

# Evaluation of Risk Management Strategies in Government Institutions: Case Study on Abu Dhabi Municipalities

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**Abstract:** Government institution's failure around the world has motivated researchers to investigate the link between risk management strategies and performance of government institutions. The prime objective of this study is to examine the impact of risk management framework implementation (RMFI) and risk management success factors (RMSF) on the performance of government institution in Abu Dhabi. Survey data on 163 employees from three Abu Dhabi Municipalities (Abu Dhabi City, Al Ain City Municipality, Al Dhafra Region Municipality) were collected. PLS-Sem 3.0 software were applied to test hypotheses. The findings of this research release that RMFI, and RMSF has significant effects on the performance of Abu Dhabi municipalities. The study recommends that government firms and regulatory agencies should promote sound risk culture with a view to increase risk awareness, establish a robust information management system for comprehensive risk analysis and reporting, devise internal risk knowledge sharing strategies to boost staff capabilities and entrench effective leadership role to handle complex firms' operational activities.

**Keywords:** Risk management framework implementation, risk management success factors, government institute firm performance

## 1. Introduction

The global economic meltdown is an indicator that regulatory agencies need to increase their monitoring and surveillance capabilities to ensure a sound global financial system (Nicolas, 2012). Government institutions are among the most significant economic drivers that improve the welfare of individuals by supporting the ability of households and business entities to hold and transfer financial assets (CBN, 2010). Despite, the role of this important sector, government institutions around the world have witnessed monumental challenges in carrying out effective and efficient intermediation (Oladapo & Richard, 2012). For example, the market capitalization of the global equity markets dropped from US\$1 trillion dollars to US\$21 trillion dollars, a decrease of 56 percent in 2009 (Onour, 2009). These developments have negatively affected the performance of firms globally.

As a response to global failure, various government agencies had developed rules and regulations that were meant to guide firms' operational activities. The United State of America introduced Sarbanes-Oxley Act (SOX 2002) to control and protect further corporate fraud in the country (Lai & Azizan, 2012). The Sarbanes-Oxley Act requires a top-down risk approach that includes identification, prioritising and assessment of material risks for better business performance (Daud, Yazid, & Hussin, 2010). These regulations have prompted business firms to be relentless in identifying efficient strategies that will improve their performance and survival.

In Abu Dhabi, the government institutes are surrounded by poor risk management practices, economic distress, solvency crises and operational infractions among others (Ramady, 2013). Some of the government institutions were involved in sharp business practices that fleece shareholders investments (AlNuaimi, Shaalan, Alnuaimi, & Alnuaimi, 2011; Reiche, 2010). Also, the introduction of various economic reforms in the country has led to the explosion of several corporate governance codes. These corporate governance conventions set the regulatory capital base that could control the risks facing the government sector and stipulate how effective monitoring will improve firm performance.

However, empirical findings have been inconsistent concerning the anticipated benefits of risk management strategy to firm's performance (Abdullah *et al.*, 2012; Ballantyne, 2013; Mikes & Kaplan, 2014). To resolve some of the inconsistencies in the literature, some studies have suggested the introduction of certain organisational variables (Gordon, Loeb, & Tseng, 2009; Hafizuddin-Syah, Abdul-Hamid, Janor, & Yatim, 2014). The CBN (2006) corporate

governance report identified managerial ownership as a possible incentive that may lead to interest alignment between the management of a firm and its owners (shareholders). Since risk management strategy implementation is a board decision, the study argued that alignment of interest between board members and the owners may likely strengthen risk management decisions which may eventually improve firm performance.

Notably, the concern of the board of directors is to ensure that an effective risk management strategy is in place. It is, therefore, likely that in line with several studies (Bhagat & Bolton, 2008; Carol Liu, Tiras, & Zhuang, 2014; Hillman & Dalziel, 2003; Lim & Mccann, 2013), board equity ownership may lead to the alignment of interest between board members and shareholders. Hence, this alignment of interest may improve the board monitoring capacity with a view to improving firm performance (Ren, Chandrasekar, & Li, 2012). Thus, the success of risk management strategies is expected to be supported by board equity ownership. Hence, board equity ownership may improve the monitoring ability of the board, which will lead to effective risk management strategies (Bouwens & Verriest, 2014). Thus, it is against this background that this study will attempt to examine the impact of risk management strategies on the performance of firms in the government institutes of Abu Dhabi.

