

Takaful industry is governed by Malaysian Takaful Act 1984. The proposed RBC structure for takaful is close to the implementation made for conventional insurance in which takaful operators are expected to maintain a supervisory capital adequacy ratio (CAR) of at least 130%. The minimum CAR levied is designed so that takaful operators can face any shortfall in the takaful fund by providing adequate money in the shareholders' fund. The takaful RBC system tackles insufficiently the danger that applies to the operations of takaful operators. Many studies have investigated the challenges, issues, and growth of takaful operators in Malaysia.

A study by Husin (2019) stated even though fairly new, the takaful market in Malaysia has experienced significant growth. While the Malaysian government is focused on enhancing takaful and making Malaysia a Shariah insurance hub in South-East Asia, some issues were being established that might slow the country's takaful growth prospects. However, it is possible to incorporate many techniques to reduce the distance. To inform the younger generation about the importance of financial security, additional measures can be taken to empower potential clients and support the takaful industry, such as implementing a takaful lesson plan. In addition, the promotion of the takaful market and the development of takaful exposure through smartphone ads, or digital marketing, can help. By raising talent depth by providing competitive compensation, business leaders need to play a larger role in designing and structuring human resources. He also praises the BNM governor's comment in 2018 that some of those serving in takaful which are among the highly qualified workers, receive 15% fewer than in traditional. Therefore, this study fills in the gap by acknowledging that it is important to evaluate the performance so that in getting further, the survival of the takaful industry in Malaysia would entail the implementation of best practices and progressive adjustment to shift in meeting the demands of clients.

In addition, Antonio (2013) indicated that takaful, on the other side, relative to several industries, still seems lagging. Even if the takaful contribution is minimal relative to other Islamic financial business sectors, the takaful market is gaining considerable interest. There may still be a platform for further development in the takaful market, particularly in Muslim majority nations. Therefore, he studied the efficiency of takaful and conventional insurance companies in Malaysia and their variations over a few years. A total of 26 Malaysian insurance operators, of which 7 from takaful and 19 from conventional insurance companies, have been observed from 2009 until 2011. The input parameters such as management and commission expenses along with output parameters of gross premium and investment income have been analysed using Data Envelopment Analysis (DEA) by unbalanced panel data method. This study found that conventional insurance companies outperformed in terms of efficiency compared to takaful operators. Therefore, it is recommended that takaful must put much concern external factor costs.

Remli (2018) stated that takaful had not shown outstanding growth, with a slight increase on a scale from 2008 to 2010. However, since this spike was much significantly greater by 2008 to 2010, it's indeed evident that perhaps the emergence of additional players to the industry added to all of this. This could be inferred, in turn, that rise within the proportion of operators will not have a major effect on the penetration level, and so the competition remains untested to its best capacity. This condition shows that takaful's market success in Malaysia is not encouraging. Then he proved by studying how the firm's characteristics such as income, age, size, and agents affect the demand of family takaful in Malaysia, which involved a total of 25 family takaful operators over the period 2008 to 2016. The study used panel regression analysis of pooled OLS, random-effect, and fixed-effect models with the application of the Hausman test. He found that

two out of four independent variables, size and agent's performance, impacted the demand of family takaful. Thus, it is concluded that the takaful operator's size and having excellent agent performance will boost the sustainability of the takaful industry. Given the above, the objective of analysing financial performance remains an interesting topic to discover.

Moreover, Akhter and Khan (2017) added threats leading to unpredictable circumstances, including the international economic meltdown and industrial progress. Both conventional insurance and takaful add tremendous value in risk hedging and limiting demand for products and growth. Of more than 60% of the Muslim population of 18 million citizens, Malaysia is opening up a big market segment for the takaful industry. Therefore, the unacceptability of conventional insurance within Muslim people driven the takaful providers to be founded to meet their customers' demands. He figured out the factors affecting the insurance and takaful demand across ASEAN and Middle East Regions by using panel data from 2015 until 2014 on 14 Asian countries that run both conventional and takaful insurance. The study also applied regression models such as random and fixed effects to study macroeconomic and demographic factors' consequences on conventional and takaful demand. At the end of the study, income, financial sector, and urbanisation influenced the demand for both conventional and takaful insurances. Meanwhile, it was the opposite for the dependency ratio. Within this case, the financial performance of the takaful industry will always be a great step to improve the growth of the takaful industry further.

By conducting four comprehensive interviews with Muslim consumers and takaful operators in the Klang Valley area of Malaysia, Nor (2014) determined the elements that impact Malaysians' decision to select takaful over conventional insurance.

According to the results of the interviews that were conducted, it can be concluded that

takaful consumers have a clear understanding of takaful as well as the demand for Shariah compliance. Next, for Muslims, takaful is required as a replacement for traditional insurance. Furthermore, takaful customers are aware of the relationship between takaful and religion in the context of contemporary business. The roles of takaful agents in presenting the concept of takaful and its advantages can also be considered acts of worship in their own right. The obligation of takaful agents in promoting takaful items to Muslims might be regarded as a form of da'wah. However, the expansion of takaful company has been rather moderate as compared to traditional insurance. Thus, from the research that had been conducted, takaful operators and takaful agents may use the findings of this research to justify their efforts in designing, developing, and appropriate promotion and awareness interventions so that takaful products and sales might witness extensive development in Malaysia.

