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# ATTRIBUTES AND PERFORMANCE OF FUND MANAGEMENT COMPANIES: EVIDENCE FROM THE LARGEST SHARIAH-COMPLIANT FUND MARKETS

[*1]Ainulashikin Marzuki, [2]Anas Ahmad Bani Atta & [3]Andrew Worthington

[1,2] Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia.

[3] Department of Accounting, Finance and Economic,
Griffith University, Nathan, Queensland, 4111, Australia.

[*]Corresponding author: ainulashikin@usim.edu.my

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**ABSTRACT**

**Background and Purpose:** The study examines the effect of fund management companies' (FMCs) attributes on FMC performance in the four countries with the largest number of Islamic funds from 2007 to 2018.

**Methodology:** The study uses pooled regression analysis on 70 FMCs, comprising Saudi Arabia (25), Malaysia (20), Indonesia (14) and Pakistan (11). The sample is further divided into FMC with Islamic funds focused (IFFMC) and conventional funds focused (CFFMC).

**Findings:** Only past flows are insignificantly related to performance. Both proxies for size positively relate to returns, but only in the case of Saudi Arabia. In Pakistan, performance improves with assets under management (AUM), while in Malaysia and Indonesia, an increasing number of funds negatively relate to performance. A relatively high number of better performing funds positively affect FMC and vice versa. Additionally, there are significant differences in the factors determining IFFMC and CFFMC performance, with the number of funds and AUM positively affecting the performance of IFFMC but not CFFMC. Poorly performing funds adversely affect CFFMC but not IFFMC.

**Contributions:** This study provides useful information for investors using a top-down approach to FMC then fund selection, and for managers in evaluating the impact of factors like FMC scale and

scope on performance. The impact of these attributes differs between CFFMCs and IFFMCs which lies in the performance differences commonly observed, at the FMC and fund level.

**Keywords:** Islamic funds management industries, Islamic mutual fund, fund performance, Islamic finance.

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## 1.0 INTRODUCTION

Islamic finance continues its rapid pace of growth, with the industry as a whole currently worth some US$2.2 trillion and expected to increase further to US$3.8 trillion by 2022 (MIFC, 2020). Some segments of Islamic finance are growing even faster. In particular, in 2008 Islamic assets under management (AUM)—being those assets financial institutions manage on behalf of their clients and themselves, typically mutual funds—were just US$47 billion across 802 funds. However, just a decade later, these had grown to US$70.8 billion spread across some 1,535 funds (MIFC, 2017). Most of these were Islamic equity funds (42 percent), followed by Islamic money market (33.3 percent) and Islamic commodity funds (11.8 percent) (COMCEC, 2018). In terms of location, Saudi Arabia and Malaysia accounted for by far the largest shares of AUM (35.6 and 31.9 percent, respectively) and the number of funds (22.8 and 24.2 percent, respectively), followed at some distance by Indonesia and Pakistan.

Nevertheless, the Islamic funds management industry currently accounts for only a small share of the global funds management industry. In evidence, as at the end of 2016, the value of the global Islamic funds management industry was only USD56.1 billion compared to USD84.9 trillion for the funds management industry as a whole (or less than one percent) (COMCEC, 2018). As a result, it continues to be regarded as a somewhat niche financial sector. However, PriceWaterhouseCoopers projects that the Islamic fund management industry will experience accelerating growth in the future driven by the "…personal wealth of mass affluent clients and high net worth individual (HNWI) followed by the wealth managed by pension funds and insurance companies" (COMCEC, 2018, p. 23). HNWI wealth in particular is forecast to nearly triple in size to surpass USD100 trillion by 2025, driven especially by strong Asia Pacific growth (Capgemani, 2016). In addition, the Islamic funds management industry is becoming more accessible to institutional as well as non-Muslim investors, some of whom

increasingly regard Islamic funds as a subset of Socially Responsible Investment (SRI) and therefore potentially open to wider investment.

Given the strong growth of Islamic funds, fund management companies (FMCs) are beginning to take advantage of the opportunity for increasing overall investor demand for new investment exposures in their portfolios. As of 2016, the five-largest FMCs managing Islamic assets were located in either Saudi Arabia or Malaysia. These are (AUM in millions) NCB Capital (US$7,446), Jadwa Asset Management (US$6,599) and Samba Capital ($3,137) in Saudi Arabia and Public Mutual (US$7,232) and CIMB Islamic (US$4,890) in Malaysia. By comparison, the three-largest FMCs in next-placed Pakistan, Al Meezan Investment Management, NBP Fullerton Asset Management and Alfalah GHP Investment, were ranked only 21st, 31st and 35th with AUM of US$914 million, US$331 million and US178 million, respectively. The top-two FMCs in Indonesia, Mandiri Investasi and Trimegah Asset Management, were ranked even further behind in 39th and 46th place with AUM of US$123 and US$64 million, respectively. Clearly, despite relatively larger numbers of Islamic funds being located in Pakistan, Indonesia and other countries, the industry, at least in terms of AUM, is dominated by Saudi Arabia and Malaysia.

In view of the number of FMCs managing Islamic assets in these countries and the funds involved, a question naturally arises concerning whether the FMC they represent are able as a whole to beat key benchmarks and the nature of the attributes contributing to superior FMC performance. From a practical perspective, the importance of FMC performance evaluation is evident given the commonplace occurrence of reports provide rankings of FMC for investors (such as those by Morningstar and Barron's). These reports provide at least a printed page of performance evaluation based on certain standard criteria, both qualitative and quantitative, for each FMC. The objective of these reports is first to make data on FMC more available to investors, second, to eliminate information asymmetry and verify the statistics provided by FMC, and third, to grant credibility to FMCs acting in the best interests of investors. In so doing, these reports give investors greater confidence in their choice of FMCs. They can also assist investors in other ways as FMCs that receive positive ratings will also go a long way towards building trust and helping to provide a more satisfying long-term experience for investors.

However, while many existing studies concern the performance of mutual funds (with individual funds as the unit of analysis), those at the FMC level (with individual FMC as the unit of analysis) are much less common (Nanda, Wang, & Zheng, 2004; Elton, Gruber, & Green, 2007; Tower & Zheng, 2008; Premachandra, Zhu, Watson, & Galagedera, 2012;

McCourt & Ramos, 2019). Moreover, while a select few of these consider SRI FMCs (Adrianto, Chen, & How, 2018, 2019), almost none concern those FMCs focusing on Islamic mutual funds. This is a serious deficiency in that an understanding of the performance of FMCs is important for several reasons (Nanda et al., 2004). First, as a financial intermediary, a FMC is able to bring economies of scale to the management, distribution, servicing and promotion of its constituent funds. Second, FMCs have greater flexibility in reallocating its resources, including human resources, in response to market opportunities in comparison to stand-alone funds. Lastly, the reputation of a FMC is important to investors as it provides reassurance about the selection and monitoring of investment managers. Of course, these are concerns of equal if not greater importance in Islamic fund focused management companies given the newness, novelty and rapid growth of the segment.