## 2. Literature review

Several sources in the literature have traced the concept of risk management to the year 1955 (Harrington & Niehaus, 2003; Williams & Heins, 1995). Dionne (2013) stressed that the new aspect of managing risk emerged during the mid-1950s as a substitute for insurance buying due to the high cost of insurance policy. He further asserted that organisations developed contingency planning activities and a series of risk prevention techniques within the period. During that period, risk management was not considered as an aspect of the business management process. It is simply a mechanism for taking precautionary measures to ensure the success of business operations (Kalita, 2004). There was neither quantitative practice to assess risk nor the technology available to manage and distribute it. Hence, business activities became defenseless and prone to various types of risks.

### 2.1 Risk Management

The concept of success factors has been in practice since the 1970s (Yaraghi & Langhe, 2011). The concept refers to a systematic way of identifying the critical areas, or signposts, that require constant and careful attention of management in order to achieve higher firms' performance (Ram & Corkindale, 2014). Rockart (1978) was among the first authors to introduce the concept of success factors in organisations. He defined success factors as "the limited number of areas in which results if they are satisfactory, will ensure competitive performance for the organisation" (Rockart, 1978, p. 12). Specifically, firms need to identify few key areas where things need to go right for the business to flourish. Freund (1988) viewed success factors as essential ingredients that are suitable for each unit of business organizations. Mcleod and Scheel (2004) defined it as "one of the firm's activities that have a strong influence on the ability of the company to meet its objective".

Since RMSF is a holistic process, this study focuses on compliance, risk management culture, risk management information, risk knowledge sharing, staff competence, innovativeness and leadership factor as important success factors that can drive business performance. These factors have received little attention in the RMSF literature stream. Moreover, Strauss and Corbin (1998) argued that success factors ought to reflect the study practical issues. As such, these success factors emerged from the practical issues raised in this study.

In order to improve organizational performance, information dissemination is expected to assist organisations to understand and manage business fortuities. Some studies have reported the positive relationship between RMIS and firm performance (Al-gharaibeh & Malkawi, 2013; Altaany, 2013; Hashim et al., 2012). Based on these theoretical arguments between RMIS and firm performance of government institutions in Abu Dhabi, the study has come up with the following hypotheses:

**Ha<sub>1</sub>**: Risk management framework implementation has significant impact on firm performance of government institutions in Abu Dhabi.

**Hb<sub>1</sub>**: Risk culture has significant impact on firm performance

**Hb<sub>2</sub>**: Risk management information system has significant impact on firm performance.

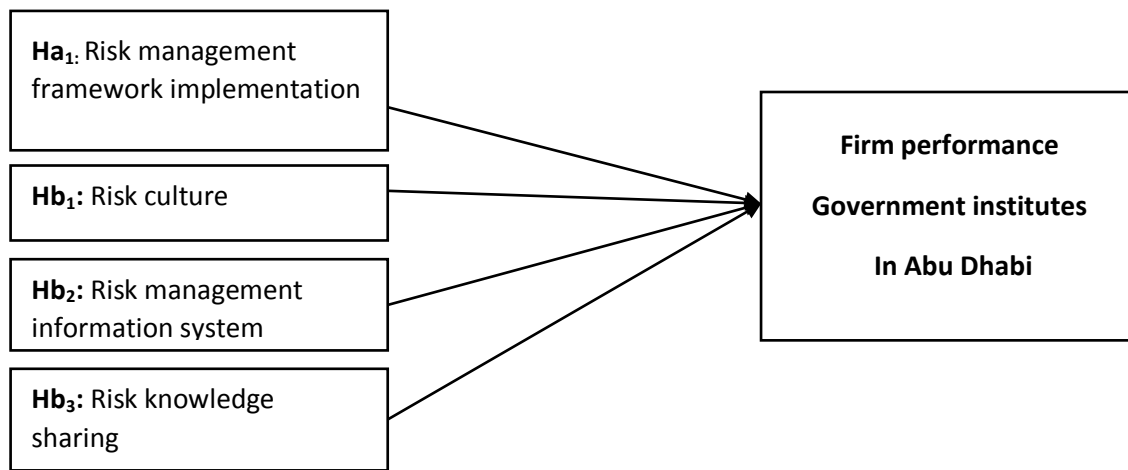
**Hb<sub>3</sub>**: Risk knowledge sharing has significant impact on firm performance.