### **2.3 Profitability Ratios**

Every other corporation is quite aware of all of its competitiveness. Profitability ratios are among the most relevant accounting ratio measuring instruments. They are often used for evaluating the financial performance of the business for its managers as well as the gain to its owners on equity. Both company managers and shareholders are remarkably similar, productivity indicators are necessary. To guide the company in the desired direction, management is required to provide an evaluation of productivity. When a firm has outside potential buyers who have invested shares in the company, the company's management must illustrate sustainability to such investors. At the end of every quarter and year, profitability ratios display the total productivity of an organisation utilising its resources and output. Profitability is broken down into two,

which are margin ratios and return ratios. Metrics that indicate margins reflect the potential of the organisation to convert revenue money into earnings at different calculation points.

Few studies have proved the usage of financial ratios in evaluating the financial status of a company. For example, seeing Bahrain's status as being among the leading Islamic financial institutions globally has enabled the growth of the Kingdom's takaful industry extremely important. Takaful is an important part of the Islamic financial sector, making it difficult to provide a successful and productive Islamic finance industry without any assistance from the well-developed takaful industry. Thus Hidayat (2015) studied the applications of financial ratios in observing and making a comparative analysis between the performances of conventional and takaful insurance companies. The data collected from the Central Bank of Bahrain (CBB) Insurance Decennial Report was based on these five consecutive years, 2006, 2008, 2010, 2011, and 2012. Common financial ratios have been deployed in this study, such as profitability, efficiency, underwriting performance, liquidity, and solvency. He used a regular analysis test, a t-test to differentiate both conventional and takaful company ratios. He found profitability ratios significantly influenced conventional insurance compared to takaful. The study concluded that the takaful insurance sector needs improvement in its distribution channel to boost its performance from profitability and efficiency perspectives. Thus, this study fills in the gap by analysing all relevant ratios towards takaful operators in Malaysia.

Almajali (2012) also contributed to acknowledging the importance of financial ratios as he studied 25 Jordanian insurance companies listed on Amman Stock Exchange. Their financial performances were mostly affected by factors such as age, size, liquidity, and management competence index and leverage. He acknowledged that

several industries, including the banking sector, have performed well in Jordan, and the insurance industry has not contributed to the development of the Jordanian economy. For certain firms that have achieved the most profits, the entire economic success of insurance companies in Jordan was quite poor. This data was collected from 2002 to 2007 by reading sources like articles, books, relevant literature, annual reports, and companies' financial statements. ROA was treated as a dependent variable that will evaluate the financial performance, while some financial ratios are the independent variables under those main factors. At the end of the study, he indicated most factors showed significant impact on the financial performance of those twenty-five companies, except company age due to well-established and good expertise company's background.

In addition, Zain (2017) studied the relationship of financial indicators in terms of size, leverage, liquidity, and equity capital towards the performance of takaful operators that was measured by using ROA as she observed the financial performance of the takaful industry in Malaysia was unstable. The study covers a sum-up of eleven Malaysian takaful operators listed under BNM from 2011 until 2015. She used formal multiple regression analysis and normality test to check the data distribution and analysed using SPSS software. Then, she found out both leverage and liquidity did not show any relationship towards the performance of takaful operators. Meanwhile, size and equity capital provided significantly but in positive and negative relationship respectively. This study supports the utilisation of ROA to gain efficient results in observing the financial performance of takaful operators.

Saif (2017) also supported the application of ROA and ROE towards the profitability assessment used in terms of capital adequacy, asset, and management quality, earning ability, and liquidity framework. In addition, he addressed that ultimately, the collapse of one bank influences the owners and holders of the bank and

those other banks and all companies associated with that bank. This study involved combinations of 20 listed and unlisted banks under the Saudi Arabian stock exchange between the year 2000 until 2014. As a result, it found that foreign banks gained lower revenues compared to domestic banks. In conclusion, this study indicates many factors affect the profitability of companies, especially in terms of finances.

Furthermore, the takaful industry's inefficient Enterprise Risk Management (ERM) has become one of the top five company risks based on the E&Y global takaful report (Omar, 2019). The study investigated how ERM implementation factors affect the financial performance of the global takaful industry, measured in ROA and ROE. He conducted the secondary data study on 30 takaful operators over 10 countries over the period between 2012 until 2015. The hypotheses among ERM and financial performance parameters were analysed using Stata and Eviews through correlation and regression analyses. The study proved there was a positive relationship of ERM implementation towards the takaful industry's financial performance. Through this, the objective of exploring the financial performance of takaful operators using profitability ratios of ROA and ROE will be worth it.

Tanveer (2017) indicated that the central aim of the financial statement of an organisation would be to provide relevant parties engaged in the decision-making process with valuable component details. Such released financial statements are recognised as credible and appropriate tools for predicting the organisation's future prospects and performance evaluation. He provided a study on 22 insurance and 5 takaful operators listed on the KSE-100 index within the period from 2010 until 2016 to measure how fundamental ratios affect the financial performance using ROA and ROE. The secondary data collected through audited financial reports of chosen operators showed ratios such as retention, loss, efficiency, and liquidity, and capital

adequacy was significant towards ROA of takaful operators. Meanwhile, for ROE, only retention, loss, and liquidity ratios were significant. Therefore, the utilisation of ROA and ROE will be useful in analysing the performance of Malaysian takaful operators.

