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Linking key Determinants of Risks Management Strategies and its Implementation on Abu Dhabi's Municipalities

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Abstract

Risk management strategies (RMS) are a systematic way of assessing risk exposure within the institution. It is also a comprehensive tool and systematic mechanism to predict the likelihood and impact of events, including unexpected occurrences. The objective of this study is to examine the key determinants of RMS implementation amongst the municipalities in Abu Dhabi. This research adopted a quantitative orientation to analyze the data obtained from the questionnaire distributed to the three main municipalities in Abu Dhabi via their Risk Management Division. The results of this study are quite encouraging as a number of variables have relationships with RMS implementation. This research have significant implications for stakeholders such as top management of public sector including internal auditors, audit committee, standard-setters or even regulatory bodies and academician in Abu Dhabi. The current study is significant as it helps shed light on the relative importance of the leadership, operating framework, governance mechanism and compliance constructs on RMS implementation in the public sector and more especially in Abu Dhabi's municipalities.

Keywords: *Risk Management Strategies, Operating Framework, Compliance, Public Sector, Abu Dhabi*.

Introduction

RMS is an important institutional tool for corporate ventures to resolve the fundamental issues in terms of organizational operations and strategic planning. Without adequate or sufficient information on RMS, the economics of scale would be affected and directly give an adverse effect on the organizational development cycle. In terms of industrial development in general, RMS can assist in making good decisions (Johnson et al. 2005; Johnson and Priest 2008; Thaler and Priest 2014; Thaler and Levin-Keitel 2015). In addition, RMS would also eventually help the community to ensure better control and continuous adherence to the national code of corporate governance, simultaneously increasing customers' and investors' confidence to sustain or continue the organizational relationship (Krieger 2013). All these resulted from the companies' ability in mitigating the potential organizational issues by using adequate risk management processes and system intervention. This study is a much needed attempt to present a comprehensive assessment of the key possible factors that have a significant effect on the RMS implementation. This study enables the examination of specific key determinants which can be used to establish an RMS implementation.

Previous researchers on the RMS have identified a few variables or key contributors to the success of RMS, such as board of directors (BOD), chief risk officers (CRO), institutional leadership, information technology (IT) and role of internal auditor (Benson et al. 2013; Moss and Newig 2010). There are other

key independent variables influencing RMS, namely, corporate governance, institutional ownership, size, technology, globalization, risk manager, shareholder value, internal audit, stakeholder pressure, good organizational practices and improved decision-making.

The manual collection of risk data can be very time-consuming. Some institutions still adopt a multiple spreadsheet to gather and assess information on risk which can be tedious and ineffective. The data then becomes a proactive risk control by the time that information is returned to the responsible risk control department. When the data is manually collected, process owners have no option but to allocate their time to evaluate and review paperwork rather than the actual task of managing their risks within their circle of concern (Sadgrove, 2016).

The issue of RMS has received a great deal of attention from most organizational entities (public and private limited) worldwide, including in Abu Dhabi (Al-Farra, 2014). This is because the failure to manage risk can lead to a significant loss of the current organizational portfolio, market confidence and stakeholder value (Mohamed, El-Shorbagy, Chowdhury, Kizhisseri, Nawaz, McDonald, & Tompkins, 2016). Hence, there is a need to constantly mitigate organizational risks by measuring and monitoring opportunities and risks and reporting the findings to the management. To recapitulate, the core aim of this study is to examine the key determinants that affect RMS implementation in the Abu Dhabi context (Aleisa, & Al-Zubari, 2017). In addition, this study intends to examine the key determinants and implementation of RMS in Abu Dhabi. Based on the above discussion, the following research question is proposed: What are the key determinants that affect RMS implementation?

Risk Management Strategies

Makomaski (2008) defined RMS as an avenue for executive decision process and technically addressing multiple or variation in company goals. The UK Institute of Internal Auditors (Lorenzoni et al. 2015) defines RMS as a comprehensive framework and rigorous process across the organization for risk management practices. It covers the core principles of risk management process, ranging from identifying, assessing and reporting on opportunities and threats which directly may affect the achievement of corporate objectives as a whole.