**2.3 Agency theory**

The complexity of modern business, stock market development and the need for organisations to allocate risk efficiently (Fama, 1980; Fama & Jensen, 1983) have created the need for principal-agent relationships. Agency theorists have argued that in the modern corporation, conflicts of interest surfaces because of the division that exist between managers and owners (Pratt & Zeckhauser, 1985). Fundamentally, agency theory has provided the background for understanding the contractual relationship between principals (owners) and agents (managers) in the modern business environment (Jensen & Meckling, 1976).

In an agency relationship, the agent may pursue actions that are inconsistent with the wealth maximization interests of owners (Demsetz & Lehn, 1985; Jensen & Meckling, 1976). The contract has obliged the agent to ensure efficient management of risks on behalf of the principal, who is the residual claimant and the risk bearer (Fama & Jensen, 1983).

*Figure 1: Conceptual Framework of risk management strategies and firm performance of government institutes in Abu Dhabi.*



A quantitative approach refers to a situation where numerical data is used to represent the phenomenon being studied (Hair Jr *et al.*, 2010). It is a method for testing theories by examining the association between variables (Creswell, 2014). This study adopts a correlational (predictive) research design using a survey approach. This type of design is employed when a researcher is interested in establishing some form of association or ability of a particular variable (independent variable) to predict and outcome variable (dependent variable) (Kumar, 2011; Sekaran, 2003). The survey approach allows the researcher to collect quantitative data from the respondents and analyze using both descriptive and inferential statistics. A survey method is used where a researcher is interested in assessing empirically the thoughts and opinions about a given social phenomenon via the collection of primary data from the respondents (Fisher, 2010). A survey research provides a speedy way of making an accurate assessment of a given population (Zikmund, Babin, Carr, & Griffin, 2013). Thus, a survey method was considered appropriate for this study.

**3.1 Population and sample**

The population for this study constitutes three municipalities in Abu Dhabi. They include Abu Dhabi City Municipality, Al Ain City Municipality, Al Dhafra Region Municipality in Abu Dhabi; making a total of 256 employees at manager level. These government institutes are confronted with diverse and highly sophisticated risks that require a comprehensive risk management strategy. Inability to manage risk in this critical sector may have a devastating effect on the economy as a hub for efficient allocation of resources. Therefore, this study will inspect the influence of risk management strategies on the performance of government institutes in Abu Dhabi. Since the larger the sample sizes the better the possibility of achieving higher statistical significance, the researcher considers another

method of determining higher sample size to further compliment the prior power analysis. Firstly, the researcher used the sample size table provided by Krejcie and Morgan, (1970) to determine the sample size. According to the table, a population of between 250 and 259 has a sample size of 152. In a nutshell, a total of 163 usable questionnaires were collected from three municipalities.

### 3.2 Measurement

In this study, the data was measured using Likert scale. The questionnaires were answered on a five-point Likert scale. The Likert scale was considered appropriate for this study due to the nature of the information respondents were required to provide (Alreck & Settle, 1995). In line with this, Krosnick and Fabrigar (1997) suggested that a 5-point Likert scale is more reliable than higher or lower scales and scale with no midpoint may increase the measurement error. In the same way, Dawes (2008) states that a 5-point scale is likely to produce better results. Below are the constructs and the measurement items:

Table 1:  
*Construct, Sources and number of Items*

S/n	Construct	Source	No of Items
1.	RMFI	Lai (2012)	6
2.	Risk Culture	KPMG, 2011	9
3.	Risk management Inf. Sys	Rodriguez & Edwards (2009)	5
4.	Risk Knowledge Sharing	Rodriguez & Edwards (2009)	5
5.	Firm performance	Rettab, Brik, and Mellahi (2009); Gates, et al. (2012)	5

## 4. Data Analysis and Findings

### 4.1 The Measurement Model

The validity of the research outcome depends on the reliability of the relationship among measures of the constructs. Assessment of a measurement model (outer model). The analysis deals with the components that determine how to fit the items load theoretically and link with the respective constructs. According to Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014), items with loadings between .40 and .70 should be considered for deletion if their removal will increase the composite reliability or AVE beyond the suggested threshold. Therefore, 30 items had loadings between .508 and .900 (see Figure 2).

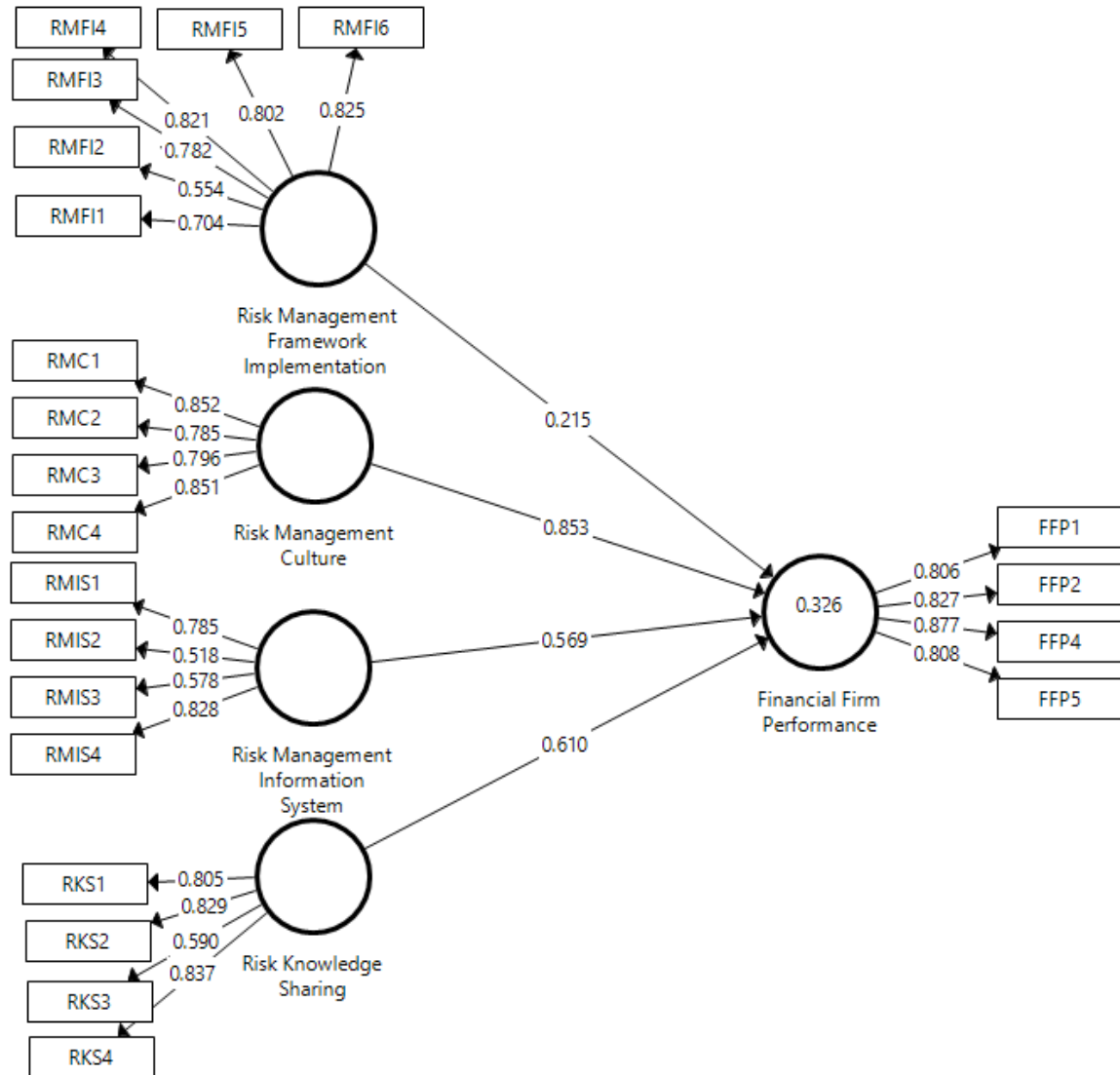


Figure 2: The Measurement Model

Discriminant validity is simply the magnitude to which a construct in a study is distinct from other constructs (Duarte & Raposo, 2010). Following Fornell and Larcker (1981), this study assessed the discriminant validity by comparing the correlations among the variables with square roots of average variance extracted (AVE). They proposed that to attain discriminant validity, the square root of each construct’s AVE should exceed the correlations for any other constructs. Table 3. compared the square root of AVE (values in boldface) with the correlations of the latent constructs. Thus, the study has achieved the discriminant validity of all the construct (Hair, Ringle, & Sarstedt, 2011).