Although the capital structure typically has a significant impact on profitability ratio, this one study indicates otherwise. Pointer & Khoi (2019) examined the predictors of the Vietnamese stock market of banks and insurance companies, ROA, and ROE. To investigate the key hypothesised determinants of ROA and ROE, an applied quantitative approach was used with a simple OLS regression model. The researchers discovered that the capital structure is a negative predictor of equity returns but not asset returns. For internal variables such as business size, book value, return on equity, years in operation, and earnings per share, the study found that they are statistically significant predictors of return on assets and return on equity. On the other hand, causation is not constant between ROA and ROE. Given that internal variables are major predictors of these critical variables, management should strengthen its internal structure by cultivating stability among financial managers.

Numerous studies on the insurance industry have been undertaken, most of them focusing on mixed insurance systems. As a result, there has been a dearth of studies on fully-shariah compliant insurance systems in general (Guendouz & Ouassaf, 2018). The result of this research was that Guendouz and Ouassaf carried out a study to discover the most important internal elements affecting the profitability of insurance takaful companies operating in an Islamic insurance system. For 2010-2016, quarterly reports from the six main Saudi takaful insurance companies were collected and analysed using panel data techniques such as pool ordinary least squares, fixed effects, and rand-based approaches to analyse the data. As a result, it was feasible to find the elements that determine the profitability of Saudi Arabia's cooperative insurance enterprises, also

known as return on assets, by applying the preliminary data analysis methodologies previously stated. Furthermore, it was discovered by the study's findings that characteristics such as age, size, written premium growth rate, and loss ratio had an impact on the profitability of insurance takaful organisations. Consequently, the policy implications of this study for the stakeholders in the takaful insurance industry are extremely important because they may contribute to a company's financial performance being improved.

The findings of another study conducted by Boadi et al. (2013) involved a study sample of sixteen insurance firms in Ghana to investigate the profitability of insurance firms in Ghana found that there is a positive relationship between leverage, liquidity, and the profitability of insurance firms in Ghana despite a negative relationship between tangibility and the profitability of insurance firms in Ghana. The exploratory study method was used in conjunction with a qualitative study method to conduct this research, which included the use of both descriptive and inferential statistics. The study's findings revealed a positive relationship between profitability and liquidity, but the relationship is not statistically significant. Furthermore, the researchers discovered that while leverage and liquidity had a positive relationship with profitability, tangibility had a negative relationship.

In addition, a study conducted by Tadese et al. (2020) on 17 insurance businesses in Ethiopia to determine the characteristics that influence the profitability of insurance companies in Ethiopia during the years 2014-2018. The audited financial accounts of seventy-one insurance companies were analysed using multiple regression models implemented in Stata software version 14 for analysis. According to the study's findings, there is a positive and statistically significant association between ROA and liquidity, capital adequacy, real GDP, and the real effective exchange rate. On the other

hand, a negative and strong relationship exists between ROA and leverage, underwriting risk, and premium growth, on the other hand. Furthermore, the return on assets has a positive but small relationship with inflation. As a result, it can be concluded that insurance companies should maintain a sufficient liquidity ratio to discharge their responsibility for time accidents and cover their short-term obligations, but not too high or too low, to maintain company profitability and build public confidence.

In a recent study by Al Maani et al. (2021), the purpose of a recent study was to investigate the impact of liquidity and profitability ratios on the market value of stocks in Jordanian insurance companies. A sample of five insurance companies from the period of 2015-2019 was studied. To examine the relationship between both liquidity ratios and profitability ratios and how they affect the market value of stocks, the researchers used a method known as the descriptive-analytical approach, which focuses on five independent variables, namely trading ratio, opening capital to total capital, operating profit margin, return on assets, and return on equity, and their impact on the dependent variable, which is the stock market value. The study findings reveal that ROE correlates positively with Jordanian insurance company stocks' statistically significant market value. In conclusion, it can be stated that return on assets plays no role in attracting new investors.

## **2.4 Approaches Used in Assessing Financial Performance of Insurance**

### **Industry**

Many approaches have been introduced in previous studies to measure the financial health of an insurance company. The popular approaches are by using financial ratios and rating systems such as RBC and Claim Ratio. However, there is also another

technique to analyse the performance of companies not only from the financial aspect, but it does cover overall aspects in the company's operation, which is by using intellectual capital. The following sections will give brief explanations regarding the approaches that will be used in this study.

#### **2.4.1 Claim Ratio**

The claims ratio calculates the number of claimants over a period and divides the number of claims over the same period by the premium received. It is important to remember that insurance is a risk control activity and, to do it correctly, the insured requires a detailed view of the number of losses sustained.

