



Implementation of Enterprise Risk Management Practices in Organizations: An Empirical Analysis of Takaful Industry Financial Performance

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Abstract: In the E&Y global report on Takaful industry, it has been observed consecutively that an ineffective Enterprise Risk Management (ERM) is among the top five business risks of the Takaful Industry. The present 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 through the availability of Chief Risk Officer (CRO), Establishment of a Risk Management Committee in the firm, the Board Independence level within firm, the hiring of an auditor from big four auditors firm, firm size, percentage of institutional ownership in the shareholding structure, the operational diversification of a firm (national or international) and the percentage change in the revenues of the firm. There are 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 accounting performance and market performance. For this purpose two financial performance indicators Return on Assets (ROA), Return on Equity (ROE) have been used. A sample of 30 Takaful Firms from 10 countries has been taken for a period of 4 years (2012-2015). The study is quantitative in nature and secondary data has been used for this purpose. Hypotheses are being tested one by one through correlation and regression analysis by using Stata and Eviews. The results of the study indicate that majority of the hypothesis are accepted and shows a positive impact of ERM Implementation on the Financial Performance of the Takaful Industry.

Keywords: Enterprise Risk Management (ERM), Financial Performance (FP), (ROA, ROE), Regression, Takaful industry.

JEL Classifications: G32

1. Introduction

Risk is not like particles physics but a chemistry, which can't be separated (Mikes, 2011). Risk has been something as a strategic combination which is comprised of both vulnerabilities and opportunities; and ERM is actually a tool with a drive to manage the risk of an organization in such a way that it also exploits the value-enhancing opportunities (Beasley, Branson, & Pagach, 2015 ; Aabo et al., 2005). Traditionally, the management of the risks has been executed in an uncoordinated way, by categorizing them separately. Different risks are managed in isolation, where corporate risk managers handle the pure risks and treasury department was responsible for the management of financial risks.

The main point where ERM differentiate from the traditional risk management approach is that it's more focused on the interactions of different risks and understands them in a more systematic way.



The main deterrence behind the smaller amount of implementation of ERM is the lack of the successful cases of firms implementing ERM (Aabo et al., 2005). ERM has contributed towards the organizations in the following way:

- The cost of capital has been reduced
- The shareholder's value has progressed which is caused by reduction in both, earnings volatility and stock price volatility
- Those risks have been utilized which have an exposure of a competitive advantage
- Organizations have become up-to-date regarding different risks, ultimately improving their decision making ability
- The investors are now more confident

The motivation behind research is that, results of study would extend the limit of already existed literature on ERM and Takaful. It would be insightful for the World Takaful Industry, as it will determine that which financial indicators are most affected by ERM implementation. In addition, it will also define that which elements of ERM implementation are significant and insignificant concerning the total financial performance. On the other side, the study will outline the direction of ERM implementation level impact too. The study would contribute to the academia of Takaful Industry with a motivational approach. So that by inculcating ERM throughout the industry, ERM implementation no more exist on the top business risks list of the Global Takaful Industry but among the top business strengths.

Aim of the study is to analyze the Relationship between ERM Implementation Level and Return on Assets (ROA) and Return on Equity (ROE) 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 ROA and ROE. 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.

2. Literature Review

The extensive review of the literature revealed that traditionally different risks were being managed in isolation and this way of risk management was recognized as "Silo Based approach" or rarely called as stove-pipe approach (Banham, 2004). This isolated management of risk doesn't take into account the impact of the mutual interaction of these individual risks in silos. This increased complexity in the modern Risk management has actually stipulated the demand of an approach that is firm wide and manages all kind of risks, either systematic or unsystematic, at one place. So, ERM was evolved as a holistic, integrated, firm wide approach, which covers up all types of risks and the interaction among them. Although ERM is still in its evolving stage but a general agreement has been developed about its three fundamental elements (Bromiley et al., 2014).

- 1st: Management of risk in the form of a portfolio is more efficient than managing the risk individually. The portfolio property of ERM actually ceases the effects of individual risks.
- 2nd: Target of ERM is not just the typical risks (disasters and liabilities) but it also take into account the strategic risk, which are often the major risks associated to the operations of a firm.
- 3rd: it was agreed, those firms which are capable to manage a risk, they should take it as an opportunity on the way to a competitive advantage rather than just a problem to deal with.