The importance of focusing on FMCs that focus on Islamic mutual funds (IMFs) stems from several reasons. We expect the different characteristics of FMC that focus on IMFs and those that focus on conventional mutual funds (CMFs) because of the different characteristics of these two types of funds they managed. First, in addition to traditional goals (liquidity and diversification), IMFs focus on religious, social, and ethical goals. At the same time, IMFs apply Shariah screening in their portfolio construction. Shariah screening reduces the number of stocks in the universe, potentially reducing diversification, and this screening requirement imposes additional monitoring and compliance costs. Thus, IMFs may have lower risk-adjusted returns than CMFs. Second, IMFs invest in stocks with strong ESG metrics. ESG is defined as an investments' obligation to improve social welfare; and equitable and sustainable long-term wealth for stakeholders (Jamali, Karam, Yin, & Soundararajan, 2017). Previous research suggests that investors reward good ESG investment while poorly disclosed ESG investments indicate idiosyncratic risks (Mohammad & Wasiuzzaman, 2021; Miralles-Quirós, Miralles-Quirós, & Redondo-Hernández, 2019). Thus it is expected that FMCs focused on managing IMFs perform better than those of its counterpart.

Accordingly, the objective of this paper is to investigate the performance of FMC operating in four countries (Malaysia, Saudi Arabia, Indonesia and Pakistan) and the attributes contributing to their performance. We also extend it by not only comparing Islamic funds focused management companies (IFFMCs) with each other, but also with conventional funds focused management companies (CFFMCs) operating in comparable market conditions. This provides additional insight into the possible benefits or otherwise of IFFMCs. The remainder of the paper is organised as follows. Section 2 presents the background of the Islamic fund management industries in the selected countries. Section 3 discusses the requisite literature and

Section 4 presents the theory and methodology we use for our analysis. Section 5 provides the main empirical results. The final section discusses these results and concludes the paper.

## 2.0 ISLAMIC FUNDS MANAGEMENT IN SAUDI ARABIA, MALAYSIA, INDONESIA AND PAKISTAN

Saudi Arabia and Malaysia have been at the forefront of capitalising on developments in the emerging Islamic asset management sector (Bani Atta & Marzuki, 2019a). However, other countries have quickly followed suit, with the industry also growing strongly in countries as disparate as Ireland, the United States, Luxembourg, Indonesia, Kuwait, South Africa, and Pakistan. In terms of the number of Islamic funds, the leading countries (excluding Malaysia and Saudi Arabia) are (in descending order) Indonesia, Pakistan, Luxembourg, Kuwait, Ireland, Mauritius and the Cayman Islands (COMCEC, 2018). It is for this reason we focus on the top-four countries in Islamic funds management, namely, Saudi Arabia, Malaysia, Indonesia and Pakistan.

### 2.1 Saudi Arabia

Saudi Arabia has quickly emerged as the largest financial market in the Islamic finance world with many kinds of institutions and a broad and sophisticated range of financial products. As it stands, the Saudi Arabian financial system is very bank-centric with just 11 local banks accounting for more than half of the system's assets. Saudi Arabia is the Middle East's largest economy and grew by 2.21 percent in 2019 compared to 2018. The impressive growth and performance of the Saudi Arabian equities market have also led to the emergence of a large mutual fund industry (Benjelloun & Abdullah, 2009). Saudi Arabia is home to the largest number of Gulf Cooperation Council (GCC) domiciled investment funds. As at the end of 2019, data from the fund management regulator in Saudi Arabia, Capital Market Authority (CMA) reported that the number of mutual funds equals to 607 funds compared with 270 funds as at the end of 2015. The size of the funds' management industry was about US$124.28 billion in 2019 compared with US$98 billion as at the end of 2015. There were opportunities to invest in a variety of asset classes including stocks, bonds, balanced funds, and money market funds at the local, regional, and international level. As of the end of 2019, Saudi Arabia had 41 FMCs, compared to 33 FMCs as of the end of 2015.

The National Commercial Bank first familiarised itself with the idea of mutual funds in 1979 through its open-ended Al-Ahli Short Term Dollar Fund in the Saudi financial industry. Saudi Arabia's mutual fund market has given its people a massive increase in business growth

and financial advantage. The Islamic mutual fund industry in Saudi Arabia commenced in 1992. The influential Islamic institutions have also begun to extend their coverage across financial instruments to serve the state's citizens with a more sophisticated and ethical approach to investment programs. Besides financial deposits, basic savings and current accounts, Islamic institutions have implemented numerous investment programs aimed at controlling the savings of citizens relevant to Shariah law.

### 2.2 Malaysia

Mutual funds first commenced in the Malaysian financial system in 1959 with the establishment of Malaysian Unit Trust Limited (Abdul Rahman, Azlan Yahya, & Herry Mohd Nasir, 2010). However, the company only launched its first mutual fund in 1966 after renaming itself as Asia Unit Trust Berhad. The industry was boosted by a historic milestone when Permodalan Nasional Berhad (PNB) was introduced in 1979 and the first encouraging fund, Skim Amanah Saham Nasional (ASN), was launched in 1981. The encouraging response continues to have the fastest growth in 1991 when Amanah Saham Bumiputera (ASB) made its first appearance. The Arab Malaysian Unit Trust Berhad launched the first Islamic mutual fund, the Tabung Ittikal, in 1993. Legal, regulatory, and tax policies in Malaysia have subsequently assisted the rapid growth of the funds' management industry, both Islamic and conventional. The regulator of the fund management industry in Malaysia, Securities Commission Malaysia's (SC) reported that as at the end of 2019, the size of the funds' management industry was US$188.91 billion, compared to US$160.81 billion in 2015. The number of funds increased to 654 funds as of the end of 2019, compared to 611 funds as at the end of 2015. According to the Securities Commission (SC) of Malaysia (2020), there were 80 FMCs in Malaysia as of the end of 2019, compared to 51 FMCs as of end of 2015. Currently, Malaysia contributes 31.7 percent US$36.5 billion of the global AUM and is ranked number 2 based on the percentage of the overall US$105.5 billion global Islamic funds.

### 2.3 Pakistan

The first open-end mutual fund was launched in 1962 (Khorana, Servaes, & Tufano, 2005) when the National Investment (Unit) Trust was set up, followed by closed-end mutual funds in 1966, both state-owned. ABAMCO Ltd. (now is JS Investment Ltd.) launched the first IMF in Pakistan in 2002, with the net assets of Pakistan's IMF increasing fifteen-fold between 2003 and 2008. However, the 2008 financial crisis severely curbed subsequent growth, along with less than complementary tax policies. At the end of 2019, the total size of the asset management

industry stood at US$4 billion, compared with US$2 billion at the end of 2015. The number of funds increased to 255 funds at the end of 2019, compared with 221 as of 2015. According to the regulator of fund management companies in Pakistan, Securities and Exchange Commission, Pakistan had 30 FMCs at the end of 2019, compared to 22 FMCs at the end of 2015.

The Al Meezan Investment Management Limited launched its first close-end fund, the Al Meezan Mutual Fund, in 1995. In 2003, Al Meezan became the first company to operate as a fully-fledged Shariah-compliant asset management company. Later, it launched its first Islamic fund, known as Meezan Islamic Fund. Islamic equity gross assets have risen from US$800 million in 1996 to US$3.6 billion in 2003 (Abderrezak, 2008). Accordingly, in 1996, there were 29 Islamic equity funds, and, in March 2009, this number grew to 232 funds based on the list given by Failaka Advisors. Recently, the AUM Islamic fund management of Pakistan contributes 2.3 percent (or US$ 2.4 billion) globally and is ranked number nine based on the percentage of AUM to total Islamic Funds globally.