For instance, Abdou (2014) stated that the takaful sector in Malaysia is probably facing competitive pressure in many main areas from the conventional insurance sector. The absence of an appropriate marketplace for Shari'ah-compliant standardised regulatory system for investment and inadequacy of study are among the primary issues obstructing the industry's successful product growth. First, though, he studied the use of combination macroeconomic variables like Gross Domestic Product (GDP), Consumer Price Index (CPI) and Treasury Bill Rate (TRB) and financial ratios against the performance of conventional insurance and Malaysian takaful based on twelve insurance companies, six from both takaful and conventional insurance. The data from 2005 to 2010 were retrieved through the annual report of companies involved, BNM and Department of Statistics Malaysia (DOSM). After testing the multicollinearity, he included seven out of thirteen financial ratios, which fall under solvency and profitability ratios. He also used multiple regression in determining the relationships of three macroeconomic variables towards their dependent factors. At the end of the study,

he figured out conventional insurance tends to manage and perform better, along with fully utilised shareholder's capital as compared to takaful. He also indicated that conventional insurance highly experienced losses because of the high claim ratio, which was probably caused by the financial crisis in 2008. It also can be concluded that conventional insurance is affected by GDP and TBR. Meanwhile, takaful did not experience any impacts upon macroeconomic variables.

Moreover, Das (2017) stated that insurance providers actively check to avoid the accumulation of claims and boost the policyholders' cumulative claims satisfaction. But late on, the unwavering fascination with top-line growth leads insurers to consider all risks to raise market share but instead engage in the signing of claims. Worse still, insurance firms appear always to be lacking track of the fact that lawsuits are the firm's main platform and yet are determined by their clients on their track of claims. Then, he studied the effect of the claim ratio since the high underwriting loss affects non-life insurance companies in India and its relationship on the net premium income and performance of twenty-four public and private non-life insurance companies. He distinguished the claim history of both types of non-life insurance companies using a two-independent sample t-test. The data was collected based on a 10-year interval from 2002 to 2003 until 2011 to 2012. As a result, a strong correlation exists between Net Premium Income and Claim Ratio in non-life insurance companies with no difference in claim history of public and private life insurers. He also figured out that non-life insurers spent very high percentages of their Net Premium on insurance settlement in India.

Muhamat et al. (2017) stated it is vital to know the takaful operator is using that profit gains from the general takaful sector to optimise the value of the takaful contribution.

In contrast, short-term contract terms schemes were often included in general takaful.

Therefore, the financial health of the takaful operator would be impaired by plenty of claims events. He further studied how factors highlighted in various articles such as the number of accidents, fraud on takaful claims, and the amount of coverage protection affect the claims of general insurance over 10 years period. The results were obtained through descriptive analysis, correlation, and computation of claim ratio, concluding that all three factors positively impacted the company's takaful claim. This proved the importance of claim ratio as the tool to evaluate the condition of takaful claim.

Pervan (2012) together supported insurance firms were requested to take down significant sums of capital assets, non-paid premium receivables from policyholders, to expand technical requirements, and to strengthen their reinsurance schemes, all of which combined culminated in an undesirable ratio of claimants. The study then analysed how insurance-specific factors such as claim ratio, expense ratio, and size of the insurer influenced the profitability of insurers in Macedonia during the period of 2002 until 2011 using ROA measure. The dynamic panel data were analysed using the two-step General Method of Moments and Arellano and Bond test statistics. The results were found that the expense ratio, claims ratio, financial growth, and inflation affect the performance of the insurance business, which then supported the objective of this study to use claim ratio as one of the main indicators to assess the financial performance of takaful operators.

According to Awuah et al. (2015), a study was conducted to evaluate the financial performance of Ghanaian insurance companies listed on the Ghana Stock Exchange (GSE) and the Ghana insurance industry as a whole. The study compared the companies' performance using risk ratios, profitability ratios, and asset management ratios over five years, spanning 2009 to 2013. Annual audited financial statements and annual reports of the National Insurance Commission, as well as audited financial statements from 2

publicly-traded insurance companies in Ghana, were used to gather the data for the study and were then quantitatively analysed by employing Stata (version 12) to conduct a detailed analysis of the financial ratio by comparing the financial performance of both companies. Based on the research that was performed on the data that was acquired, it can be determined that there is no statistically significant difference between two components in risk ratios which are claim ratio and technical reserve cover ratio with the profitability ratios of the two organisations, as well as between the asset management ratios of both companies. The consistency of the results in terms of statistically insignificant differences can serve as a foundation for further research into the significance of the impact of the insurance industry's profitability on the economy.

#### **2.4.2 Risk-Based Capital (RBC)**

RBC is a way of calculating the required volume of capital necessary for a reporting agency to finance its ongoing operating activities, taking into account the scale and level of risks. The National Association of Insurance Commissioners (NAIC) created RBC in 1992, implemented in 1993 by the US property-liability insurance company (NAIC, 2019). Cummins (1999) stated in order to avoid insolvency and observe the financial status of the insurance company, NAIC deployed risk capital measurements which are the Insurance Regulatory Information System (IRIS), RBC, and the Financial Analysis and Surveillance Tracking (FAST). RBC formula produces the minimum regulatory capital that a firm has to hold to escape regulatory action. Based on the formula, four degrees of level might trigger a firm: company action, regulatory action, authorised control, and mandatory control levels needed to be controlled by the regulator and company.