Table 2: Factor loading, AVE, CR

Constructs	Loadings	Average Variance Extracted AVE	Composite Reliability (ρc)

<b>RMFI</b>		<b>.588</b>	<b>.895</b>
RMF1	.704		
RMF2	.544		
RMF3	.782		
RMF4	.821		
RMF5	.802		
RMF6	.825		
<b>Risk Management Culture</b>		<b>.525</b>	<b>.813</b>
RMC1	.852		
RMC2	.785		
RMC3	.796		
RMC4	.851		
<b>Risk Management Information System</b>		<b>.553</b>	<b>.830</b>
RMIS1	.785		
RMIS2	.518		
RMIS3	.578		
RMIS4	.828		
<b>Risk Knowledge Sharing</b>		<b>.516</b>	<b>.761</b>
RKS1	.805		
RKS2	.829		
RKS4	.590		
RKS5	.837		
<b>Financial Firm Performance</b>		<b>.515</b>	<b>.809</b>
FFP1	.806		
FFP2	.827		
FFP4	.877		
FFP5	.808		

Table 3:

*Independent variables correlation and Square root of AVE*

<b>Constructs</b>	<b>FP</b>	<b>RMFI</b>	<b>RC</b>	<b>RMIS</b>	<b>RKS</b>
<b>FP</b>	<b>.847</b>				
<b>RMFI</b>	-.059	<b>.717</b>			
<b>RMC</b>	-.043	.028	<b>.718</b>		
<b>RMIS</b>	.189	.127	.033	<b>.744</b>	
<b>RKS</b>	.329	.148	.056	.253	<b>.841</b>

### 4.2 The Structural Model

The present study also applied the standard bootstrapping procedure with 500 bootstrap samples with the original number of the sample data to assess the significance of the path coefficients (Hair *et al.*, 2014; Sarstedt *et al.*, 2014). Sharma and Kim (2013) reported in a simulation study that PLS-SEM achieve convergence at lower sample size using 500 iterations. Figure 3 shows the structural model for the direct relationship between the exogenous variables and the endogenous variables.

