



Enterprise Risk Management Program Effectiveness, Determinants, Execution and effect on Financial Performance: Evidence from Global Takaful Industry

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Abstract: This study has been conducted with an aim to find the impact of Enterprise Risk Management (ERM) Implementation on the Financial Performance of the world Takaful Industry. In this regard, ERM implementation level has been measured. There are also employed two control variables in the study that are age and Gross Domestic Product (GDP). On the other side the financial performance is measured in terms of its indicators Return on Investments (ROI) and Earnings Per share (EPS). A sample of 30 Takaful Firms from 10 countries has been taken for a period of 4 years (2014-2017). The study is quantitative in nature and secondary data has been used for this purpose. The hypotheses are being tested one by one through correlation and regression analysis. The findings can be utilized for the advancement of ERM within the Takaful Industry, making it strength of industry rather than a business risk.

Keywords: Enterprise Risk Management (ERM), Financial Performance (FP), Return on Investment, Earning per Share, Firm size, Gross Domestic Product, Takaful industry.

JEL Classifications: B26, G15

• Introduction

Enterprise Risk Management is the invention of this century and it has been emerged mainly as an approach which addresses the limitations of Traditional Risk Management. No doubt, it's a supreme subject, especially for those firms which have desire of success in the future. Since its commencement, it has turned into a standard instrument to manage the diversified risks of organization dealing the operational as well as strategic risks, and transfiguring the risks into opportunities. The main goal behind the advent of ERM is the well-coordinated management of all risks of an organization, ranging from corporate governance, auditing, information technology, distribution systems to the human resources. The arrival of ERM is not an obsession but a natural evolution of risk management, so that risks can be managed at organization wide level (Fraser et al., 2011).

In ERM approach, all risks are being identified and the corresponding risk responses are taken according to the defined risk appetite of an organization. When it comes towards Islamic finance, the concept of risk management is an important part of the ultimate goal of society well-being, both social and economic. Takaful is a tool which is being used in Islamic finance to perform the function of risk management by protecting the people and their properties. In Shariah, the main function of takaful is to lessen the worries and uncertainties, contingency damages and shielding the owner and his belongings.



The study is going to discuss the ERM implementation level of the Takaful Industry, which has been considered ineffective and has turned into a big risk. The implementation of ERM is not that fluent because many of its areas are still untouched and required exploration for a better understanding and smooth implementation. So, those firms that are already implementing it are also facing difficulties in spite of the availability of all main resources. The lack of work is one of the main impediment which makes ERM implementation a more difficult to perform process, because there is dearth of success stories. There has been found evidence that among the various potential risks for global Takaful Industry, ineffective ERM has been a top of them. Although it's been addressed a little, bringing it from no. 3 to no. 5 in the top business risks list of Global Takaful Industry. So, this research will actually focus on the ERM implementation level of the Takaful industry and will analyze its proposed impact on the financial performance of the Takaful Industry.

Aim of the study is To Analyze the Relationship between ERM Implementation Level on Return on Investments and Earning per share of the World Takaful Firms. This paper is divided into four headings. 2nd Heading section will give the literature review which covers theoretical and empirical literature of Islamic takaful industry, performance measures, Enterprise risk management (ERM) and its variables explanation and link of these variables with ROI and EPS. 3rd Heading demonstrates the research methodology of the paper. 4th heading section will give analysis and empirical findings and 5th heading section finally concludes the overall study

• Literature Review

11 For the long time organizations have been managing their risks through transferring them to the insurance firms or through planning. But In this world of globalization and the start of new century, the firms were exposed to enormous diversified risks; natural and man-made, which eventually affected the firm's strategic ability to achieve their goals, both, short term and long term. This situation moved the risk management phenomenon to the executives table and called it a responsibility of the senior management. This trend of diversified risks gave birth to the consolidated concept of Enterprise Risk Management (Togok et al., 2014).

• Enterprise Risk Management

The usage of new risk management functions ultimately increased the time and cost investment. All these encounters have moved the organizations in direction of managing the risk in a completely new way, in a holistic manner. This gave birth to the new concept of risk management called ERM, which discourages the silo-based approach and enforce management of all types of risks in the form of a portfolio.

