicators. Although the inflow of the investor's money reflected in AUM is due to the strong persistence of fund performance, AUM can be an obstacle to mutual fund performance for mid-cap funds (Singh & Tandon, 2021). In contrast, sharia equity funds in Indonesia have lower market capitalization than their conventional counterparts. Therefore, H3 must be rejected.

Conflicting results can be seen from the portfolio turnover ratio's influence on both fund performance indicators. The effect is negative towards Sharpe Ratio but positive towards the Information Ratio. However, since the effect is not significant for both cases (p-value>0.05), it can be concluded that there was little evidence of whether investment managers of Indonesian sharia equity funds have information superiority to trade securities more and be able to improve their fund performance. Therefore, H2 must be rejected.

3. CONCLUSION AND RECOMMENDATIONS

As a country with the largest Muslim majority population in the world, Indonesia is the most potential target market for sharia-based products with great potential in developing Islamic capital market investment instruments, including sharia mutual funds, which have different criteria from conventional mutual funds. The result of this study indicated that Indonesian sharia equity fund performance and their fund manager skills are relatively poor during the observation period of 2017-2021 on average. Although fund characteristics that ordinary investors often use can be considered for their investment decision-making, sharia-compliant investors should pay more attention to the fund manager skills—stock selection skills and market timing ability—as those factors can affect fund performance significantly. If the investment managers have good skills, then the performance of their actively managed sharia equity funds can be improved, and vice versa. Investors also should select sharia equity funds with consistently positive values of risk-adjusted returns such as Sharpe Ratio or Information Ratio, rather than only looking for their raw return without considering the risks that come with it.

This study used monthly data of portfolio returns and market returns in the estimation process of both fund performance indicators and fund manager skills. Future research should use daily data to obtain research results in comparison with the same model and analytical method used

in this study. The research barriers of this study come from the inability to collect some of the variable data due to the incompleteness of data published by the asset management companies. Most data providers, such as custodian banks, mutual fund investment platforms, and the companies themselves only published the newest annual report or renewal prospectus without displaying the reports of previous years on their websites. Although pasardana.id website offers some past annual reports of the funds, the problem of incomplete data still persists. Therefore, OJK should impose another regulation for asset management companies to publish past annual reports of their managed funds rather than only posting the newest one.

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