### 2.4 Indonesia

Indonesia is of course the world's most populous Muslim nation. However, the mutual fund industry in Indonesia did not commence until 1996 (Khorana et al., 2005) with only 25 funds with an AUM of just US$297.3 million. While there is now a range of Shariah-compliant mutual funds based in Indonesia, these are generally much younger and much smaller than the typical fund in either Malaysia or Saudi Arabia, partly because of an almost exclusive focus on local investors. Currently, about 12 FMCs in Indonesia provides IMFs, most of which are financial institutions already active in other types of Islamic products (GIFR, 2012).

According to the regulator of fund management companies in Indonesia, Financial Services Authority of Indonesia, as at the end of 2019, the total size of the asset management industry stood at US$38.98 billion, up 11.01 percent from US$30.34 trillion at the end of 2017. In addition, the number of mutual funds increase to 651 as at the end of 2019 compared with 608 as at the end of 2017. Accordingly, Indonesia had 86 FMCs as at the end of 2019, compared to 77 FMCs as at the end of 2017. At the end of August 2019, 10.51 percent of the mutual fund industry comprised IMFs, up from 10.24 percent in December 2017. The 210 Islamic mutual funds – 28 of which were launched in 2018 – reflect a net asset value of US$2.05 billion, 6.31 percent of the overall market.

## 3.0 EXISTING STUDIES ON FUND PERFORMANCE

As discussed, many existing studies consider aspects of fund performance at the individual fund level (for examples, Brown & Goetzmann, 1995; Grinblatt, Titman, & Wermers, 1995; Elton, Gruber, & Blake, 1996; Gruber, 1996; Wermers, 2000). However, these often fail to reveal information on the performance of the FMC to which an individual fund belongs. This is important for investors investing in funds within the same FMC, even if just for practical convenience. For these investors, information on how a given FMC as a whole has performed relative to other FMCs is crucial (Premachandra et al., 2012) and can help them make less costly decisions in selecting individual funds (Elton et al., 2007; Brown & Wu, 2012; McCourt & Ramos, 2019). In addition, FMCs typically provide more convenient and lower cost investment switching between funds in the same FMC (Massa, 2003).

Recently, studies at the FMC level have begun to attract attention. These include work by Khorana and Servaes (1999) of the decision by FMCs to open new funds, and analyses by Nanda et al. (2004) and Ivković (2002) of performance spillovers across funds within a FMC. Elsewhere, Massa (2003) examined the relation between the performance of a FMC and the differentiation of the objectives through which the FMC operates, while Gaspar, Massa, and Matos (2006) document that FMCs strategically transfer superior performance to their more valuable funds by demonstrating favoritism in IPO allocations. From an investor perspective, Elton et al. (2007) conclude that mutual fund returns within a FMC tend to be highly correlated, which tends to limit the benefits of portfolio diversification for investors with exposure to only a single FMC. Other studies into fund performance at the FMC level are Kapur and Timmerman (2005), Tower and Zheng (2008), Elton et al. (2007), Premachandra et al. (2012) and McCourt and Ramos (2019).

One particularly interesting line of inquiry into FMCs concerns the argument that certain FMC attributes exert a positive and statistically important effect on the performance of their member funds (Agnesens, 2013; Ferreira, Keswani, Miguel, & Ramos, 2012; Massa & Patgiri, 2009; Bani Atta & Marzuki, 2019b). One part is that (large) FMCs have a potential advantage in terms of economies of scale (Tower & Zheng, 2008) in the form of commissions and lending charges (Chen et al., 2004). On selectivity and market timing ability, Bani Atta and Marzuki (2020) investigate the selectivity and timing ability of FMCs in Malaysia from 2007 to 2018 and find that while FMCs as a whole exhibit good selection skills, but also poor market timing ability, these can differ for the individual funds within those FMCs.

According to Elton et al. (2007), many investors prefer to buy mutual funds that belong to a single FMC either for convenience or because of constraints imposed on their investment

plans. They also find greater correlation in fund returns within than between FMCs. As a result, restricting investment to the one FMC contributes to a greater overall portfolio risk than diversifying across FMCs. One reason could be that the funds in some FMCs tend to have similar exposures to particular sectors or industries, while some FMCs purposively concentrate on high- or low-risk strategies, leading to greater risk dispersion across constrained investors. A suggestion is that investors demand quite a large return premium to encourage them to add an additional fund to their investment portfolio, either from the same FMC and more so outside the FMC.

Lastly, McCourt and Ramos (2019) investigate whether the fund performance of some FMCs is persistently superior or inferior to that of other FMCs. Using gross returns, they find that top-decile FMC performance persistence is comparable to that of individual funds, indicating that FMCs do not tend to create the conditions for maintaining over performance. After controlling for noise in the measure of performance, they find that only three percent of FMCs are genuinely skilled in that all funds within that FMC will benefit. Further, multiple FMCs are more likely to be less skilled than single FMCs.

While the above studies are in developed countries, only few studies are found in the developing countries. In Malaysia for example, Tenk (2012) investigates the impact on portfolio risk between diversifying investment in mutual funds belong to the same FMCs and across different FMCs. She finds that the correlation of the return of funds for within funds in the same FMCs is greater than that for funds across FMCs. This implies that investing in funds within the same FMCs has an impact on increasing the risk level for the mutual fund investors compared to investing in funds managed by different FMCs because the funds belongs to the same FMCs shares the same investing strategy and information.

As also discussed, there has been some limited analysis of the role and performance of SRI FMCs, mostly concentrating on cross subsidisation and spillover effects (Adrianto et al., 2018, 2019). However, we are aware of no comparable analysis that considers FMCs that focus on managing IMFs. This is an important deficiency in that the existing literature demonstrates that a better understanding of the determinants of FMC performance encourages competition among the FMCs and improves performance. Motivated by past studies, particularly Tower and Zheng (2008), we undertake a performance of FMC as well as performance comparison between IFFMCs and CFFMCs and evaluate the role of their attributes in explaining this performance.

## 4.0 RESEARCH DESIGN

### 4.1 Data and Variables

The main source of our mutual fund data is Bloomberg. Following Tower and Zheng (2008), we excluded sector, international, global, balanced and bond funds and focused only on equity funds (those investing at least 60% of its portfolio in equity). The full sample comprised 70 FMCs, of which 25, 20, 14 and 11 FMCs are in Saudi Arabia, Malaysia, Indonesia and Pakistan, respectively, covering some 503 individual funds. We then divided the FMCs into Islamic funds focused management companies (IFFMCs) and conventional funds focused management companies (CFFMCs) using the one-third maximum for impermissible activities benchmark, the same screening technique used by the Financial Times Stock Exchange (FTSE) and Morgan Stanley Capital International (MSCI) in constructing their Islamic equity indices. Thus, in this study, IFFMC and CFFMC were FMC with more than 67% Islamic equity and conventional equity funds, respectively.