The Risk Management Strategies involves certain fundamental concepts which can be summarized as follows: (1) a continuous process for managing uncertainties entirely within the organizational entity; (2) affected by intended user at multiple stages within an organization; (3) useful and adaptable in strategy planning; (4) applicable across the organization including but not limited to risk portfolio; (5) address or determine potential events which eventually affect the entity and to mitigate risk within its risk appetite; (6) ability to offer practical organizational assurance to the BODs and senior management; and (7) geared to the achievement of common goal-setting which are objectively sound compared to others. Other measurements include: (1) increased risk awareness leading to the reinforcement of RMS; (2) periodic risk assessment to determine changes in a company's risk profile and performance which can increase RMS implementation; and (3) frequent review by the BODs, risk management team to discuss risk management strategy which can lead to increased RMS implementation (Muller, 2017; Hopkin, 2018; Warner, & Sullivan, 2017).

Leadership

Leadership is the fundamental role played by leaders in managing and leading an organization by focusing on the ultimate vision, mission, strategy and tactics in growing the business. The researcher focuses on the BOD, senior management and the CRO in ensuring the success of RMS implementation. This is because RMS implementation depends on continuous support and cooperation from every party in the organizations. Barton et al. (2002), Walker et al. (2002), Eick (2003), Kleffner et al. (2003a; 2003b), and

Pagagh and Warr (2007) argues that firms with greater institutional ownership or stakeholders face greater challenges to set up measures that are needed in the RMS implementation.

Board of Directors

BOD is a platform for institution to undertake the role of determining organizational and organizational development direction, setting appetite policy, establishing corporate values as well as ascertaining the right resources for the organizational structure decided upon by the management group (Al Mansoori, Yazid, Khatibi, & Azam, 2018). Berghe and Levrau (2004), in their review, pointed out that board composition, leadership structure and size are the main requirements for ensuring a good and high quality BOD.

According to Harrison (1987), the focus of the BOD committees should be more on strategic roles in terms of advising and planning the organization besides specific monitoring function of the board by the nomination, remuneration and audit committees. Board composition is distinct in two different perspectives as follows: (1) the function of the board and corporate performance is determined by the number of directors; and (2) board performance can either be positive or negative depending on the size of the board. Thus, the following hypothesis is proposed:

H1: The BOD has positive effect on RMS implementation

Senior Management Commitment

Senior management commitment is an important group of decision makers who have a higher level of authority to shape the business (Reiche, 2010). The researcher argues that senior management must be responsible for looking into: (1) establishing a common risk management policy or vision for improving the organization; (2) encouraging other managers to make process improvements; (3) supporting the process by both word and deed; (4) providing resources; and (5) actively addressing organizational incompetence. Barton et al. (2002) stated that senior management commitment is a precondition for an organization to implement RMS successfully. Thus, the following hypothesis is proposed:

H2: Senior management commitment has positive effect on RMS implementation

Chief Risk Officer

CRO is a person who has high integrity, is well versed in industrial experience, has the credibility to engage and facilitate with leaders and ability to advise top managers (Gilson, & Milhaupt, 2009). It can be reiterated that the CRO has a holistic function to establish risk function and is primarily tasked to control and monitor the RMS implementation while working with other managers on reporting the relevant risk information vertically and horizontally. Mikes (2008) confirmed that current practices suggest that a CRO is not characteristically derived from the level of existing risk managers.

This study looks into the commitment of the CRO to RMS implementation based on several characteristics: (1) frequently engaging and facilitating the executive management to further integrate the risk management portfolio into daily activities; (2) formulating a comprehensive and standardized RMS framework and model for the organization; (3) preserving or sustaining a cost-benefit requirement for RMS; (4) continuously educating stakeholders on RMS practices within organizational operations; (5) working hand-in-hand with unit leaders in making sure that risk assessment is covered in the overall company-wide action and organizational strategy planning. Thus, the following hypothesis is proposed:

H3: CRO has positive effect on RMS implementation.

Operating Framework

The researcher defines operating framework as the outline of company policies which is generally described as corporate management structure. These include guiding principles on behavior, employment and promotion and contain several other general guidelines for all employees to follow. The operating framework refers to the procedures for managing workflow, policies for bidding for contracts and allocating assets to company divisions. An organization is required to develop an operating framework for risk management to achieve specific goals.