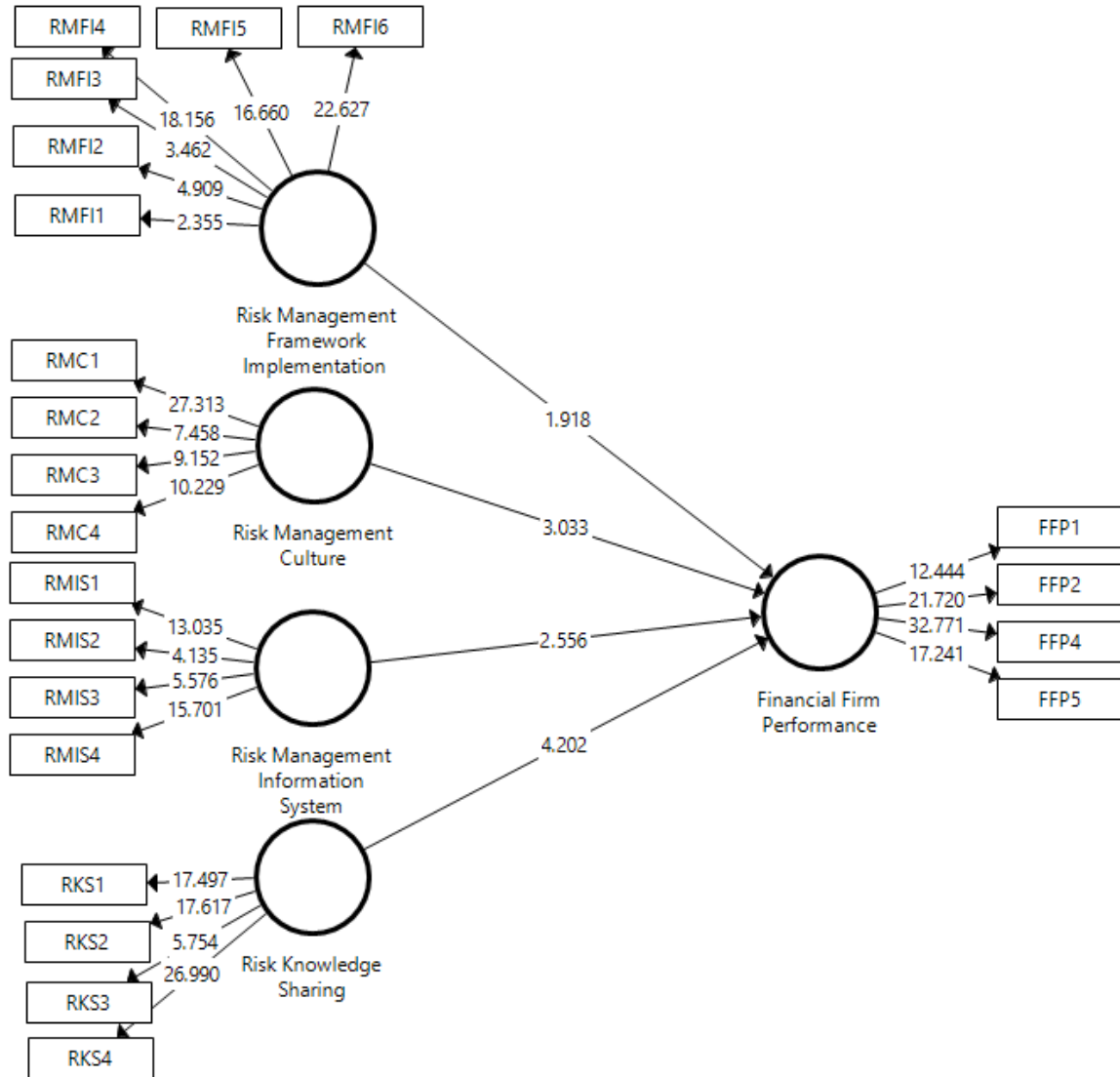


Figure 3: The Structure Model

The bootstrapping process had aided the determination of the strength of structural path relation for the test of hypotheses. The model structural assessment starts with the examination of the direct relationships between the study variables. The researcher determined the path coefficients by running PLS-SEM Algorithm while the significance of the path coefficient was assessed through PLS-SEM bootstrapping process. The study estimated the structural model in two stages. First, the study focused on the direct relationship between the exogenous variables and the dependent variables (Ha1-Hb3) Table 4 presents the path coefficients, t-statistics, P-values, and decision.