The study period is between January 2007 and December 2018. We specified the FTSE All-World index as the return benchmark (Wilson & Jones, 2002) and the 3-month T-bill rate as the risk-free rate. Following Nanda et al. (2004) and Adrianto et al. (2019), we specified overall returns of the funds in the FMC as the measure of FMC performance, being the value-weighted average of the change in the total net asset value of all funds in each FMC. Specifically, we first calculated the monthly returns of each individual fund in the in the FMC by using the following formula:

$$R_{i,t} = \frac{NAV_{i,t} - NAV_{i,t-1}}{NAV_{i,t-1}} \quad (1)$$

where, $R_{i,t}$is the return of fund *i* for period *t* and $NAV_{i,t}$ and $NAV_{i,t-1}$ are the net asset values of fund *i* in period *t* and period *t-1*, respectively. Next, we calculate the value weighted average monthly returns of each FMC as follows:

$$FR_{i,t} = \sum_{i=1}^{n} W_{i,t} * R_{i,t} \quad (2)$$

where $FR_{it}$ is the returns of FMC *i* for period *t*; $W_{it}$ the weight of fund *i* for the period *t* calculated by the TNA of fund *i* divided by the total TNA of funds in the FMC; and *n* is the number of funds in the FMC. $R_{i,t}$ is the fund *i* return. The Carhart risk-adjusted monthly returns for the FMC, $RAR_{i,t}$ is then calculated as follows:

$$FR_{i,t} - R_{f,t} = \alpha_i + \beta_i(R_{m,t} - R_{f,t}) + \beta_s SMB_t + \beta_v HML_t + \beta_M MOM_t + \varepsilon_{i,t} \quad (3)$$

Where $FR_{i,t}$ is the returns of FMC, $R_{f,t}$ is the risk-free rate, $R_{m,t}$ is the market benchmark return, $SMB_t$ is the difference in return between a small-cap portfolio and a large-cap portfolio at period t, $HML_t$ is the difference in return between a portfolio of high-book-to-market stock and a low-book-to market stock at period t, and $MOM_t$ the difference in is return between high and low momentum (lagged one year return). The factors for the four-factor model were not easily available. Thus, this study used the data available on the Fama and French website and employs the FSTE All-World database to construct the four-factor model (Hammami & Oueslati, 2017). The market return of a benchmark is simply:

$$R_{m,t} = \frac{price_{i,t} - price_{i,t-1}}{price_{i,t-1}} \quad (4)$$

where, $R_{m,t}$ is the market return of index *i* at period *t*, $price_{i,t}$ is the price of index *i* in period *t* and $price_{i,t-1}$ is the price of index *i* in period *t–1*.

### *4.1.1 Star and Dog*

Star FMC is a dummy variable equals one if an FMC has at least one star fund and zero otherwise. Dog FMC is a dummy variable equals one if an FMC has at least one poor fund and zero otherwise. It is expected that the star fund provides a good signal about the management team of FMC and help the management team to improve the overall FMC performance. At the same time, poor funds are expected to provide bad signals about the management team. Hunter, Sun, and Benson (2020) indicate that star fund offerings earn significantly higher abnormal returns and improve FMC returns significantly. FMC managers have a strong incentive to obtain star funds and deploy their manageable resources to maintain their star funds' status.

### *4.1.2 Past Performance*

Past performance refers to the historical performance of an FMC. Greve (2003) viewed past performance as an indicator of how well a company can and should perform. The variable relates to the intrinsic ability of an organisation and provides a criterion for organisations adapting to the external environment (Kraatz & Zajac, 2001). Moreover, past performance offers insight into past managerial and operational activities and is a foundation for planning future strategy (Stephen, Mehra, Brass, & Labianca, 2009). It thus has a strong attachment with

sustainable growth and decision-making processes. Good past performance tends to make organisations and managers more conservative in their tactical approaches and risk-taking behaviors, which may lead to stable, sustainable growth in organisational performance (Tower & Zheng, 2008).

### *4.1.3 FMC Age*

FMC age is a proxy of an FMCs' ability to survive amidst intense competition. Agnesens (2013) argue that young funds are less competitive due to their minimum experience and substantial marketing costs. Gaspar et al. (2006) found a positive relationship between mature FMCs and performance and a negative relationship between young FMCs and performance. In the study, they conclude that an FMC with an established track record can grow young funds rather quickly and push the overall performance of the FMC. While in relatively young FMCs, FMC will favour older funds in the family, presumably in an attempt to create flagship funds. Hunter et al. (2020) found a negative relation between FMC age and performance, but it was insignificant.

### *4.1.4 Size of FMC*

FMC size refers to the total of asset under management (AUM) by a particular FMC. Large FMCs can offer more investment opportunities to investors at lower prices, and their managers are also equipped with good selectivity and timing skills (Bhojraj, Jun Cho, & Yehuda, 2011). FMC size and performance should thus have a positive relationship. Even so, a large FMC may also perform poorly because its managers cannot optimally manage it (Göricke, 2016). Funds with larger FMCs will pay special attention to trade commissions and benefit from higher lending charges, larger FMCs can use the same economic data and experts to interpret data across many funds, leading to economies of scale and higher returns (Malhotra & McLeod, 1997; Chen et al., 2004; Tower & Zheng, 2008; Ferreira et al., 2012; Cici, Dahm, & Kempf, 2018). Even so, a large FMC may also perform poorly because its managers are unable to optimally manage it (Berk & Green, 2004; Göricke, 2016; Filip & Pochea, 2015).

### *4.1.5 Number of Funds in FMC*

It refers to the number of funds managed by an FMC. An FMC with many funds may offer more investment opportunities at reduced costs. Guedj and Papastaikoudi (2004) found that the number of constituent funds (which they used as a measure of latitude that an FMC has to allocate resources among its funds unevenly) relates positively to performance persistence.

This variable thus could be positively linked to FMC performance. Hunter et al. (2020) and Gaspar et al. (2006) find a positive relationship between the number of funds and fund performance.

### 4.2 Model

Our model considers the impact of FMC attributes on FMC performance using panel regression analysis as follows:

$$RAR_{i,t} = \alpha_f + \beta_1 FFA_{i,t} + \beta_2 NOF_{i,t} + \beta_3 FFS_{i,t} + \beta_4 FOF_{i.t-1} + \beta_5 Star_{i,t} + \beta_6 Dog_{i,t} + \beta_7 RAR_{i,t-1} + \varepsilon_t \quad (5)$$

where $RAR_{i,t}$ is the Carhart risk-adjusted return of FMC $i$ in period $t$, $FFA_{i,t}$ is FMC age measured by the log number of years since the FMC's inception, $NOF_{i,t}$ is the number of funds in the FMC, $FFS_{i,t}$ is the FMC size measured by the total net asset value of all equity funds in FMC $i$, $FOF_{i.t-1}$ is the lagged one-month net flow of FMC $i$, $Star_{i,t}$ is a dummy variable taking a value of one if the FMC includes a 'star' (very highly performing) fund and 0 otherwise, $Dog_{i,t}$ is a dummy variable taking a value of one if the FMC includes a 'dog' (very poorly performing fund) and zero otherwise, $RAR_{i,t-1}$ is the lagged one-month Carhart risk-adjusted return of FMC $i$ in month $t$–1, and $\varepsilon_t$ is the error term.

## 5.0 ANALYSIS AND DISCUSSION

This section discusses how FMC attributes affect FMC performance. The attributes considered include age, size, number of funds within the FMC, past FMC flows and performance and whether the FMC includes star or poor funds. We particularly compare the performance of IFFMCs and CFFMCs and FMC across country.

### 5.1 Descriptive Statistics

As diagnostics, we use a Breusch–Pagan/Cook–Weisberg test for heteroscedasticity (not shown). The results indicate constant variance signifying no heteroscedasticity. Further, given the potential problem of multicollinearity among the several FMC attributes, we conduct a diagnostic check using variance inflation factors (VIFs). As a rule of thumb, a VIF >10 is taken as an indicator of the presence of multicollinearity. However, none of the FMC variables have a value greater than two, suggesting no harmful multicollinearity.