RMS Policy

RMS policy is a set principle, rules and guidelines formulated or adopted by an organization to reach its long-term goals, typically published in a booklet or any other form that is widely accessible (AlNuaimi, Shaalan, Alnuaimi, & Alnuaimi, 2011). The RMS policy is generally designed to influence all major decisions and actions within the boundaries set. However, procedures and specific methods are employed to translate policies into action in day-to-day operations of the organization. In other words, the establishment of RMS policy will ensure that a point of view held by the governing body of an organization is translated into steps or RMS programs. Thus, the following hypothesis is proposed:

H4: The RMS Policy has positive effect on RMS implementation

Process Methodology

Process methodology is a common framework for understanding the cyclical, ongoing nature of processes. It also analyzes the existing process for identifying improvement opportunities (Hopkin, 2018). The methodology further guides the owner through process improvement implementation in conjunction with the risk management process, which includes risk identification, risk assessment, risk treatment, risk measurement and risk reporting cycle. Olsson (2007) stated that RMS process methodology ensures the success of RMS implementation, considering there are other factors, such as suitability and acceptability of the risk management process to the organization and its members, which may limit the RMS implementation.

Thus, the following hypothesis is proposed:

H5: The process methodology has positive effect on RMS implementation

Risk Assessment Tool

As suggested by the Sarbanes-Oxley Act's requirements (COSO, 2004), this study defines RAT as an RMS solution which provides a standard framework for risk management processes, which include identifying, controlling and mitigating risk across the organization. In this study, the researcher views RAT as the basis for aggregating risk assessment, which covers data analysis and producing risk discipline workflows to ensure the processes are automated and synchronized. This study views that RMS implementation requires a formal governance mechanism.

Apparently, it is highly geared towards a strong senior level manager to administer and lead an organization's RMS framework with specified corporate risk policy, strategy alignment and centralized function with the ultimate role being to ensure the success of RMS implementation. Hence, the responsibility for RMS should be clearly ascertained and formally assigned to players in the existing governance structure. Thus, the following hypothesis is proposed:

H6: The RAT has positive effect on RMS implementation.

Governance Mechanism

The success of RMS implementation also depends on good governance mechanism (Banham, 2000). Business enterprises should give more priority to the staff member' dedication and standard structure of RMS governance based on the degree of sophistication in risk management, business expertise, inherent risk profile, analysis of size, complexity and the nature of their activities and the capacity to absorb the additional workload within existing structures (Mikes, 2005). Large organizations, with sizeable and significantly inherent risk exposure, require distinct and diverse operations (Anthony, 2001). In addition, a sound and dedicated central risk governance resources and the establishment of a formal RMC is required. The magnitude of work to be carried out would justify the need for such a governance mechanism. Although some elements of RMS governance exist, the leadership behavior and accountability in the implementation process, communication line and reporting might change the predicted outcome (Karen & Ian, 2007). The organizations that implement RMS need to formalize leadership and all other roles and responsibilities. Thus, under the governance mechanism, hypotheses are developed under the element of AC, RMC and internal audit.

Audit Committee

As suggested by the Rothaermel, (2015), this study defines AC as an independent party within an organization to review the adequacy or strengths and weaknesses of an organization's internal control system. Sarens & Everaert (2009) defined effective AC as an independent committee which has high credibility, integrity and resourcefulness to safeguard shareholders' interest and ensure reliable reporting in terms of risk assessment and control environment through its diligent oversight function. Kalbers and Fogarty (1993) said that the effectiveness of an AC's oversight responsibilities can be measured by five dimensions: (1) reliability of financial reporting; (2) effectiveness of internal audit function; (3) organizational risk management efficiency; (4) achievement of regulation practices; and (5) reliance on internal auditing practices. The Blue Ribbon Committee (1999) illustrates the role of AC oversight as ensuring timely and high quality disclosure of financial and other information to the board and public market, having internal controls and independence and fraud prevention and detection are promptly handled with transparency and accountability. Thus, the following hypothesis is proposed:

H7: The AC has positive effect on RMS implementation

Risk Management Committee

As suggested by KPMG (2001), this study defines RMC as a party responsible for overseeing, reviewing and monitoring the risk management practices and implementation, comprising core components of RMS processes, strategies, compliance and controls, including financial and non-financial risk exposures. This committee is important for the BOD in discharging their management responsibility in terms of RMS practices within the organization. Another aspect of RMC is that as a board sub-committee, its function is also to offer RMS education and establish buy-in for risk management strategy, developing ownership and reviewing the risk report at board level. Thus, the following hypothesis is proposed:

H8: The RMC has positive effect on the RMS implementation

Internal Audit

As suggested by the Hopkin, (2018), this study defines internal audit as an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. Internal audit provides value-added services and consultancy review by ensuring a consistent disciplined approach to evaluate and improve risk management effectiveness, including the adequacy of internal control, risk management and governance processes. Thus, the following hypothesis is proposed:

H9: The Internal Audit has positive effect on RMS implementation

Compliance

In this study, the researcher defines compliance as an avenue for organizational entities to ensure full adherence to the standards, rules and regulations. Berenbeim (2004) noted that compliance is designated as an integral part of RMS; hence, an effective value-based system requires a dedicated reinforcement of compliance systems. The compliance function reviews that all relevant rules and regulations, applicable laws and code of practices are properly complied with.