This was supported by Lazam (2012), that studied the impact of insurance company listed under Kuala Lumpur Composite Index (KLCI) and Malaysian Government Securities (MGS) in response of RBC implementation. The data collected from 2008 to 2009 is based on the company's financial statement used to calculate the Capital Adequacy Ratio (CAR), which comprised Total Capital Available (TCA) and Total Capital Required (TCR). She also conducted stress tests towards market and credit risks as reduction existed in the portfolio's market value due to equity exposure and any shifting on the yield curve, respectively. At the end of the study, she concluded that the insurer could freely alter their solvency rates based on their risk levels and appetites without sacrificing obligatory requirements through RBC implementation. As a result, the CAR ratio was observed as sound since it was greater than 13 per cent of the minimum requirement, and the stress tests grant good impacts upon the assets and liabilities of the company. This study fills in the gap by evaluating CAR upon all takaful operators operated in Malaysia to boost the performance of the takaful industry in the future.

A few variables are significant in predicting the financial distress of non-life insurance firms in Indonesia, according to Dewi & Mahfudz (2017), and they are as follows. The first of these is the incurred loss ratio, which has a positive and statistically significant impact. In addition, insurance companies with a higher incurred loss ratio will be more likely to experience financial difficulties in the future. Following that, the liquidity ratio, which measures the relationship between liabilities and liquid assets, has a positive and significant impact. Higher liquidity ratios (greater than 100 per cent) indicate a greater likelihood of financial distress for insurance companies, and firm size has a negative and statistically significant impact on predicting financial distress in the non-life insurance industry in Indonesia. Finally, insurance companies with large assets

will be more likely to survive and have a lower chance of financial distress. Using the logistic regression method, it is conducted on 63 samples of insurance companies, 53 of which are experiencing non-financial distress and 10 of which are experiencing financial distress.

According to Akpan et al. (2017), there is a scarcity of research on capital-based regulation and the performance of insurers in developing markets. Therefore, a study was conducted to determine the impact of capital structure on the performance of insurers in Nigeria, both before and after implementing the RBC policy regime, and the results were published. The descriptive statistics used in the study were used to describe the characteristics of the data, and the hypotheses were tested using a two-stage estimation procedure for fixed and random effect models, respectively. According to the study's findings, insurers performed better during the NRBC regime than they did during the RBC regime, with technical provision being the preferred funding option. However, it is possible that this occurred as a result of the negative influence of some firm-specific and macroeconomic factors like age, slow growth, inflation, and taxation on the firm's operating environment.

Through qualitative research, Ismail et al. (2019) investigated the need to understand better the concept of capital management for the takaful business, particularly in light of the solvency and RBC requirements for takaful companies in Malaysia. The theoretical and practical aspects of capital management in takaful were discussed in the research, which was based on a review of the literature and published sources. According to the study's findings, capital management is an integral part of the overall enterprise risk management of the takaful business. To improve the standing of the takaful operator in a competitive market environment, it is necessary to improve the prudence, cost-effectiveness, and efficiency of the takaful operation's management.

Furthermore, because the takaful industry is a young industry that bases its operations on Islamic principles, the takaful industry cannot afford to fail because doing so would result in a significant loss of public confidence in the industry. Therefore, this study may provide more insight into how the takaful industry should meet its operations' solvency and RBC requirements.

In addition to that, Tarsono et al. (2020) studied seventeen life insurance companies listed under the Indonesia Stock Exchange market affected by Net Premium Growth, Claim Ratio, and RBC on their financial performances. The data was collected from 2014 to 2018 through Insurance Statistics, of which those companies had registered on the Financial Services Authority (OJK). The performance of insurance companies was measured using ROA against the three independent variables of NPG, Claim Ratio, and RBC. Due to the nonexistence of any random or common effects, the fixed effect regression model has been selected using Chow and Hausman tests. He found that both Net Premium Growth and Claim Ratio did not influence the financial performance. Instead, RBC was the only one that affected.

Apart from that, Lee (2019) studied the impacts of twelve family takaful operator (FTO) performances towards the implementation of RBC Takaful (RBCT) based on several main sources of the financial institution, which were productivity, efficiency, and competitiveness within relationship exists between these sources. He used DEA, Malmquist Productivity Index (MPI), and Panzar-Rosse (PR) to observe the impacts of RBCT on efficiency, productivity, and competitiveness, respectively. The data collected from 2011 to 2016 is based on the annual report of listed companies with macroeconomics data retrieved from the World Bank. At the end of this study, FTO has proven to be inefficient in pre and post-effect of RBCT and lacks technological productivity changes even though they can cooperate with its implementation.

Meanwhile, competitiveness in pre situations seemed to be slow but had a jump in the post-effect RBC implementation.

Furthermore, Nasution (2019) studied the performance of fifteen insurance companies through financial ratios analysis while comparing minimum RBC achievable by Islamic insurance companies in Indonesia and takaful operators in Malaysia against the minimum regulatory RBC requirement. The data was collected through financial statements from listed companies registered on OJK and BNM for the year 2017. The RBC was being tested using Mann-Whitney Test Difference Test while financial ratios were analysed by regression technique. The study concluded RBC variable is still weak since the standard deviations observed in both countries' insurance companies were quite high. Both are also indicated as less ideal due to the liquidity and RBC, which fell under the required limit. For Malaysian takaful operators, liquidity, the balance of assets, and return on investment have a huge impact on the competitiveness of Islamic insurance companies whereby RBC, equity ratio, and fund balance ratio have a major effect on the competitiveness of Indonesian Islamic insurance firms.