Table 1 provides descriptive statistics of the variables used in the analysis. Overall, all FMCs in Saudi Arabia, Malaysia, Indonesia and Pakistan reports negative average returns over the sample period, for the current (–0.073) as well as the past (–0.032) month, and the average age of the FMCs in all four countries is 18 years. The average FMC across all four countries comprises seven funds with a total net asset value of US$1,850.6 million. On average, all FMCs also experience a month-past money outflow (–0.423). However, there are significant differences in the FMC variables by country. Only Saudi Arabia has positive current and past one-month FMC returns on average (0.1573 and 0.1568 percent, respectively), with Malaysia displaying the smallest negative current month and past one-month FMC returns (–0.1251 and –0.098, respectively) and Pakistan the largest (–0.1931 and –0.164, respectively). Saudi Arabia also has the highest return volatility (0.1579), followed by Indonesia (0.067), Pakistan (0.055) and Malaysia (0.045). The average age of a FMC is 26 years in Malaysia, followed by Indonesia (18 years), Saudi Arabia (14 years) and Pakistan (11 years).

Table 1: Descriptive statistics

| | | All | | | IFFMCs | | | CFFMCs | | | Equality of variance | | Equality of means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | Mean | Std. dev. | N | Mean | Std. dev. | N | Mean | Std. dev. | t-stat. | p-value | t-stat. | p-value |
| Saudi Arabia | No. of funds | 162 | 156.7 | 3.590 | 162 | 156.7 | 3.590 | – | – | – | – | – | – | – |
| | No. of FMCs | 25 | 22.8 | 1.785 | 25 | 22.8 | 1.785 | – | – | – | – | – | – | – |
| | FMC return | 25 | 0.1570 | 0.158 | 25 | 0.157 | 0.158 | – | – | – | – | – | – | – |
| | FMC age | 25 | 13.860 | 2.267 | 25 | 13.86 | 2.267 | – | – | – | – | – | – | – |
| | Fund/FMC | 25 | 6.4800 | 2.777 | 25 | 6.48 | 2.777 | – | – | – | – | – | – | – |
| | FMC size | 25 | 2214.1 | 0.084 | 25 | 2214.1 | 0.084 | – | – | – | – | – | – | – |
| | Past flows | 25 | –0.580 | 0.576 | 25 | –0.580 | 0.576 | – | – | – | – | – | – | – |
| | Past returns | 25 | 0.156 | 0.158 | 25 | 0.156 | 0.158 | – | – | – | – | – | – | – |
| Malaysia | No. of funds | 170 | 165.5 | 3.304 | 88 | 71.7 | 8.562 | 82 | 68.6 | 1.258 | 1.426 | 0.084 | 4.591 | 0.000 |
| | No. of FMCs | 20 | 17.9 | 1.552 | 11 | 8.7 | 1.132 | 9 | 6.5 | 1.865 | 1.453 | 0.080 | 2.933 | 0.000 |
| | FMC return | 20 | –0.125 | 0.045 | 11 | –0.016 | 0.044 | 9 | –0.044 | 0.048 | 0.112 | 0.456 | 1.893 | 0.031 |
| | FMC age | 20 | 26.4 | 1.408 | 11 | 26.83 | 1.792 | 9 | 25.1 | 1.153 | 2.215 | 0.014 | 1.508 | 0.067 |
| | Fund/fam | 20 | 8.5 | 2.682 | 11 | 8.866 | 2.372 | 9 | 7.4 | 2.437 | –1.238 | 0.134 | –2.926 | 0.002 |
| | FMC size | 18 | 2267.2 | 582.7 | 10 | 1806.9 | 548.5 | 9 | 971.1 | 151.1 | 11.27 | 0.000 | 11.38 | 0.000 |
| | Past flows | 18 | –0.098 | 0.466 | 10 | –0.069 | 0.475 | 8 | –0.162 | 0.437 | 2.252 | 0.013 | 1.969 | 0.026 |
| | Past returns | 20 | –0.125 | 0.045 | 10 | –0.125 | 0.044 | 9 | –0.124 | 0.048 | 0.360 | 0.359 | 2.029 | 0.022 |
| Indonesia | No. of funds | 83 | 79.3 | 2.718 | 50 | 44.6 | 6.006 | 33 | 27.5 | 3.175 | 5.339 | 0.000 | 5.668 | 0.000 |
| | No. of FMCs | 14 | 12.3 | 1.374 | 8 | 6.7 | 1.179 | 6 | 4.5 | 1.118 | 4.424 | 0.000 | 4.282 | 0.000 |
| | FMC return | 14 | –0.133 | 0.067 | 8 | –0.106 | 0.072 | 6 | –0.147 | 0.054 | 3.854 | 0.000 | 3.777 | 0.000 |
| | FMC age | 14 | 17.78 | 2.12 | 8 | 18.94 | 2.995 | 6 | 15.7 | 2.746 | 2.026 | 0.022 | 3.780 | 0.000 |
| | Fund/fam | 14 | 5.929 | 1.036 | 8 | 6 | 1.253 | 6 | 5.80 | 0.403 | 1.032 | 0.152 | 1.884 | 0.032 |
| | FMC size | 12 | 1530.3 | 218.4 | 7 | 1129.1 | 144.7 | 6 | 931.9 | 143.1 | 9.314 | 0.000 | 7.19 | 0.000 |
| | Past flows | 14 | –0.658 | 1.266 | 8 | –0.359 | 1.117 | 6 | –1.191 | 1.353 | 3.675 | 0.000 | 3.620 | 0.000 |
| | Past returns | 14 | –0.132 | 0.066 | 8 | –0.125 | 0.071 | 6 | –0.145 | 0.055 | 3.863 | 0.000 | 3.742 | 0.000 |
| Pakistan | No. of funds | 87 | 82.8 | 2.420 | 44 | 38.5 | 2.958 | 43 | 38.8 | 3.467 | –0.182 | 0.429 | –0.561 | 0.293 |
| | No. of FMCs | 11 | 9.8 | 1.143 | 6 | 4.6 | 1.187 | 5 | 3.3 | 1.312 | 2.343 | 0.014 | 3.745 | 0.000 |
| | FMC return | 11 | –0.193 | 0.055 | 6 | –0.155 | 0.047 | 5 | –0.163 | 0.061 | 1.899 | 0.030 | 1.917 | 0.030 |
| | FMC age | 11 | 10.77 | 3.328 | 6 | 9.33 | 2.428 | 5 | 12.50 | 3.922 | –2.945 | 0.002 | –4.654 | 0.000 |
| | Fund/fam | 10 | 7.909 | 3.269 | 6 | 7.50 | 4.750 | 5 | 8.40 | 3.585 | –1.208 | 0.115 | –0.591 | 0.278 |
| | FMC size | 10 | 1780.8 | 554.2 | 6 | 1119.6 | 536.7 | 5 | 1514 | 555 | 7.621 | 0.000 | 8.429 | 0.000 |
| | Past flows | 11 | –0.095 | 0.849 | 6 | –0.019 | 1.046 | 5 | –0.177 | 0.522 | 1.064 | 0.145 | 1.225 | 0.113 |
| | Past returns | 11 | –0.164 | 0.055 | 6 | –0.157 | 0.047 | 5 | –0.176 | 0.062 | 1.497 | 0.068 | 1.449 | 0.076 |
| All | No. of funds | 502 | 484.3 | 7.819 | 344 | 311.4 | 9.168 | 158 | 131.2 | 8.147 | 7.868 | 0.000 | 9.970 | 0.000 |
| | No. of FMCs | 70 | 62.8 | 5.742 | 50 | 42.6 | 4.481 | 20 | 15.2 | 3.955 | 5.215 | 0.000 | 8.577 | 0.000 |
| | FMC return | 70 | –0.073 | 1.235 | 50 | –0.003 | 0.184 | 20 | –0.147 | 0.057 | 1.096 | 0.000 | 2.340 | 0.000 |