There exist different visions regarding ERM in the circle of regulatory bodies. Some associate it directly with the organizational objectives (COSO, 2004; IIA, 2009). On the opposite side, some consider risks independent of organizational goals and argue that both develop no link with each other (Masood & Kiran, 2019). Another aspect causing some conflict is the way risk is seen. A school of thought considers risks as an opportunity to excel (CAS, 2003) whereas others take risk as a large problem that should be eradicated promptly (RIMS, 2007).

• ERM concept justification

Risk and Insurance Management Society (RIMS):

RIMS, Risk and Insurance Management Society, is an international, non-profit organization. According to RIMS "Enterprise Risk Management (ERM) is a strategic business discipline that



supports the achievement of an organization's objectives by addressing the full spectrum of its risks and managing the combined impact of those risks as an interrelated risk portfolio."

RIMS' Risk Maturity Model

RMM is made up of certain important indicators and activities that contribute in the development of a more robust ERM program, which can be maintained and repeated in the long course. The ERM program's self-assessment against the risk indicators identifies the strength of the organizational risk management efforts (Novi, Emir & Farida, 2019). At the end it assigns each organization's ERM program with a maturity score, which ranges from level 1 (lowest risk maturity level) to level 5 (advanced risk maturity level) - (RIMS, 2007).

Institute of Internal Auditors (IIA)

IIA has defined ERM in the following way: "Enterprise-wide risk management (ERM) is a structured, consistent and continuous process across the whole organization for identifying, assessing, deciding on responses to and reporting on opportunities and threats that affect the achievement of its objectives." (IIA, 2009). This paper explained the roles of internal auditors by suggesting that in following the ERM process what internal auditors should and shouldn't do. They have divided the 18 activities of ERM process into three main divisions. These were:

- Core internal audit roles in regard to ERM
- Legitimate internal audit roles with safeguards
- Roles internal audit should not undertake

Standards & Poor (S&P) Ratings:

In 2005, Standards & Poor (S&P) had introduced ERM for financial institutions in its rating criteria. The motive of this introduction was to consider the risk management and strategy characteristics of an organization into the rating criteria and for this purpose a portion of the rating criteria was fixed for ERM evaluation (Standard & Poor's, 2005). The ratings of S&P were developed in the form of an index which has an ultimate goal of evaluating the risk management systems, processes, culture and practices within a firm (Ben & Fatma, 2018).

Emergence of ERM

According to the results of a survey, which has been developed and conducted with the help of experts from Strategic Risk management Council at the Conference board, there are main five drivers behind the implementation of ERM (Gates, 2006). It comprised of Meeting Corporate Governance Requirements (66%), Strategic Management of Risks (60%), Regulatory Compliance (53%), Board Demand (51%) and Achievement of certain Competitive Advantage (41%). Here is a list of main forces derived from literature.

Risk Complexity: The foremost force behind ERM is the variety of the today's risks. The global mode of business, terrorist activities and the economic conditions around the globe are the producer of these risks (Riadi, Rifki & Syauqi, 2018). Besides these numerous risks the organizations are also affected by the mutual interaction of these risks. Consequently, it's not irrational to expect another unique lot of risks in near future. So, organizations have become aware of the necessity and significance to manage all risks collectively above of their size and ability to being measured quantitatively (CAS, 2003).

Exterior Pressure: The expectation of the companies to increase their ratings is also influencing them to pursue the ERM. As world's top rating agencies like Standard & Poor's, Moody's and Fitch are



taking into account the ERM implementation while evaluating the organizational operations. So, ERM implementation has a strong impact upon the ratings that is ultimately being issued. (Gates, 2006).

Corporate Failures and Regulatory Requirements: Although firms decide to adopt ERM for other promising benefits but compliance with the regulatory authorities has really compelled the ERM implementation (Pagach & Warr, 2010). Some famous compliance requirement around the globe includes Sarbanes-Oxley Act (SOX) in USA, UK corporate Governance Code, CoCo Report in Canada, Basel ii and New York stock Exchange Corporate Governance Rules (Zhaot et al., 2014).

• Enterprise Risk Management Implementation level

In the literature, following indicators has been associated with the adoption and implementation of ERM in any organization.