Because RBC (T) frameworks are the primary regulatory policies that regulate conventional and takaful insurers in Malaysia, and because they have an impact on insurers in a variety of ways, Lim et al. (2021) conducted a study to determine the efficiency, productivity, and competitiveness of life and general insurers and to determine the efficiency, productivity and competitiveness of life and general insurers.

A few sources, including the International Statistics Yearbook, the BNM's official website, and annual reports from respective insurance companies, provided the data for the sampling. The data was used to compute efficiency and productivity scores and a PITA score, which was calculated using DEA, MPI, and P-R methodologies. According to the study's findings, the efficiency and productivity of conventional insurers have

deteriorated as a result of the implementation of risk-based capital requirements. The risk-based capital for the takaful framework, on the other hand, has the opposite effect of increasing the efficiency and productivity of takaful insurers.

### **2.4.3 Intellectual Capital**

Intellectual capital is called an asset, which can be defined as the accumulation of all the intellectual resources available to an organisation that can be used to increase revenues, attract new clients, develop new goods or otherwise enhance the firm. The number of employee skills, organisational processes, and other intangibles contributes to a company's bottom line.

The early research discovered that intellectual capital (IC) is an important link in explaining that successful firms are those that can respond well to the new dynamics of firm competition by being able to strike an optimal balance between their employment of tangible and intangible resources through exploiting the firm's dynamic capabilities in responding dynamism in the environment (Wan Yusoff & Jantan, 2005). The impact of IC on performance varies depending on the nature of the environment in which the organisation operates and the sort of business strategy followed by the firm. A total of 183 licenced banking institutions, licenced insurance companies, takaful, development finance institutions, and stock brokerage companies participated in this survey, intending to obtain responses from the respondents on the extent of IC in the business environment. The data for this study was gathered through personally administered questionnaires from a list of 183 licenced banking institutions, licenced insurance companies, and takaful, development finance institutions, and stock brokerage companies, which was obtained from Bank Negara Malaysia.

Alipour (2012) studied the profitability of insurance companies in Iran by implementing intellectual capital. He determined the IC of those companies by using VAIC and its relationship towards the profitability of those companies using the partial least squares method. The financial statements data of active insurance companies have been collected from 2005 until 2007. He used the gross profit of insurance companies to measure the profitability of Return on Assets as the dependent variable. As a result, he concluded a positive relationship between one of VAIC components, human capital efficiency (VAHU), and Iran insurance companies' profitability. He also stressed the importance of IC and its components as a favourable procedure that insurance companies must look upon to increase the profitability of companies. This study fills the gap by including Return on Equity as another dependent variable against the VAIC score of takaful operators.

Rehman (2013) also studied the impact of IC and its components of Value-Added (VA) creation, Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), and Capital Employed Efficiency (CEE) towards the performance of the insurance sector in Pakistan by using VAIC. He used profitability measures of ROE, Return on Investment (ROI), and Earnings Per Share (EPS) as dependent variables to measure the financial performance. The data was collected from Insurance Association Pakistan from 2009 to 2010, which combined 21 life and non-life insurance companies. At the end of this study, he stated that VAIC had a significant impact on ROE while HCE and SCE positively correlated with ROE and the ROI of those companies. He also saw VA as an important indicator for optimising the efficacy of the insurance sector and evaluating VAIC.

Joshi (2013) studied 33 companies listed under the Australian Stock Exchange (ASX) market of their intellectual capital performance in different sub-

sectors in the Australian Financial Sector. The data was collected from 2006 to 2008 based on financial databases. He used the VAIC model to evaluate HCE, SCE, CEE, and VAIC itself. The financial performance was measured using ROA, while its relationship between the IC components was determined using multiple regression. He found that different sub-sectors have different VAIC scores. For example, due to the higher rates of HCE, financial firms have a high valuation VAIC relative to banking institutions, insurance firms, diversified financials, and REITs. However, VAIC contribution is lower since insurance firms rely more on physical capital than human and institutional capital.

Stahle (2011) used data of 125 listed Finnish companies to testify the validity of the VAIC model as the intellectual capital indicator and whether the VAIC value can be used to estimate a company's market value. The data was collected from 2006 to 2008 using financial statements of those companies. As a result, he concluded that labour and capital investments did not have any relation with intellectual capital based on the VAIC value. The validity cannot be verified with the existence of overlapping variables in VAIC value calculation. He also figured out a meaningless correlation between the market value of the companies with VAIC. Previous VAIC results were considered inconsistent due to the disorganised cash flow entities and capitalised in the evaluation of structural capital and misinterpretation of IC concepts.

Chen (2014) studied how intellectual capital affects general insurers' productivity changes in Malaysia using the VAIC model. He first highlighted that companies facing obstacles that include spending extensively in IC are likely to be more critical in knowledge-intensive sectors, including the insurance industry, to sustain or boost competitive benefit. The data were collected from 2008 to 2011 and retrieved using annual reports of 16 licensed general insurer firms listed under Malaysian Central

Bank (BNM) and statistical reports from BNM and Datastream. He first detected changes in productivity by using the Malmquist Productivity Index (MPI) of Data Envelopment Analysis (DEA) and MPI with bootstrapping approach. Then, he used ordinary least squares (OLS) and Tobit regression to determine IC's impact on the changes. At the end of this paper, he found intellectual capital (IC) significantly impacts productivity changes. Meaning said implementation of IC for insurance companies in the future would provide them with better productivity.