| | All | | | IFFMCs | | | CFFMCs | | | Equality of variance | | Equality of means | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | Std. dev. | N | Mean | Std. dev. | N | Mean | Std. dev. | t-stat. | p-value | t-stat. | p-value |
| FMC age | 70 | 17.74 | 1.421 | 50 | 17.73 | 1.421 | 20 | 17.76 | 2.455 | –2.262 | 0.012 | –1.974 | 0.000 |
| Fund/fam | 68 | 7.183 | 2.453 | 49 | 7.164 | 2.296 | 20 | 7.200 | 2.721 | –3.585 | 0.000 | –3.123 | 0.000 |
| FMC size | 68 | 1850.6 | 430.5 | 50 | 1522.5 | 446.2 | 19 | 1270 | 419.5 | 32.42 | 0.000 | 43.83 | 0.000 |
| Past flows | 70 | –0.423 | 0.875 | 50 | –0.344 | 0.768 | 19 | –0.509 | 0.995 | 1.266 | 0.103 | –1.974 | 0.025 |
| Past returns | 70 | –0.032 | 0.051 | 49 | | 0.184 | 20 | –0.147 | 0.058 | 3.051 | 0.000 | 2.697 | 0.000 |

*Notes: Standard errors in brackets. Asterisks denote significance at the * – .10, ** – .05 and *** – .01 level. 'All' includes Saudi Arabia, Malaysia, Indonesia and Pakistan for IFFMCs and Malaysia, Indonesia and Pakistan for CFFMCs as none resident in Saudi Arabia.*

Malaysia along with Pakistan also has the largest average number of funds in FMCs with eight funds followed by Saudi Arabia and Indonesia, both with six funds, while Malaysia also has the largest average funds (US$2267 million), followed by Saudi Arabia (US$2214 million), Pakistan (US$1,781 million) and Indonesia (US$1,530 million). Surprisingly given the relatively poor return performance of its FMCs, Pakistan has the lowest average past one month money outflow (–0.095), followed by Malaysia (–0.098), Saudi Arabia (–0.580) and Indonesia (–0.658).

We now compare the characteristics of IFFMCs and CFFMCs by overall and by country, with the exception of Saudi Arabia which only has IFFMCs. In terms of returns, IFFMC in Saudi Arabia display the highest monthly return performance (0.157), followed by Malaysia (–0.016), Indonesia (–0.106) and Pakistan (–0.155). In terms of age, Malaysia has the oldest IFFMCs (27 years), followed by Indonesia (19 years), Saudi Arabia (14 years) and Pakistan (9 years). Malaysia also has the highest average number of funds in its IFFMCs (9 funds) followed by Pakistan (8 funds), Saudi Arabia (6 funds) and Indonesia (6 funds), while Saudi Arabia leads with net average asset value ($2,214 million) followed by Malaysia ($1,807 million), Indonesia ($1,129 million) and Pakistan ($1,120 million). On average, past one-month flows are ranked Pakistan (–0.019), Malaysia (–0.069), Indonesia (–0.359) and Saudi Arabia (–0.580).

Compared with the CFFMCs overall, the IFFMCs generally display higher current (–0.003 vs. –0.147) and past one-month returns (–0.005 vs. 0.147), and this also holds by country. Generally, the IFFMCs are also slightly younger than the CFFMCs (17.73 vs. 17.76 years), except in Malaysia and Indonesia where the IFFMCs are older than the CFFMCs. The most striking comparison is that IFFMCs are much larger in both net asset value and number of

funds per FMC than CFFMCs overall and by country, with the exception of the number of funds in Pakistan, and this points to the benefits of possible economies of scale and scope in funds management.

## 5.2 Correlation

Table 2 presents Spearman rank and Pearson product-moment correlations for the FMC performance and attribute variables. According to both correlation tests, FMC performance is significantly correlated with all independent variables except past flows. More particularly, FMC performance is better for older and larger (by net asset value) FMCs and for funds with star funds, and poorer for larger (by number of funds) FMCs, those with higher past flows, and with dog funds. There is also a strong positive correlation between current and past FMC performance, suggesting persistence. Lastly, dog funds and FMC size are significantly correlated with the number of funds in a FMC.

Table 2: Variable correlations

| Variables | FMC returns | FMC age | No. of funds | FMC size | Past flows | Star | Dog | Past returns |
|---|---|---|---|---|---|---|---|---|
| FMC returns | 1.000 | 0.301* | –0.104 | 0.166** | –0.198 | 0.430* | –0271* | 0.811* |
| FMC age | 0.118* | 1.000 | 0.014 | –0.102 | 0.138 | 0.114 | 0.063 | 0.273** |
| No. of funds | –0.135 | 0.187 | 1.000 | 0.037** | 0.034 | 0.130** | 0.028* | –0.134 |
| FMC size | 0.086 | –0.203 | 0.345* | 1.000 | –0.017 | –0.089 | –0.011 | 0.209* |
| Past flows | –0.179 | 0.089 | 0.090 | –0.007 | 1.000 | –0.127 | 0.039 | –0.021 |
| Star | 0.187* | 0.060 | 0.190* | –0.056 | –0.031 | 1.000 | –0.022 | 0.401* |
| Dog | –0.184* | 0.075 | 0.192* | –0.039 | 0.033 | –0.010 | 1.000 | –0.171* |
| Past returns | 0.927* | –0.124* | –0.142* | 0.073* | –0.181 | 0.029* | –0.149* | 1.000 |

## 5.3 Empirical Results

### *5.3.1 Overall and by Country*

Table 3 presents the estimated coefficients of the impact of FMC attributes on FMC performance for all countries and by country. The overall results show that all attributes except for past FMC flows have significant relationship with the dependent variable (Carhart four-factor risk adjusted returns). FMC age, size, star funds and past returns display a positive relationship with returns, while the number of funds and dog funds have a negative relationship with FMC returns. Analysis by country shows that FMC age is significantly positive in influencing FMC returns for all countries except Saudi Arabia. For Malaysia and Indonesia,

for every 1 percent increase in FMC age, FMC returns increase by 0.04 percent (4.8 percent annually). Interestingly, the same increase in FMC age will result in a 0.16 percent increase in FMC returns in Pakistan (192 percent annually). This suggests that older FMCs in Malaysia, Indonesia and Pakistan perform better than younger FMCs.

However, there is no similar difference between younger and older FMCs in Saudi Arabia. The possible reasons are the FMCs in Saudi Arabia are relatively younger than FMCs in other countries. The age difference is not much among them, resulting in insignificant factors in influencing the performance of FMCs in Saudi Arabia. This result is consistent with the evidence in Chen et al. (2004) and Ferreira et al. (2012) where they report no relation between age and performance of mutual funds in US. The reported positive relation between age and performance in other countries is similar to the evidence provided by Cici et al. (2018) in US, and Ahmad, Sun, and Khidmat (2017) and Fikri and Yahya (2019) in emerging countries. We suggest older FMCs are able to recruit and maintain managers with greater experience to improve the FMC performance, while younger FMCs spend much of their time marketing the FMC and creating new funds to attract investors, which may be reflected in their overall performance.