Rules and Regulations

Regulators emphasize on the implementation of risk management and capital adequacy in the financial industry to protect the public from default payment (Khan, Al Kathairi, & Grib, 2004). From the perspective of the Abu Dhabi Global Market (ADGM), there is no specific law that makes RMS program mandatory in Abu Dhabi. The closest reference in the ADGM regulatory framework that demands to manage risk is in the Abu Dhabi Code of Corporate Governance (2015). Thus, the following hypothesis is proposed:

H10: The rules and regulations have positive effect on RMS implementation

Code of Practices

The code of practices is technically embedded under the corporate governance compliance code (AlNuaimi, Shaalan, Alnuaimi, & Alnuaimi, 2011). It is vital for the implementation of ERM. Aleisa, and Al-Zubari, (2017) indicated that the integration between corporate governance, risk management and compliance is required in order to achieve strategic objectives of an organization and at the same time maximize shareholders' value. This is supported by Rosen and Zenios (2001) that corporate governance is a critical requirement for ERM implementation. There are no ERM components that can be achieved without corporate governance compliance. The code of practices stabilizes the relationship between shareholders, BOD, top management and intended stakeholders. Ballou (2005) indicated that the organizations have to adhere to rules and regulations, the standard code of practices and standard listing requirements in relation to corporate governance and ERM implementation. Under the new listing rules and governance approach, the role of BOD become more important, which include setting business objectives and strategy, establishing value, developing internal policies, ascertaining risk appetite and performance monitoring (Qdais, 2003). This view is supported by Kleffner et al. (2003a) and Deloitte (2004). Kleffner et al. (2003a) discovered that the Code of Business Conduct become more important related to risk management activities and has strong influence on ERM implementation within the organizations. Thus, the following hypothesis is proposed:

H11: The Code of Practices has positive effect on RMS implementation

Conceptual Framework

The development of a conceptual framework is an essential step in the research design as it defines the contributions of the study. Sekaran and Bougie (2010) defined conceptual framework as a logically developed framework which describes the relationship between the predicted variables associated to a problematic situation and identified through processes such as interviews, observation and literature review. According to Gupta (2011), a conceptual framework is an epistemology of constructivism that assumes a pluralist and relativist analysis of actuality. Sekaran (2010) stated that a conceptual framework is the premise on which the whole research project is based. Further, Cavana, Delahaye and Sekaran (2010) highlighted that a research framework represents a model of relationship between the factors flowing

logically from the citation of previous researchers in the problem area. This study attempts to examine the determinants of RMS implementation. A conceptual framework that illustrates the relationship between leadership, operating framework, governance mechanism, compliance, and RMS implementation is presented schematically below in Figure 1. The figure presents an overview of the conceptual framework tested in this study.

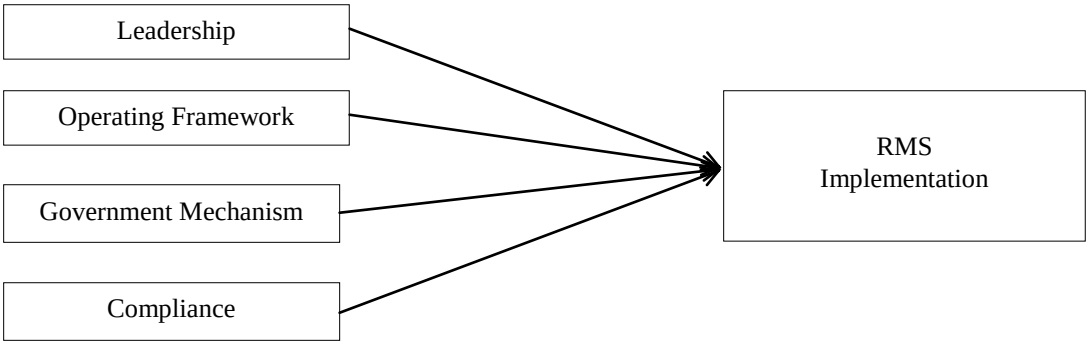

Figure 1: The conceptual framework tested in this study

Methodology

Based on the conceptual framework, 11 hypotheses are developed. The sample was 300 respondents from top management, based on the data as at 8th July 2018 provided by municipalities in Abu Dhabi. Approximately one and half months were spent for data collection process, which started from end of September 2018 until the middle of October 2018. To determine the significant level of dependent and independent variables, the data analysis techniques in this study are also discussed.