Chief Risk Officer: Chief Risk Officer is a new-fangled position, coined and incorporated at the start of this century. Before that, corporate risk manager was a low level position in the organizational structure whose key responsibility was to purchase insurance. But with the increased importance and complexity of risk management, a senior executive position titled as Chief Risk Officer (CRO) has been incorporated within the organization to identify and measure the all types of risks (Nocco & Stulz, 2006).

Audit Committee: Paape & Speklé, (2012) concluded that the existence of audit committee in an organization contributes towards the ERM implementation of the organizations.

Risk Management Committee: The participation of different managerial level in the implementation of ERM really does matter. There has been found a strong association between the formation of a risk management committee and providing proper ERM training to the senior executives with ERM maturity (Beasley et al., 2015).

Board Size: A push from the regulatory authorities has really impelled the organizations to strengthen their risk management processes and question the role of Board of Directors in risk oversight. Board of Directors need detailed knowledge on the organizational operations to make the strategic decisions. The relationship between the large number of board and the additional organizational value has been seen in literature (Lynall et al., 2003).

Board independence: Board independence is the percentage of the board of directors, which are independent. There is substantial evidence available about the impact of board support to implement the ERM. It has been reported by Beasley et al., (2005) that the firms with higher board independence percentage are further on the way towards the ERM implementation, which means the more the proportion of independent board members the high stage of ERM is being implemented by the firm.

S&P's ERM Rating: After the issuance of S&P's ERM ratings, it has become an important part to evaluate the risk management process of a firm. Initially, it has been focused on the insurance firms but later other non-financial firms also have been included (McShane et al., 2011).

Four Big Audit Firm (FBA): The literature of auditing has enforced that those firms associated with big four audit firms deliver higher quality of audits. Such firms are more expected to implement ERM because these larger auditing firms influence and inspire their customers to improve their risk management practices.

Firm Size: ERM implementation is also likely to be affected by the size of the firm. ERM is costly to make it fully implemented, and customarily large organizations are more formal, that's why they are more inclined towards ERM recognition than the small firms (Paape & Speklé, 2012).



International Diversification: The relationship between international diversification and the resultant firm value has been mixed. There are many studies which resulted in the strong relation between both (Deniset al., 2002) but many contrary results are also on the list.

Institutional Ownership: Shareholders have keen interest in ERM implementation as they are the final beneficiaries of the enhanced value creation and better decisions regarding different risks. But the effectiveness of their pressure is dependent upon whether the firm is under Institutional Ownership or Owner-managed firm. A strong correlation has been found between the implementation of ERM and the listing on Stock Exchange in Europe (Paape & Speklé, 2012).

Growth: ERM has larger value for those firms which are going through substantial growth than others. As this growth momentum requires the firm to develop a comprehensive risk management system to tackle the all uncertainties emerging.

• ERM Implementation Level and Financial Performance of a Firm

The relationship of risks and value has been the topic of investigation in research since long. The main purpose of inculcating the different risk management systems in an organization is to lessen risks and increasing firm's value (Woods, 2009). The different risk management programs cause improvement in the performance of a firm because they save the firm from different type of losses like bankruptcy and reputational costs (Gordon et al., 2009). The external pressures of compliance with regulatory authorities have really damaged the role of ERM as a decision-making tool in the organizations. The differences in terms of its measurement techniques and ambiguity in defining its role, have compressed the utilization of ERM. ERM implementation has been turned into task of sheer compliance with the regulators by conflicting with its central purpose of risk mitigation and improved firm performance and ultimately having no effect on them (Arenae et al., 2011).