Starting with the first Hypothesis (Ha1), the results of the analysis revealed that risk management framework implementation has significant impact on on firm performance ( $\beta=.186$ ;  $t=1.918$ ;  $p<.01$ ). Thus, the study supported the first hypothesis. The results of the second hypothesis (Hb1) indicated that risk management culture has

significant impact on firm’s performance ( $\beta = .084$ ;  $t = 3.033$ ;  $p < 0.1$ ). Hence, Hb1 is supported. Again, the result in Table 4 revealed a significant positive relationship between risk management information systems and firm’s performance ( $\beta = .215$ ;  $t = 2.556$ ;  $p < .01$ ) providing evidence to support the hypothesis (Hb2). Likewise, the study provides evidence to support the fourth hypothesized relationship (Hb3) that risk knowledge sharing positively influence firm performance ( $\beta = .123$ ;  $t = 4.202$ ;  $p < .05$ ), hence the hypothesis is supported.

Table 4:  
*Results of Hypotheses Testing*

Hypothesis	Relation	Beta		T Value	P Value	Decision
		Value	STD Error			
Ha1	RMFI -> PERF	.186	.053	1.918***	.000	Supported
Hb1	RMC -> PERF	.084	.059	3.033*	.079	Supported
Hb2	RMI -> PERF	.215	.054	2.556***	.000	Supported
Hb3	RKS -> PERF	.123	.058	4.202**	.018	Supported

**Note:** \*\*\*Significant at 0.01 (1-tailed), \*\*significant at 0.05 (1-tailed), \*significant at 0.1 (1-tailed)

The R<sup>2</sup> value range between 0 and 1. The closer the R-square to 1 the more the variance explained. However, the acceptable level of R<sup>2</sup> depends on the research discipline. Hair, Sarstedt, Ringle, & Mena, (2012) contended that R<sup>2</sup> value of .2 is measured high for some social science researchers. Cohen (1988) categorized the R<sup>2</sup> value of .02, .13, and .26 as weak, small and substantial respectively. Table 5 presents the R<sup>2</sup> value of the endogenous latent construct. In the present study, the result shows that the R<sup>2</sup> value of firm performance (.321) is substantial. The value indicated that the nine variables together predict 32.70% of the variation in firm performance.

Table 5:  
*Variance Clarified*

Endogenous Variable	Variance Explained R <sup>2</sup>
Firm Performance	0.327

## 5. Discussion and Conclusion

The first objective of this study is to examine the influence of risk management framework implementation on firm performance. In this present study, risk management framework implementation is conceptualized as a structure that provides the context and the methods to deliver risk management objective of an organization. It explains the processes and the procedures for strengthening risk management strategies in an organization with a view to increasing firm performance. Risk management framework implementation is one of the essential factors that signal the implementation of risk management in organizations (Dafikpaku, 2011; Thornton, 2009).

The second hypothesis (Hb1) stated that risk management culture is positively related to the performance of government institutions in Abu Dhabi. The study conceptualizes risk management culture as a system that collects, stores and disseminates risk information to various business unit to support business operations. As expected, the PLS regression result revealed a significant relationship between firm risk culture and the performance of government institutions. This finding suggests that firms with positive risk culture are more likely to have a more robust risk management program that will effectively improve firm performance. Congruent to the result of this study, previous scholars have shown that risk culture positively influences firm performance (Ernst and Young, 2014; Kimbrough & Componation, 2009; McShane *et al.*, 2011; Ngo & Loi, 2008; Uz Kurt *et al.*, 2013). Nursing a solid risk culture within a business firm is fundamental to a corporate sector that is continually faced with vulnerabilities (Abd Razak *et al.*, 2016). The study concluded that there is the need for firms in the government organisation to pay special attention to the development of positive risk culture within their domain.



Secondly, the present study also hypothesized that risk management information system is positively related to firm performance (Hb2). Drawing from the agency theory, Ravichandran *et al.* (2005), risk management information capability is an important strategic resource that gives a firm competitive edge. The ability of a firm to manage fortuity depends to a large extent on available information at its disposal. Hence, the finding supports the theory. Again, the firms need to put in place specific data management infrastructure that will ease risk management strategies.