Sampling

This study utilized stratified random sampling as a sampling technique (Sekaran, 2003; Fowler, 2009; Babin & Griffin, 2010). It allows every element in the population to have equal probability of being chosen (Sekaran, 2003). It also has the least bias and offers the most generalizability (Sekaran, 2003). The questionnaires were distributed to the CRO or Head of Risk Management Division. The unit of analysis of this study is municipalities in Abu Dhabi. As at 8th July 2018, the total number of top management was 814 in three municipalities (Abu Dhabi City Municipality, Al Ain City Municipality, Al Dhafra Region Municipality) and a sample of 300 managers were randomly selected, as recommended by Sekaran (2003).

Measurement of Research Variables

Variables	Measurement	Support & Source
Board of Directors	Number of independence member Board Size composition Members of the board/total Frequent BODs meeting	Yazid, Rasid & Daud (2011)
Senior Management Commitment	Full Commitment Performance Availability of resources	Hoyt and Lienberg (2006)
Chief Risk Officer	Standardized Risk Model Cos- benefit on RMS Integrated Risk Procedures	Yazid, Rasid & Daud (2011)

RMS Policy	Compliance Effective Implementation Endorsement	Funtowicz & Ravetz (1994)
Process Methodology	Adequacy of process Effectiveness Continuous improvement	Preece and Preppard (1996)
Risk Assessment Tool	Data Efficiency Timely & up-to-date information Real-time data reporting	Ernst & Young (2008)
Audit Committee	Financial Reporting Internal Audit Effectiveness	Louis L. Goldberg (2008)
Risk Management Committee	Frequent RMC meeting Level of risk tolerance Level of risk awareness Linked with corporate strategy	
Internal Audit	Adequacy of internal control Effectiveness of control	Ahmad Sukri (2011)
Rules and Regulations	Full Compliance	Collier Burke (2006)
Risk Management Strategies	Percentage of key risks monitored Number of systemic risks identified Percentage increase in risk awareness	Steven Minsky (2012)

Data Analysis Techniques

This section discusses the data analysis technique adopted in this study. The data analysis software which was used in this research is SPSS version 22.0. The analysis consisted of three stages: (1) descriptive analysis and t-test; (3) multiple regression analysis; and (4) hierarchal multiple regression test. The technique for data analysis for this study is explained in the following subsections.

Validity Test

Gay and Diehl (1996), Sounders et al. (2007), and Zikmond et al. (2010) argued that validity can be considered as the extent to which the instrument measures what it is intended to measure. It is important to conduct validity test to ensure that the instrument used in this study shows that the outcomes are based on the required measurement. According to Sounders et al. (2007), there are three groups of validity test: (1) criterion-related validity; (2) construct validity; and (3) content or face validity. However in this study, the researcher undertook content validity and construct validity tests only. These two tests are considered adequate for determining validity of the research instrument (Preece & Peppard, 1996).

Descriptive Analysis

A descriptive report describes the phenomena of interest in a given situation (Sekaran, 2003). Descriptive analysis is also used to describe the frequency of distribution of the data, including cross-tabulation, specific research questions and its measurement. A total of 154 questionnaires were usable from the survey. All the variables were measured based on a five-point Likert scale. As reflected in Table 2, all the means are higher than three (3), ranging from 3.89 to 4.39. According to Hair et al. (2006), mean values can be categorized into three levels: low, medium and high.

This suggests respondents highly agreed to all variables and dimensions examined in this study. Table 2 shows that all leadership variables are rated as high, which are BOD, senior management commitment and CRO. As for operating framework, RMS policy, process methodology and RAT are also categorized as

high impact. As for governance mechanism, AC, RMC and internal audit are rated as high impact. This is similar to compliance constructs whereby the respondents' perception on variables is high. This also applies to the dependent variable, RMS implementation.