• Hypothesis Development

H1a: There is a positive relationship between the appointment of Chief Risk Officer and the Return on Investments of the Takaful Industry

H1b: There is a positive relationship between the appointment of Chief Risk Officer and the Earnings per Share of the Takaful Industry

H2a: There is a positive relationship between the establishment of Risk Management Committee and the Return on Investments of the Takaful Industry

H2b: There is a positive relationship between the establishment of Risk Management Committee and the Earnings per Share of the Takaful Industry

H3a: There is a positive relationship between the Board Independence and the Return on Investments of the Takaful Industry

H3b: There is a positive relationship between the Board Independence and the Earnings per Share of the Takaful Industry

H4a: There is a positive relationship between the appointment of a Four Big Audit Firm and the Return on Investments of the Takaful Industry

H4b: There is a positive relationship between the appointment of a Four Big Audit Firm and the Earnings per Share of the Takaful Industry

H5a: There is a positive relationship between the Firm Size and the Return on Investments of the Takaful Industry



- H5b: There is a positive relationship between the Firm Size and the Earnings per Share of the Takaful Industry
- H6a: There is a positive relationship between the international Diversification and the Return on Investments of the Takaful Industry
- H6b: There is a positive relationship between the international Diversification and the Earnings per Share of the Takaful Industry
- H7a: There is a positive relationship between the Institutional Ownership and the Return on Investments of the Takaful Industry
- H7b: There is a positive relationship between the Institutional Ownership and the Earnings per Share of the Takaful Industry
- H8a: There is a positive relationship between the Revenue Growth and the Return on Investments of the Takaful Industry
- H8b: There is a positive relationship between the Revenue Growth and the Earnings per Share of the Takaful Industry

• **Methodology**

Statistical Tool: The current study has the panel data which is also known as cross-sectional time series data; because in panel data the all cases have been observed on two or more periods of time. The main data source of this study is the secondary in nature. After the collection of secondary data from the official financial statements of Takaful firms, the data has been analyzed in EViews8, Econometric Views software. The research under investigation is basically a quantitative study which is descriptive in nature. Descriptive analysis was performed to describe the general nature of the data. Pearson's correlation was calculated to describe the correlation coefficients of all variables with each other using correlation matrix. Regression has been performed through the Generalized Method of Moments (GMM).

Data: In the case of current study, the interest area which has been taken as population to investigate is the Takaful Industry of the world. There are total 103 Takaful firms in the world (Al Huda, 2016). So population of the study is Takaful industry of world. 30 firms have been selected by employing their 4 years financial statements (2014-2017), both inclusive. Takaful firm from 10 countries including Saudi Arabia, Malaysia, Bahrain, Bangladesh, Kuwait, Qatar, UAE, Oman, Sri Lanka and Pakistan were chosen for analysis. This selection has been made on the basis of availability and all those firms have been selected from the Industry, which maintain their annual financial statements on regular basis.

• **Data Analysis**

There are many famous measures of dispersions but to discuss the sample data of this study only Mean, Standard Deviation, Minimum and Maximum values are being taken into consideration.



Table 1: Descriptive Analysis Results

Variables	Mean	Maximum	Minimum	Std. Dev.
ROI	6.778858	165.6752	-163.792	31.6956
EPS	0.166003	1.912314	-0.77245	0.407309
CRO	0.125	1	0	0.332106
BI	27.528	100	0	27.17825
RMC	0.433333	1	0	0.497613
FS	8.126519	10.14925	6.70647	0.797169
ID	0.066667	1	0	0.25049
IO	7.212157	84.92	0	20.36931
FBA	0.8	1	0	0.401677
RG	123.5032	13231.37	-432.377	1208.046
GDP	4.730833	9.3	0.5	1.443373
AGE	11.23333	36	0	8.633269

Descriptive analysis Table

In case of third dimension of the financial performance, ROI comes with mean of 6.79, standard deviation of 31.6956. It means that although average is good but the data consists of values which are too big at one end and too small on other. This dispersion in data can be due to the choice of countries which are much different in terms of their economies, ultimately affecting the financial performance of different institutions. Last but not least financial performance indicator under discussion in the following study is the EPS. It has a mean of 0.166003 with standard deviation of 0.407309. On average, it also appears with a positive mean for the Takaful firms. CRO has a standard deviation of 0.332106, which implies that the deviation of the values from the mean is normally spread. The average, 27.528 of the BI shows that majority of the firms are still in low board independence situation but the dispersion of the data is wide which states that there is availability of differentiated situations in terms of board independence. FS has a strong average of 8.126519 which is quite good and indicates that lion's share of the industry is being segmented on the basis of firm size. The mean of ID is 0.066667, which is very low and near to zero. So, it depicts that a tiny share of the Takaful firms are internationally diversified. IO has resulted with an average value of 7.212157, which is good enough and shows that on average there are very low ratio of firms are under institutional ownership. The average of FBA is 0.8, which is definitely a vigorous indicator and it obviously shows that majority of the firms are being external audited by one of big four auditing firms. RG has been identified with a mean of 123.5032 which is not that good when it's being analyzed. It is obvious that firms' revenue growth is not remarkable as an industry and there is big deviation from the mean value.