Both the number of funds and the total net asset value of a FMC indicate the size (or scale) of a FMC. There are mixed results concerning the relationship between FMC size and FMC returns. The relationship between the number of funds in the FMC and the FMC returns is significantly positive for Saudi Arabia, but significantly negative for the remaining countries. For example, every 1 percent increase in the number of funds in a FMC increases returns by 0.05 percent in Saudi Arabia. However, FMCs in other countries do not behave similarly. In fact, every 1 percent increase in the number of funds in a FMC reduces FMC returns by 0.07, 0.83 and 0.09 percent in Malaysia, Indonesia and Pakistan, respectively. Evidence reported by Chen, Hong, Jiang, and Kubik (2013) and Guedj and Papastaikoudi (2004) supports results in Saudi Arabia but contradicts results in other countries in the sample. This suggests that the managers of FMCs in Saudi Arabia are better able to manage their large FMCs and at the same time provide better returns for the FMC. This immediately suggests the benefits of scale and scope in operating these funds (focusing only IMFs), with more funds having better investment opportunities and greater diversification and the increased likelihood of star funds. Even though the average size of the FMCs in Malaysia is rather large, these FMCs manage both IMFs and CMFs (multi funds and multi focus). When they are divided into their focus (IFFMCs versus CFFMCs), the size of these FMCs are far smaller where they have yet to enjoy the economies

of scale. Negative results in Indonesia and Pakistan because the size of the FMCs is relatively smaller, which is costly to manage.

When we measure FMC size using total net asset value a similar relationship holds. Here, FMC size is significantly positive in its effect on returns for Saudi Arabia and Pakistan, but insignificant for Malaysia and Indonesia. Every 1 percent increase in total net asset value results in a 0.81 and 12.50 percent increase in FMC returns in Saudi Arabia and Pakistan, respectively. This suggests that the managers of larger FMCs (both in number of funds and total net asset value) perform better, at least in Saudi Arabia. This is supported by the evidence by Chen et al. (2013) and Bessler, Kryzanowski, Kurmann, and Luckoff (2014) where they find that the performance is positively related to both number of funds in the FMCs as well as number of assets under management. However, the scenario is somewhat different in Pakistan where FMC returns benefit from total net asset value but not the number of funds. The increased number of funds negatively impact the performance of FMCs in Pakistan, perhaps because of the small size of capital market in Pakistan which force these funds to invest in small and illiquid stocks (Chen et al., 2004). We conjecture that the insignificant results for Malaysia and Indonesia may arise from a managerial strategy of limiting the growth of FMC size, by issuing new funds, and allowing dogs to fade away. The insignificant results for Malaysia and Indonesia may be due to the fund managers' strategy. They prefer to limit the growth of the FMC size as growth beyond a certain limit would impede decision-making. Therefore, FMCs are using the strategy of issuing new funds named after their successful precursor, letting the poor-performing funds fade away.

There is also strong evidence of a positive relationship between past and current FMC return across and in all countries. An increase of 1 percent in the previous month's return results in a 67, 64, 58 and 54 percent increase in current month returns for FMCs in Saudi Arabia, Malaysia, Indonesia and Pakistan, respectively. This usefully suggests for investors that past returns are able to signal the performance of FMC management and that return performance is persistent, at least over a month. Similarly, the significant positive (negative) relationship between star (dog) funds and FMC returns shows that FMCs including these funds benefit more widely across the other funds in the FMC. Given their repute, star funds may reduce marketing costs and signal the good timing and selectively of the management team in a FMC, whereas dogs may work in the opposite direction. As these reputational effects are also likely to persist over time, FMCs would be well-served by having at least one star fund, and where they cannot improve the performance of any dog funds, removing them from sight.

Table 3: Regression estimates

| | Variables | All | | IFFMC | | CFFMC | |
|---|---|---|---|---|---|---|---|
| Saudi Arabia | Constant | 0.031 | (0.437) | 0.031 | (0.437) | – | |
| | FMC age | 0.009 | (0.121) | 0.009 | (0.121) | – | |
| | Number of funds | 0.005* | (0.020) | 0.005* | (0.020) | – | |
| | FMC size | 0.008** | (0.022) | 0.008** | (0.022) | – | |
| | Past flows | –0.007 | (0.564) | –0.007 | (0.564) | – | |
| | Star | 0.072** | (0.001) | 0.072** | (0.001) | – | |
| | Dog | –0.037** | (0.004) | –0.037** | (0.004) | – | |
| | Past returns | 0.678*** | (0.001) | 0.678*** | (0.001) | – | |
| | Prob > F | <0.001 | | <0.001 | | – | |
| | Adjusted. $R^2$ | 0.66 | | 0.66 | | – | |
| Malavsia | Constant | –0.048 | (0.005) | –0.054 | (0.011) | –0.096 | (0.020) |
| | FMC age | 0.004** | (0.003) | 0.003** | (0.015) | 0.006* | (0.068) |
| | Number of funds | –0.007* | (0.047) | –0.006 | (0.896) | 0.005* | (0.036) |
| | FMC size | –0.017 | (0.648) | –0.009 | (0.842) | –0.059 | (0.512) |
| | Past flows | 0.001 | (0.673) | 0.003 | (0.954) | 0.005 | (0.923) |
| | Star | 0.019** | (0.001) | 0.003** | (0.000) | 0.005** | (0.020) |
| | Dog | –0.018** | (0.001) | 0.003 | (0.610) | –0.020** | (0.003) |
| | Past returns | 0.643*** | (0.001) | 0.038*** | (0.000) | 0.508*** | (0.000) |
| | Prob > F | <0.001 | | <0.001 | | <0.001 | |
| | Adjusted. $R^2$ | 0.76 | | 0.73 | | 0.83 | |
| Indonesia | Constant | –0.004 | (0.019) | 0.014 | (0.774) | –0.096 | (0.040) |
| | FMC age | 0.004** | (0.043) | 0.005 | (0.275) | 0.006* | (0.088) |
| | Number of funds | –0.008* | (0.017) | –0.010* | (0.012) | 0.006* | (0.026) |
| | FMC size | –0.031 | (0.638) | –0.046 | (0.588) | –0.052 | (0.712) |
| | Past flows | –0.006 | (0.809) | –0.002 | (0.630) | 0.005 | (0.623) |
| | Star | 0.034** | (0.001) | 0.035** | (0.001) | 0.005** | (0.010) |
| | Dog | –0.024** | (0.001) | –0.015 | (0.112) | –0.020** | (0.013) |
| | Past returns | 0.579** | (0.001) | 0.579** | (0.001) | 0.508** | (0.001) |
| | Prob > F | <0.001 | | <0.001 | | <0.001 | |
| | Adjusted. $R^2$ | 0.67 | | 0.73 | | 0.67 | |
| Pakistan | Constant | –0.151 | (0.001) | –0.008 | (0.984) | –0.285 | (0.001) |
| | FMC age | 0.001* | (0.003) | 0.007* | (0.001) | 0.001 | (0.105) |
| | Number of funds | –0.009* | (0.025) | –0.006*** | (0.001) | –0.003* | (0.060) |
| | FMC size | 0.125** | (0.029) | –0.232** | (0.006) | 0.479*** | (0.001) |
| | Past flows | 0.003 | (0.441) | 0.003 | (0.315) | 0.009 | (0.276) |
| | Star | 0.019** | (0.002) | 0.025** | (0.001) | 0.006** | (0.031) |
| | Dog | –0.038** | (0.001) | –0.057** | (0.001) | –0.026** | (0.011) |