Thirdly, with respect to the fourth hypothesis (Hb3), as presumed, the PLS path modeling results revealed that risk knowledge sharing significantly influences firm performance. The study operationalized risk knowledge sharing as an organizational strategy that facilitates the management of fortuities in the organization through the exchange of risk knowledge among different business units. This particular result is consistent with existing research on knowledge sharing (Hartono & Sheng, 2015; Hora & Klassen, 2013; Liao *et al.*, 2011; Rehman *et al.*, 2015; Rodriguez & Edwards, 2009b), who reported that knowledge sharing has a positive influence on firm performance. More specifically, some of these studies suggested the need for firms to put in place organizational systems that encourage and enhance knowledge sharing and acquisition. In this regard, risk knowledge dissemination typically enhances risk management capabilities and improve operating efficiency. Therefore, knowledge sharing as a strategic resource, if fully utilized may lead to better firm performance.

On the overall, the R<sup>2</sup> value (32.70%) for this study falls on the substantial category as suggested by Murphy, Myers and Wolach (2014). The R<sup>2</sup> value for this study is relatively within the range of some related risk management strategies studies that reported low R<sup>2</sup> value (Li, Wu, Ojiako, Marshall, & Chipulu, 2014; Manab & Ghazali, 2013; Sekerci, 2013). Similarly, the effect size (0.046) of the independent variables on the dependent variable was categorized as small based on Cohen (1988) criteria. This indicates that other factors apart from risk management strategies may also exert some influence on the performance of government institutions in Abu Dhabi. Getting a risk management framework implementation though necessary may not be a sufficient condition for the risk management strategies to be effective in a way that it will positively influence performance. Further, the results of the descriptive indicated that only 37.40 percent have fully implemented risk management strategies while 36.80 percent and 25.80 percent are at the partial and initial implementation stages respectively. This might inform some of the reasons of low effect size as almost half of the study sample are at the initial stage of risk management framework implementation.

## 6. Contributions of the Research

The aftermath effects of the global economic meltdown have continued to pose a serious challenge to effective operations of government institutions. Risk management strategies has become a central strategy that is viewed to counter the effect of business risk through a single framework that holistically put risks in proper check. In particular, the risk concern is huge in the financial sector given the quantum of risks that surround the industry. Considering the findings of this research effort this study is of great importance both in terms of practical, theoretical and methodological implications.

The findings suggest that risk culture is a critical success factor that drives firm performance. While risk management framework implementation is critical to effective risk management it is not sufficient condition for effective implementation of risk management. To complement risk management framework risk culture has been recognized as an important element that leads to an effective and efficient risk management strategies that improve firm performance. A firm with positive risk culture is more likely to put in place a robust risk management strategy. Hence, it is recommended that a successful risk culture model needs to be put in place by government institutions to complement risk management framework for better firm performance. Regulatory agencies need to formulate policies that will instill positive risk culture in the Abu Dhabi.

Further, the study has established that risk management information system and risk knowledge sharing are important success factors that influence firm performance. It means for the government institutions to efficiently manage risk, government institutions require a well-functioning database. Hence, an effective management information system is required to enable them to analyze the frequency and severity of risk exposures. Again, government institutions must recognize the importance of risk management information to effectively analyze risk and shield the firm against uncertainties. To achieve better firm performance, government institutions should be encouraged to put in place a robust information management system for a comprehensive risk analysis

and reporting. In addition, it is recommended that the government institutions need to put in place an internal risk knowledge sharing as a strategy that will improve staff capabilities to handle complex firms' operations. Conclusively, the study identifies risk management framework and risk management success factors (risk culture, risk management information, risk knowledge sharing) as critical to improving firm performance. Hence, considering these variables together may lead to an efficient risk management strategy capable of improving firm performance.

## 7. Limitation and Suggestions for Future Research

The limitations of this study relate to the issues of self-reported measures which may lead to common method variance problems (Podsakoff *et al.*, 2003). Even though the result of Harman's single factor technique revealed that does not exist, future studies may collect data from both regulatory agencies in addition to the government institutions to mitigate the problems of self-reported measures. another possible weakness of this current study could be traced to the fact that the study examines only the relationship between risk management framework implementation, risk management success factors, and firm performance. This current study has not examined the level of maturity of the risk management practices in the Abu Dhabi. Future studies might look at the possibility of using a capability maturity scale to gauge the level of risk management practices in the Abu Dhabi.

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