2.1. What is Enterprise Risk Management?

The development of ERM started in the mid 1990's and it has been strengthened after the incident of 9/11 in US. The financial crisis of 2008 also has caused a boost in its progress (Choi et al. 2015). ERM has become indispensable for every organization in pinpointing their potential risks. The effective ERM implementation doesn't only reduce the cost but it utilizes the resources of organization to generate solutions (Jalal-Karim, 2013). Besides that, a series of eminent business failures and scandals became the reason behind the emergence, adoption and implementation of the concept. There were two main reasons behind this emergence. First was the failure of the hefty firms in those situations where it was avoidable for them. So, it encouraged the firm's to make an effort to shun the not-inevitable risks. Ultimately, it had widened the firm's risk receptiveness, making the top management more answerable for the risks. The second source was the demand of contemporary business strategy, the need of shareholders value.

The need for ERM ascended when the world has confronted various new kinds of risks at the start of the 21st century. These risks were ranging from internal issues to wide external challenges. The scope and nature of these risks drive the firms to adopt different risk management techniques.

2.2. Society's Rationalization of ERM

2.2.1. Casualty Actuarial Society (CAS)

In 2003, Casualty Actuarial Society (CAS) has defined precisely the concept of ERM (CAS, 2003) as: "ERM is the discipline, by which an organization in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purpose of increasing the organization's short and long term value to its stakeholders."

2.2.2. Committee of Sponsoring Organizations of the Treadway Commission (COSO)

Committee of Sponsoring Organizations of the Treadway Commission (COSO) is a mutual initiative which actually built up framework and direction on ERM. In 2004, COSO presented an ERM integrated framework; it's designated as the most acknowledged definition of ERM: "A process, affected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives."(COSO, 2004).

2.2.3. COSO's integrated ERM framework

COSO's integrated ERM framework is broader and companywide. It doesn't replace the already established internal control framework but pursued an across the firm risk management process. It comprised of a three dimensional matrix, including organizational objectives, components of ERM and level of the entity. According to COSO's report on ERM (2010), COSO's ERM integrated framework has a share of 54.6 % among other available ERM frameworks.

2.2.4. ISO 31000:2009

The adoption of ISO 31000:2009 has been recommended to apply under the supervision of organizational management. This doesn't question the authenticity of the standard instead the main focus here is that the way things are being implemented really does matter (Lalonde & Boiral, 2012). The standard actually encourages an approach of integrating the risk management at enterprise wide level with the help of a universal framework. This framework must be aligned with the organizational objectives.



2.3. Forces behind Emergence of ERM

The forces behind the development of ERM are in a continuance, the increase in number of forces will ultimately develop the more refined risk management practices. Here is a list of main forces derived from literature.

Advance Quantitative Technique: In the case study of United Grain Growers (UGG) to implement ERM, the technical support in the quantification of risks has been taken a key element. The presence of the complex statistical analyses, finding probability of the exposures to different risks, developing probability distributions and interpreting the results are the obligations and exclusiveness of ERM (Harrington et al., 2002).

Globalization: The globalization has played an important role in producing the global standards, tools and techniques; this is known as boundary less benchmarking (CAS, 2003). The wide spread application of these procedures has been fueled by the extensive sharing of information globally. Although, organizations vary in their risk management practices to meet the special needs of organizations but over-all concepts and practices behind this customization are similar.

Exterior Pressure: In addition, external pressure from all stakeholders of organization has played a significant role in the adoption of ERM. From the big failures of the corporations in managing their risks, institutional bodies, rating agencies, stock exchanges, regulatory institutions and above all shareholders of publicly traded companies have compelled the senior management of the organizations to manage the risk at a wide level (Gates, 2006).

2.4. Enterprise Risk Management Execution Level

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

Chief Risk Officer: There are numerous articles that have investigated the ERM implementation by using the proxy of CRO and have found that presence of a CRO is positively related to the ERM implementation level (YAZID et al., 2011) and ultimately ERM implementation level has a contribution towards firms value (Beasley et al., 2005).

Audit Committee: Another element which is considered important to effect ERM implementation level within a firm is the presence of an audit committee. As audit committee have a role in management of the organization and their risk practices, which provides it with sufficient attention and resources to implement ERM. Audit committee act as “financial policeman” in organization, it shows that they have strong relation with internal audit function and management of overall enterprise risk (Bender, 2018).