| | Variables | All | | IFFMC | | CFFMC | |
|---|---|---|---|---|---|---|---|
| | Past returns | 0.543*** | (0.000) | 0.279*** | (0.001) | 0.745*** | (0.001) |
| | Prob > F | <0.001 | | <0.001 | | <0.001 | |
| | Adjusted. $R^2$ | 0.64 | | 0.67 | | 0.74 | |
| All | Constant | -0.032 | (0.062) | -0.0251 | (0.220) | -0.0837 | (0.501) |
| | FMC age | 0.006** | (0.049) | –0.001 | (0.695) | 0.001** | (0.001) |
| | Number of funds | –0.007* | (0.032) | 0.001* | (0.027) | 0.001 | (0.380) |
| | FMC size | 0.061* | (0.061) | 0.055* | (0.061) | –0.002 | (0.957) |
| | Past flows | –0.002 | (0.402) | –0.004 | (0.231) | –0.003 | (0.204) |
| | Star | 0.019** | (0.001) | 0.023** | (0.001) | 0.020** | (0.002) |
| | Dog | –0.016** | (0.001) | –0.017 | (0.098) | –0.026** | (0.001) |
| | Past returns | 0.906*** | (0.001) | 0.894*** | (0.001) | 0.601*** | (0.001) |
| | Prob > F | <0.001 | | <0.001 | | <0.001 | |
| | Adjusted. $R^2$ | 0.86 | | 0.85 | | 0.70 | |

### *5.3.2 IFFMCs vs. CFFMCs*

This section discusses the differences between the performance attributes of IFFMCs and CFFMCs. As Saudi Arabia includes no resident CFFMCs as defined, we discuss the results only for the other three countries in our sample. For Malaysia, age appears an important attribute determining the performance of both IFFMCs and CFFMCs. Every 1% increase in age will increase returns by 0.3% for IFFMCs, but more than double that for CFFMC. For Indonesia, FMC age is only an important return attribute for CFFMCs, increasing returns by 0.6%. In contrast, age is important in Pakistan, but only for IFFMCs. For Malaysia and Pakistan, the findings contradict with fund level studies by Fikri and Yahya (2019) and Ahmad et al. (2017). Fikri and Yahya (2019) find that age is insignificant determinant for both IMF and CMF performance in Malaysia, while Ahmad et al. (2017) find that age is an important determinant for both IMF and CMF in Pakistan.

Earlier, we found the strong negative impact of the number of funds on FMC performance in Malaysia, Indonesia and Pakistan, but not Saudi Arabia where it was positive. This analysis shows that this in fact only positively affects the returns of CFFMCs except for Pakistan. In fact, increasing the number of funds in Indonesia and Pakistan will worsen the performance of its IFFMCs. This is consistent with the work of Ahmad et al. (2017) who find that the number of funds in the FMC negatively influence the performance of both Islamic and conventional funds in Pakistan. This could be explained by the small size of equity market in Pakistan. The alternative measure of FMC scale in the form of total net asset value displays a

significant positive relationship with the performance of a FMC in Pakistan, but not Malaysia and Indonesia, where it actually worsens returns. A 1% increase in the total net asset value, will reduce IFFMCs by 0.046% and 0.232% in Indonesia and Pakistan, respectively, but increase returns for CFFMCs in Pakistan by 0.479%. The insignificance influence of size of FMCs by total net asset for both Malaysia and Indonesia is similar with many studies in the developed countries such as Keswani and Stolin (2012) but contradict with Makni, Benouda, and Delhoumi (2016) who find positive relationship, supporting the results for Pakistan.

As before, generally having one or more star funds benefits both IFFMCs and CFFMCs, but this does not appear the case for one or more dog funds. Surprisingly, the presence of dogs have no effect on returns for IFFMCs in Malaysia and Indonesia, suggesting a greater degree of tolerance for poor performance, at least for poorly-performing funds in the same FMC. And again, past returns consistently exert a positive influence on the returns of both IFFMCs and CFFMCs in all countries, again implying performance persistence, at least over a very short period. Finally, our admittedly simple model of FMC attributes does quite a good job of explaining FMC returns, with the values of adjusted $R^2$ ranging between 0.64 and 0.86, suggesting good and useful information for investors. Overall, the results support our hypothesis that there are differences between factors affecting performance between IFFMCs and CFFMCs. The differences are because IFFMCs are mainly, managing IMFs which have different investment objectives. While CMFs mainly aim to maximise financial objectives, IMFs aims to achieve both financial and social objectives which require different investment approach and strategy.

## 6.0 CONCLUSION

This study provides new evidence about the performance of FMCs in four countries (Malaysia, Saudi Arabia, Indonesia and Pakistan) and the factors that contribute to the performance of these FMCs. In addition, we also contribute by providing evidence on whether IFFMCs outperform CFFMCs. This is especially important as our selected four countries account for the largest share of Islamic funds, by both AUM and number, in the world, and therefore are the preferred investment locations for both Muslim and non-Muslim investors seeking Shariah-compliant mutual funds. This should provide useful information to help these investors make informed decisions and enables the administrators of these FMCs to judge how well their portfolio managers have performed relative to their competitors (Premachandra et al., 2012).

The results show that overall all attributes specified significantly influence the performance of FMC returns except for past flows. Most interestingly, while FMC size (as

specified by both number of funds and total assets under management in the FMC) positively affect FMC returns in Saudi Arabia, this appears not the case in Pakistan, Malaysia and Indonesia. In Pakistan, FMC managers appear able to add value to the FMC returns with more assets under management, whereas as in Malaysia and Indonesia, similar to Pakistan, an increasing number of funds in a FMC negatively (and somewhat paradoxically) harm FMC performance. One potential reason could be due to the fact that FMC with larger number of funds mimics the existing funds especially when they are operating in a small equity market. (Tenk, 2012). We conjecture the key may lie in the nature of the economies of scale in funds management, and that while these countries may be achieving scale in terms of say, assets, this may be offset by an excessively large number of funds. However, the funds management industry in Saudi Arabia appears to be balancing both concerns, in at least so far as the possible benefit to investors of higher returns.

We also extended the investigation to see if the are differences in attributes influencing performance of IFFMCs and CFFMCs. The findings indicate substantial differences in the attributes determining performance in these FMCs. In particular, the number of funds and assets under management positively influence the returns of IFFMCs but not CFFMCs. In addition, the presence of dog funds in CFFMCs negatively affect their performance, but not so in IFFMCs. All these results will be of benefit to investors in making better investment decisions, especially as most use a top-down approach to FMC then fund selection.

From the results of this study, there are two recommendations worthy of consideration. First, given the generally limited existing evidence concerning performance at the FMC level, it is important to continue to increase attention here for the benefit of many stakeholders, not only investors, but also fund managers. For fund managers, focusing on IMFs provides added advantage to them as having poorly performing funds in the portfolio appear to impact less to the overall performance of FMC. Future studies can be expanded to study the effect of other attributes such as expense ratio and management fees on the FMC performance, subject to data availability. Second, as most existing studies on FMC performance and even fund performance concern only developed markets in the US and UK, it would be worthwhile extending this type of approach to other investor markets in the Middle East and South-East Asia. In fact, the regulation and structure of the mutual fund industry in the developed and non-Islamic countries will likely vary to that found in emerging and Islamic countries, and future work in this area should be careful to consider these factors when comparing between the different types of market.

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