Table 2: Descriptive Analysis of the Variables

Independent Variables	Mean	Standard Deviation	Level
Leadership:			
Board of Directors	4.36	0.62	High
Senior Management Commitment	4.39	0.50	Medium
Chief Risk Officer	4.33	0.54	Medium
Operating Framework:			
RMS Policy	4.12	0.54	Medium
Process Methodology	4.35	0.52	Medium
Risk Assessment Tool	4.18	0.60	High
Governance:			
Audit Committee	4.10	0.76	High
Internal Audit	4.21	0.57	High
Risk Management Committee	3.89	0.75	High
Compliance:			
Rules and Regulations	4.26	0.58	Medium
Code of Practices	4.07	0.72	High
Risk Management Strategies Implementation	4.21	0.39	Low

Correlation Analysis

Correlation analysis was carried out to determine the relationship among the studied variables. Subsections 5.7.1 till 5.7.5 discuss correlation findings in detail.

Leadership

Table 3 presents the results of correlation analysis to examine the relationship between leadership and RMS implementation. It is found that all the dimensions represent leadership constructs are significantly associated with RMS implementation as follows: BODs ($r=0.338$, $p<0.01$); SMC ($r=0.587$, $p<0.01$); and CRO ($r=0.712$, $p<0.01$). The positive correlation coefficients (r) indicate the positive relationship among the variables. The increase in each dimension would also increase the RMS implementation.

Operating Framework

Table 3 exhibits the results of correlation analysis to examine the relationship between operating framework and RMS implementation. It can be seen that all dimensions that present operating framework construct have significant relationship with RMS implementation as follows: RMS Policy ($r=0.496$, $p<0.01$); Process Methodology (0.745, $p<0.01$); and RAT ($r=0.590$, $p<0.01$). The positive correlation coefficients indicate the positive relationship among the variables. The increase in each dimension would also increase the RMS implementation.

Governance Mechanism

Table 3 also exhibits the results of correlation analysis to examine the relationship between governance mechanism and RMS implementation. As exhibited in Table 3, all the governance mechanism factors are

significantly related to RMS Implementation as follows: Internal audit (r=0.636, p<0.01); AC (r=0.595, p<0.01); RMC (r=0.607, p<0.01). The positive correlation coefficients indicate the positive relationship among the variables. The increase in each dimension would also increase the RMS implementation.

Compliance

Table 3 exhibits the results of correlation analysis to examine the relationship between compliance and RMS implementation. Table 3 illustrates that both compliance factors are also significantly related to RMS implementation; Rules and Regulation (r=0.585, p<0.01); and Code of Practice (r=0.604, p<0.01). The positive correlation coefficients indicate the positive relationship among the variables. The increase in each dimension would also increase the RMS implementation.

Table 3: Relationship among Variables

	RMS	BOD	SMC	CRO	EPOL	PROM	RAT	IAR	ACR	RMC	RNR	COP	RC
RMS	1												
BOD	.338**	1											
SMC	.587**	.462**	1										
CRO	.712**	.263**	.578**	1									
EPOL	.496**	.309**	.339**	.401**	1								
PROM	.745**	.376**	.545**	.586**	.568**	1							
RAT	.590**	.219**	.407**	.468**	.215**	.465**	1						
IAR	.635**	.226**	.541**	.592**	.282**	.564**	.346**	1					
ACR	.595**	.196*	.397**	.347**	.212**	.493**	.742**	.312**	1				
RMC	.607**	.105	.290**	.327**	.206*	.451**	.529**	.401**	.610**	1			
RNR	.585**	.351**	.358**	.378**	.430**	.512**	.283**	.346**	.329**	.461**	1		
COP	.604**	.256**	.318**	.361**	.364**	.387**	.272**	.201*	.261**	.254**	.525**	1	
RC	.500**	.188*	.309**	.303**	.249**	.376**	.262**	.129	.234**	.379**	.327**	.474**	1

**p<0.01
*p<0.05

The Effect of RMS Determinants on Risk Management Strategies

It can be found in Table 4 that all factors under operating framework construct significantly influence RMS implementation. They are RMS policy (B=0.155, t=2.317, p<0.05); Process methodology (B=0.177, t=3.306, p<0.01); and RAT (B=0.142, t=2.803, p<0.05). Hence, the results support H4, H5 and H6. The three hypotheses are supported and accepted.

Table 4 also indicates the result of multiple regression analysis to examine the effect of governance mechanism on RMS implementation. All factors under governance mechanism construct significantly influence RMS. They are Internal audit (B=0.178, t=3.870, p<0.01); AC (B=0.128, t=2.337, p<0.05); and RMC (B=0.178, t=3.837, p<0.01). Hence, the results support H7, H8 and H9. The three hypotheses are accepted. Results of multiple regressions also revealed that both factors under compliance constructs significantly predict RMS. They are rules and regulations (B=0.126, t=2.564, p<0.05); and code of practice (B=0.284, t=7.066, p<0.01). Hence, the results support H10 and H11. These two hypotheses are supported and accepted.