Risk Management Committee: According to Amoozegar et al. (2017), the infrequent meetings of Risk Management committee has also been considered an important element to the risk management failure during the financial crisis of 2008.

Board Size: A direct positive relationship has been recognized among the board size, risk management and the organizational performance but this relationship is more significant in the small size organizations than the gigantic businesses. These large boards must be heterogeneous in their composition for the reason that the homogeneous board might omit the salient feature of diversity (Dalton et al., 1999).

Board Independence: ERM implementation has been the result of board independence which certainly affects risk management decisions of board. 51 % in the Canadian companies claimed that they have implemented ERM just because of board’s assistance (Kleffner et al., 2003).



S & P's ERM Rating: There has been found a positive relationship between ERM rating and firm's value up to the third level and for the last two levels of ERM rating, this relationship doesn't exist (McShane et al., 2011).

Four Big Audit Firm (FBA): Paape & Speklé, (2012) has found a positive significant effect of big four auditors on the ERM implementation of the firms. Whereas there is also found negative relationships in this regard, which shows that there is no association between big four auditors and ERM implementation level (Beasley et al., 2005).

Firm Size: The literature has argued that the basic structure of risk management of all big organizations is almost same but when it comes to the operation level, the risk management system becomes conditional upon the organization size, technology in the organization and the central government policy (Woods, 2009).

International Diversification: According to Standard & Poor's (2005), those firms are more likely to implement ERM which are more complex in structure. International diversification is about the operation of firms in the international markets and important dimension which explains the complexity of a firm in a fine way. The firms which target markets other than their home country are diversified internationally. Such firms are complex in their operations and thus are more inclined towards the implementation of ERM (Hoyt & Liebenberg, 2011).

Institutional Ownership: When ownership is distributed, management can easily ignore the spread of shareholders. On contrary, in institutional ownership, due to significant voting rights of institutional investors and their direct effect on the organizational cost of capital, management is enforced to take into account as well as understand their preferences (Kane & Velury, 2004). This is the reason that institutional owners are more dominant than individual shareholders and put for the abundant stress to inculcate ERM in the operations of the organization.

Growth: The risk profile of organization is also contributory in better decision making (Liebenberg & Hoyt, 2003). But it has been noticed that the relationship between ERM implementation and the organizational growth is weakly significant (Bertinetti et al., 2013).

2.5. ERM Implementation Level and Financial Performance of a Firm

A substantial number of studies have been done in this regard. When the ERM effect on the financial performance is being checked, it must be visible in the form of increased shareholder value or accounting terms (Meulbroek, 2002). The impact of ERM on the financial condition of the firm is substantial when ERM is implanted throughout the organizational operations. ERM impact can be successfully measured from the scientific measures which take into account the collective view of performance (Acharyya & Mutenga, 2013). The introduction of an ERM program within an organization yields a strong positive impact on the risk performance of the organization (Sax & Torp, 2015) and it has been determined that the firms with ERM are 20 % more valuable than the firms which don't device ERM (Hoyt & Liebenberg, 2011). ERM implementation equally affects the both financial and non-financial firms in respect of increased performance. This performance usually comes in terms of reduced volatility in both earnings and stock prices (Bertinetti et al., 2013).

2.6. Hypothesis Development

H1a: There is significant relationship between the appointment of Chief Risk Officer and the Return on Equity of the Takaful Industry

H1b: There is significant relationship between the appointment of Chief Risk Officer and the Return on Assets of the Takaful Industry



H2a: There is significant relationship between the establishment of Risk Management Committee and the Return on Equity of the Takaful Industry

H2b: There is significant relationship between the establishment of Risk Management Committee and the Return on Assets of the Takaful Industry

H3a: There is significant relationship between the Board Independence and the Return on Equity of the Takaful Industry

H3b: There is significant relationship between the Board Independence and the Return on Assets of the Takaful Industry

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

H4b: There is significant relationship between the appointment of a Four Big Audit Firm and the Return on Assets of the Takaful Industry

H5a: There is significant relationship between the Firm Size and the Return on Equity of the Takaful Industry

H5b: There is significant relationship between the Firm Size and the Return on Assets of the Takaful Industry

H6a: There is significant relationship between the international Diversification and the Return on Equity of the Takaful Industry

H6b: There is significant relationship between the international Diversification and the Return on Assets of the Takaful Industry

H7a: There is significant relationship between the Institutional Ownership and the Return on Equity of the Takaful Industry

H7b: There is significant relationship between the Institutional Ownership and the Return on Assets of the Takaful Industry

H8a: There is significant relationship between the Revenue Growth and the Return on Equity of the Takaful Industry

H8b: There is significant relationship between the Revenue Growth and the Return on Assets of the Takaful Industry

3. Research Methodology

A. Statistical Tool:

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 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 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. Regression has been performed through the Generalized Method of Moments (GMM). Pearson's correlation was calculated to describe the correlation coefficients of all variables with each other using correlation matrix.