A study conducted by Syah Aji & Kuarniasih (2015) on the impact of Islamic finance on financial performance at Islamic insurance firms was also published in 2015. The data for this study were collected from seven Indonesian Islamic insurance companies between the years of 2010 and 2013. The Partial Least Square (PLS) method is applied in this study when it comes to data analysis. The findings indicate that intellectual capital had an impact on the company's financial performance, with the relationship between intellectual capital and financial performance allowing parameter coefficient estimation of 0.845 and significant 0.05 (t-significance table 0.05=1.697) with t-statistics of 46.771. This demonstrates that the more the amount of intellectual capital a company possesses, the better the financial success of the company. Furthermore, according to the literature, there is evidence that only VACA and SVTA are statistically relevant in establishing the VAIC construct for five years of observation to Islamic insurance.

As revealed by the findings of a study conducted by Nasir (2019), the VAIC component has a significant impact upon return on assets, with changes in the VAIC component having a significant impact on financial performance, particularly the return on assets of Islamic financial institutions in Malaysia. In addition, the other components of VAIC showed a statistically significant link with both ROA and CEE when compared

to the other components of VAIC. Yet, despite this, it was discovered that HCE had no statistically significant effect on ROA. In terms of the influence of IC on ROE, the study discovered that VAIC did not have a statistically significant effect on ROE. Furthermore, HCE and SCE both contributed significantly to ROE, with only SCE having a statistically significant effect on ATO (opposed to the other two). As a result, this demonstrates that the relationship between IC efficiency and firm performance does not have a distinct direction. Furthermore, the IC factors offered to the analysts are important in making investment decisions; nonetheless, the traditional measures of ROA and earnings growth are more important than the IC variables. The study's findings also indicated a statistically significant association between human and structural capitals and bank performance but that there was no statistically significant relationship between relational capital and banking performance.

Apart from that, Kweh et al. (2019) also conducted research to determine the relationship between intellectual capital (IC) and firm performance and the differences in the influence of IC on firm performance between firms with and without public sector ownership. Approximately 200 publicly traded companies in Malaysia were studied between 2010 and 2015. It was decided to use a quantitative technique to verify intellectual capital hypotheses that impact financial performance in this study. The VAIC approach is counted, and the partial least square method is used to verify the results. The results of intellectual capital research are documented and assessed as data that has been discovered and regarded as the genuine state. Meanwhile, financial reporting annually, such as balance sheets and income statements of funds businesses and the financial health of the most recent funds from insurance companies, has been the research subject and is utilised as secondary data. The study found that firm performance is positively affected by IC. It is critical in increasing firm performance,

with HCE and CEE being more significant than SCE in terms of firm performance. Government ownership, on the other hand, is averse to company success. HCE fared better in enterprises that were not government-owned than in firms that were. Given Malaysia's strong political history, the report recommends that the government shift its political attention away from corporate corporations and enhance its HCE to increase its performance.

A study conducted by Mohammad & Bujang (2019) to examine the influence of intellectual capital on Malaysian financial firms from two perspectives, namely, the performance of intellectual capital and the impact of intellectual capital on financial performance, was also published in the same year. The sample for this study was compiled from the audited annual reports of 21 financial firms listed on the Malaysian stock exchange, Bursa Malaysia, spanning the years 2011 to 2015, which served as the basis for the study. The IC is measured using the MVAIC model, while the ROA model's financial performance. There were two hypotheses examined in this study: the first was that a higher value of MVAIC results in a higher return on investment (ROI). The second was that CEE, HCE, and SCE provide beneficial contributions to the organisation's financial performance. The study found there is a strong association between MVAIC and return on investment, with a higher value of MVAIC leading to a greater return on investment. In addition, the firms with higher levels of CEE, HCE, and SCE make favourable contributions to financial success.

## **2.5 Financial Performance of Takaful operators**

Financial performance is a statistical indicator that shows how effectively an organisation can extract funds from its primary operating style to produce sales. Often,

the term is used as a general indicator of the overall financial health of a company over a given timeframe. In evaluating financial performance, it requires the financial statement of a company. The financial record of a business comes in terms of the balance sheet, income statement, and cash flow statements. The terms and figures listed in the financial statement are known as financial ratios. Financial ratios assist in assessing the relative success of different financial metrics characterising the company's financial stability. Financial ratio analysis includes constructing ratios incorporating different components from the financial statements in ways to determine the firm's assets and weaknesses. There are five key financial ratios which are profitability, liquidity, efficiency, market value, and leverage.

This was proved by (Ibrahim et al., 2020) that identified factors influencing the financial performance of takaful operators. This study covers the involvement of composite takaful operators listed under BNM from the year 2007 until 2016 by using their financial statements. The results were then analysed using common statistical analyses such as mean interpretation, skewness, kurtosis, and Jarque-Bera, and six independent variables of profit or interest rate level, equity return, company size, underwriting procedure, and liquidity and retakaful dependence towards dependent variables, which was ROI. Then, it indicates that both interest or profit rate and retakaful did not show impact meanwhile all other factors prove significant impact on financial performance.