Table 2: Regression Analysis of ROI and EPS

Variable	Prob (ROI)	Prob (EPS)
C	0.0000	0.0000
CRO	0.0000	0.0040
RMC	0.0943	0.4304
BI	0.2212	0.0205
FBA	0.0000	0.9922
FS	0.0000	0.0000
ID	0.3251	0.0107
IO	0.0278	0.5158
RG	0.0066	0.8817
AGE	0.4930	0.0000
GDP	0.0000	0.0303
R-squared	0.501962	0.244748
Adjusted R-squared	0.400321	0.090614
Durbin-Watson stat	2.360215	2.179132
J-statistic	0.019181	0.907459
Prob (J-statistic)	0.889848	0.340790

Return on Investment: The results have proved that the fitness of the model is good as R-squared has a value of 0.501962. Another important indicator which is the value of Durbin Watson test, it actually shows that there is no issue of auto correlation as it has a value of 2.360215, which is near to 2 (no autocorrelation). In addition, the p-value of J statistic is 0.889848, which is greater than 0.05, the ultimate proof of the validity of the instrument that has been institutionalized to remove the issues of endogeneity. The dimensions of independent variable which are significant at 5 % level of significance are CRO, FBA, FS, IO, RG and GDP. There is just a single dimension of ERM implementation level which is significant at 10% and that is RMC.

Earnings per share: The results have proved that the fitness of the model is good as R-squared has a value of 0.244748. Durbin Watson test actually shows that there is no issue of auto correlation. The four dimensions of ERM implementation level have proved significant regression towards earnings per share of takaful firms. These dimensions are Chief Risk Officer, Board Independence, Firm Size and International Diversification.

• Conclusions

9 Enterprise Risk Management is the concept of this new era, an approach towards efficient and effective risk management by managing the interconnection of all business risks, at one place in the form of a portfolio. It discourages the management of risk in a traditional way by isolating them, which ultimately don't address the interactions of the variables proving it an inefficient way of risk management. On the basis of the all statistical analysis the results are found in favor of the relationship. The majority of the dimensions, which has been included in the study, to measure the ERM implementation level are affecting the financial performance. Many of the results are in line with the previous literature and claiming that ERM implementation level has a positive impact on the



financial performance of the Takaful Industry. The financial performance in terms of EPS is also found to be positively associated with ERM implementation, as has been observed in literature (Laisasikorn & Rompho, 2014). Hence, it's time to convert the element of ineffective Enterprise Risk Management within the Takaful Industry into a tool. This tool will definitely help lift the financial performance of the Industry in both accounting and market terms. By managing the diverse risks into a portfolio, a unique source of competitive advantage would be generated in the Takaful industry.

• **Recommendations:**

- There is strong need to manage the risks of Takaful firms in a holistic way by integrating ERM. As Takaful is also being used to meet the risks of the ordinary as well as business life, it's of utmost importance that how the Takaful operators handle their own risks.
- The study is performed in different countries and suggested that the risk culture is also an important factor which differentiate the firms in their level of ERM implementation. ERM is a team work that needs to be spread all over the organizational levels to make its implementation smoother and its results more fruitful.
- There is dearth need to develop a unified ERM framework for the industry, which targets the all industry specific needs of Takaful industry. This introduction will ultimately cause an increase in the adoption of ERM within industry. In the longer run this type of implementations will smooth the process of implementation, approaching with robust results.

Limitations of the Research

Every research has some limitations and so is the case with the current study. Every effort has been made in the best of the research to make it more effective and authentic. These are the limitations of the current study:

- The study is being performed through the single source of data which is secondary data and this happened because of limited resources.

There has been a limitation regarding the non-availability of data. The official websites were not being managed for historical data..



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