B. 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 (2012-2015), 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.

4. Data Analysis

In the statistical analysis, descriptive statistics actually describes the data of the selected sample in a more simple, precise and understandable way.

4.1. Descriptive Analysis of Data

Variables	Mean	Maximum	Minimum	Std. Dev.
ROA	-0.01817	12.47	-163.339	15.97799
ROE	-0.089	28.52	-575.447	54.72455
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

Dependent Variables = ROA: Return on Asset, **ROE:** Return on Equity

Independent Variables = CRO: Chief Risk Officer, **BI:** Board Independence, **RMC:** Risk Management Committee, **FS:** Firm Size, **ID:** International Diversification, **IO:** Institutional Ownership, **FBA:** Four Big Audit Firm, **RG:** Revenue Growth

Control Variable: GDP: Gross Domestic Product, **AGE:** Age

According to the descriptive statistics calculations, ROA has a mean value of -0.0182 with a spread of 15.978. This shows that on average ROA will have negative trend. In the same way, the analysis of ROE depicts that it has a mean value of -0.089 and a big standard deviation of 54.7246. Return on equity is also inclined towards negative value, on average. 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 lower value and shows deviation in making decision by Takaful firm regarding their audit system. 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. GDP and AGE are controlled variable and their average mean shows their influence on takaful firm. So, in regression analysis researcher control their effect on independent and dependent variables relation.

4.2. Regression Analysis of ROA and ROE

Variable	Prob (ROA)	Prob (ROE)
C	0.0000	0.0064
CRO	0.3738	0.4391
RMC	0.0463	0.2902
BI	0.3796	0.0084
FBA	0.0003	0.2052
FS	0.0002	0.0001
ID	0.5297	0.8359
IO	0.0000	0.0520
RG	0.0094	0.3069
AGE	0.8093	0.0333
GDP	0.0056	0.0720
R-squared	0.421136	0.264350
Adjusted R-squared	0.303000	0.171230
Durbin-Watson stat	2.605389	2.542363
J-statistic	1.797629	1.794146
Prob (J-statistic)	0.063016	0.180422

Return on Asset: The goodness of fit test, which is being identified through R-Squared, is 0.421136. It indicates that the model's goodness of fit is good enough. Similarly, Durban Watson stat of 2.605389 is the proof that the coefficients are without the issue of autocorrelation. According to above results, there are 6 dimension of ERM implementation level which are significantly impacting ROA and the remaining four are insignificant towards ROA. Among the significant variables there include RMC, FBA, FS, IO, RG and GDP. All of these are significantly impacting ROA at 5% level of significance.

Return on Equity: The results have proved that the fitness of the model is good as R-squared has a value of 0.264350. Durbin Watson test actually shows that there is no issue of auto correlation. There are 5 other ERM implementation level dimensions which don't affect the financial performance of Takaful firms significantly. The list comprised of CRO, RMC, FBA, RG and ID.

5. Conclusion



The study has focused on exploring the relationship between ERM implementation and financial performance of the Takaful Industry. It has taken the important determinants of ERM implementation after the thorough analysis of literature. 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 significant impact on the financial performance of the Takaful Industry. The financial performance in terms of ROA, ROE are also found to be significantly associated with ERM implementation, as has been observed in literature (Laisasikorn & Rompho, 2014). These findings clarify and conclude that implementation of these ERM dimensions needs to be executed in takaful Industry to boost the financial performance of takaful operators, through the industry and around the globe. The reason of this inclusion is that ERM implementation through these determinants has a positive impact on the financial performance of the Takaful industry.

Recommendations:

ERM implementation has been seen to affect the market performance of Takaful industry strongly. Hence its impact on shareholder value proposes that its impact on all other stakeholders would also be strong, if being implemented at all organizational level.

There is dearth need to develop a unified ERM framework through IFSB Standard 14 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.

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