Desta (2016) studied seven African banks listed as 2015 best banks on Global Finance Magazine using CAMEL ratings towards the banks' performances. The complete financial statements were collected from 2012 to 2014 on listed banks. The CAMEL composite ratings that have been deployed in this study were based on fifteen financial ratios under AIA's CAMEL for banking analysis which ranged from 1 to 5.

This study used composite CAMEL components instead of ROA, ROE, and Net Interest Income Margin (NIM) to evaluate the banks' performances since some previous studies proved they produced inaccurate results. In the study, he proved the CAMEL method can be used to describe better financial performance since the components in CAMEL itself also consist of ROA, ROE, and NIM as the financial ratios. He also found that all banks show supervisory concern as measured in terms of asset quality, management efficiency, and liquidity ratio.

Muhaizam (2013) investigated the characteristics that determine the financial performance of general Islamic and conventional insurance businesses in Malaysia, using panel data from 2004 to 2007. The findings were published in 2013, and the research was conducted using panel data from 2004 to 2007. The information was acquired through the use of investment yield, which was used to measure the financial success of the various companies studied. Profit or interest rate levels, equity returns, company size, reliance on retakaful or reinsurance, solvency margin, liquidity, and contribution or premium growth are just a few of the characteristics that have been measured. All of which are tied to a variety of economic and firm-specific variables, as well as a variety of economic and firm-specific variables. When comparing the financial performance of general takaful firms in Malaysia to that of traditional insurance, a statistical analysis found that parameters such as company size, reliance on retakaful, and solvency margin are statistically significant predictors of financial performance. In addition, according to the findings, all of the criteria included in this study, except equity returns, were statistically significant predictors of investment performance. Despite the absence of takaful data because the business is still in its infancy compared to insurance firms at the time of the research, the study's findings may provide significant insight into the factors that influence the success of takaful companies in Malaysia. In this way,

the elements indicated can be utilised to improve further the financial performance of Malaysian general takaful and insurance companies in the long run.

## **2.6 Capital of Takaful Operators**

In an earlier study conducted by Kader (2010) to analyse the cost efficiency across a balanced panel of 26 takaful insurers operating in ten Islamic countries over the three years 2004-2006. For this study, Data Envelopment Analysis (DEA) was used to construct cost efficiency scores. A second-stage logit transformation regression model was estimated to investigate the influence of company factors on these scores. According to the study's findings, the addition of non-executive directors and the separation of the Chief Executive Officer and Chairman roles do not increase cost-efficiency. However, the size of the board of directors, the size of the firm, and the specialisation of products have a favourable influence on the cost efficiency of takaful insurers. This is due to the fact that larger corporations are in a better position to make operational gains than smaller corporations because they may draw on the expertise of a larger pool of experienced and financially capable executive directors. Furthermore, cost efficiencies appear to come from specialised product lines rather than more varied outputs, indicating that takaful insurers are not taking advantage of the economies of scale to their fullest potential. In addition, it is discovered that the effect of the regulatory environment is not statistically significant. As the researchers claim that this is the first study of its kind to be conducted specifically on the takaful insurance business thus, the findings of this study are significant because they have the potential to influence commercial and policy decisions and can serve as a groundwork for future research on the takaful insurance sector.

In the same study done by Lee (2019) about determinants that affect the efficiency level of takaful industry in terms of cost efficiency and technical efficiency with how takaful operators' specific factors also impact the efficiency level. The data comprised of 11 family takaful operators and 8 general takaful operators from the year 2011 until 2015. Two-stage Data Envelopment Analysis (DEA) and panel regression have been used to gain the score on each operator. The dependent variable used was the DEA scores. Meanwhile, the takaful operators' specific factors became the independent variables. The study concluded that general takaful operators obtain less cost than family takaful operators. However, the specific factors involved did not provide any relationship to takaful operators' cost and technical efficiency.

While Muhamat et al. (2020) used questionnaires to elicit feedback from the fund managers of 11 takaful operators in Malaysia about the influence of takaful products on the takaful operators' investment strategies and the availability of financial market instruments to support those strategies, the responses were recorded on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with a score of 3 indicating that participants were uncertain about their opinion of the topic discussed. A descriptive analysis was performed on the feedback, followed by the use of a nonparametric test, the Mann-Whitney U test, to see whether there were any differences between responses from general takaful businesses and responses from family takaful enterprises. As part of the questionnaire development process, responses on a Likert scale ranging from 1 to 5 are collected. The Delphi method is used to develop the research question for the questionnaire by sending the draft of the questionnaire to the experts for review. Based on the survey findings, the policymakers are satisfied with their current products and the return on their investment. However, it is necessary to

make continuous improvements to ensure that the products offered remain relevant and that the revenues generated are long-term in nature.

## 2.7 Conclusion

Based on the previous studies, this study will use claim ratio, RBC, intellectual capital, ROA, and ROE to evaluate the performance of takaful operators. Many studies have proven the effectiveness of using ROA and ROE to evaluate the profitability of takaful operators and the company of other big industries. Due to the small quantity of takaful operators in Malaysia, it is important to assess their financial performance in order to improve their operations better than conventional since they do not have many competitors yet.