This research is based on a quantitative method and the hypotheses are analyzed by using multiple regression analysis. Eleven hypotheses were tested based on the Research objective: To examine the key determinants of RMS implementation in Abu Dhabi In the first research objective, out of 11 hypotheses, 10 variables tested were found to be supported and significantly related. These include the leadership construct

(senior management commitment, CRO), operating framework construct (RMS policy, process methodology, RAT); governance mechanism construct (AC, RMC and internal audit) and compliance construct (rules and regulations and code of practices).

Table 4: Effects of RMS determinants and RMS implementation

RMS Determinants	B	t	Sig.
Board of Director	.010	.266	.790
Senior Management Commitment	.117	2.365**	.015
Chief Risk Officer	.233	4.808***	.000
RMS Policy	.155	2.317	.190
Process methodology	.177	3.306***	.001
Risk Assessment Tool	.142	2.803	.423
Internal audit	.178	3.870***	.000
Audit committee	.128	2.337**	.021
Risk management committee	.178	3.837***	.000
Rules and regulations	.126	2.564	.573
Code of practice	.284	7.066***	.000
R^2	0.848		
F	71.851		
Sig.	0.000		

Notes: ***p<0.01, **p<0.05, *p<0.1

Research Hypotheses Test Results

The above variables are significantly supported and accepted and all the variables have a positively significant relationship with RMS implementation (excluding BOD under leadership construct). Table 5 shows the details of the results.

Table 5: Summary of Hypotheses Test

Hypothesis statements	B	Sig.	Assessment
H1: The BOD has positive effect on RMS implementation	.010	.190	Not Supported
H2: Senior management commitment has positive effect on RMS implementation	.117	.015	Supported
H3: CRO has positive effect on RMS implementation	.233	.000	Supported
H4: The RMS Policy has positive effect on implementation	.155	.030	Supported
H5: The process methodology has positive effect on RMS implementation	.177	.001	Supported
H6: The RAT has positive effect on RMS implementation	.142	.023	Supported
H7: The AC has positive effect on RMS implementation	.178	.000	Supported
H8: The RMC has positive effect on the RMS implementation	.128	.021	Supported
H9: The Internal Audit has positive effect on RMS implementation	.178	.000	Supported
H10: The rules and regulations have positive effect on RMS implementation	.126	.043	Supported
H11: The Code of Practices has positive effect on RMS implementation	.284	.000	Supported

Discussion

This study attempts to provide concrete justification, support and evidence on the need to identify which factors of the four constructs, namely, leadership (BOD, senior management commitment and CRO), operating framework (RMS policy, process methodology and RAT), governance mechanism (audit committee, RMC and internal audit) and compliance (rules and regulations and code of practices) are associated or significantly influence the RMS implementation in Abu Dhabi municipalities.

The dependent variable in this study is the RMS implementation while the independent variables are categorized into four main constructs. The previous lessons learnt on the corporate scandals or financial distress events such as Enron and World Dot.Com, are a wake-up call for corporations to emphasize on the basic requirements of implementing good governance practices. Most of the root causes were mainly due to poor corporate governance and risk management practices. The internal failure of governance issues was actually the main reason for companies to implement and adopt the risk management framework (Al-Mashhadani, & Al Muraikhi, 2017). The RMS implementation can be materialized provided that the tone from the top and continuous monitoring for the entire processes are adopted throughout divisional levels within the organization and aligned with organizational strategies (Warner, & Sullivan, 2017).

This study is premised on the reason that some municipalities do not have a formal system in terms of RMS to mitigate their operational risks or even safeguard new ventures. This lack of mitigation controls could be due to a misunderstanding of the RMS methodology and techniques to steer the direction more appropriately (Aleisa, & Al-Zubari, (2017). That could also involve the quality of decision making where the need to have a conducive risk portfolio instrument to assist in mitigating organizational risks and minimizing the impact from financial and operational destruction which unexpectedly occur due to wrong prediction of the financial model. The International Organizational for Standardization (ISO) which has introduced a new chapter of ISO31000 Risk Management Compliance acknowledges that organizations operate in uncertainty and an international risk management framework must be adopted by any associate independently (Hopkin, 2018).

In order to determine whether there is a significant relationship between independent variables and RMS implementation, the multiple regression analysis is used in this research. The results of this study are quite encouraging as a number of variables have relationships with RMS implementation. The independent variables which have significant associations or positive relationship with RMS implementation include senior management commitment, CRO, RMS policy, process methodology, RAT, AC, RMC , internal audit, rules and regulations and code of practices. Conversely, some variables are not significantly related to the dependent variable, such as BOD.

The independent variables which have significant associations or positive relationship with risk couture include senior management commitment, CRO, RAT, RMC and code of practice. Conversely, some variables are not significantly related to the dependent variable, such as BOD, RMS policy, process methodology, AC, internal audit, rules and regulations as well as code of practice.

The current study reveals that RMC is significantly supported and this finding is aligned with the previous research conducted by COSO of the Treadway Commission (1992, 2004), Hermanson (2003), and Selim and Mc Namee (1999). All of them suggested that the quality of internal monitoring is likely to be higher and significant when RMC exists compared to a situation when there is no RMC with respect to risk management.

Implications

This study attempts to provide significant theoretical and practical contributions to industrial practitioners, researchers and academicians, besides providing a model or best practice of RMS for municipalities in Abu

Dhabi which can be effectively implemented. The outcome ofthis research can improve the current state of RMS within industries, specifically municipalities. This study is also important for practitioners or corporate managers to test the contributions of the new variables besides the existing review by past researchers that could enrich RMS implementation. An effective RMS implementation will support the industrial community to ensure better control and adherence to the national code of corporate governance. In addition, it will also increase the customers' and investors' confidence to sustain the organizational relationship and to mitigate potential organizational issues if supported by adequate RMS processes. The methodology deployed in this study has some implications in the context of RMS implementation. This study supports the theoretical proposition by providing evidence on the key success factors of RMS implementation. Based on the data gathering and descriptive analysis, there is an addition contribution knowledge to this research in the area of RMS between the key determinants of RMS and RMS implementation. The results indicate that there are areas for improvement in terms of key success factors, i.e., leadership, operating framework, governance mechanism and compliance.

Several authors of previous studies have highlighted or provided explanation regarding the key factors associated with RMS implementation; however, only some have systematically studied RMS and the determinants of RMS by focusing on a few dimensions of operating framework, governance mechanism, leadership and compliance. Therefore, this study contributes to the empirical knowledge and literature in the area of leadership, operating framework, governance mechanism and compliance, in terms of RMS implementation in Abu Dhabi.

The current study examines the association of operating framework attributes and RMS implementation. Some new independent variables are included, i.e., RMS policy, process methodology and RAT. These variables are related to the risk management process and to enrich the operational system and increase the process of managing risk at optimum level. By including these new variables, more contributions are made to the extent literature and more evidence is provided on the effects of the operating framework on RMS implementation. In addition to this, RAT is also considered since the hypotheses show a positive relationship with RMS implementation. With the inclusion of a few variables, it has led to significant contribution to RMS implementation.

In the area of governance mechanism, all the independent variables contribute to the RMS implementation. The AC, RMC and Internal Audit show a significant relationship with the RMS implementation. The AC, RMC and internal audit are also part of good corporate governance practices. The AC and RMC must meet regularly with the CRO with regards to the company's RMS processes, controls and capabilities. The AC's role also includes responsibility for overseeing of certain aspects of risk management, including reviewing operational, reputational, legal and compliance aspects and the steps the management has to take, monitor and control risk exposure. The result indicates that a strong AC, RMC, internal audit function and accountability in the organization will ensure that RMS is effectively implemented with the guidance of a proper system, structure, processes and resource management requirements. The positive relationship has contributed to knowledge and it has opened an avenue for future research on RMS implementation.

This study makes theoretical and practical contributions for industrial practices, researchers and academicians, besides providing a proposed framework of RMS implementation for future research. To the academicians, this research justifies the use of the agency theory in the area of implementation in ensuring good corporate governance practices among municipalities in Abu Dhabi and also making sure that RMS implementation is ahead compared to the previous arrangement. All key determinants of RMS and RMS implementation are hypothesized, whereby it clearly indicates some significant and positive relationship. Hence, the findings could be useful as a feedback whereby the principals have the ability to counter any weaknesses within procedures or processes before a significant effect on the overall internal control system of the organization can be seen.

The results of this research have significant implications for stakeholders, such as professional practitioners, including internal auditors, top management, audit committee, standard-setters or even

regulatory bodies and academicians in Abu Dhabi. It provides relevant empirical data about RMS in public sector. To organizational practitioners, the study reveals the determinants that influence RMS implementation as follows: (1) internal auditors on their important role in adding value and support to strengthen the RMS framework; (2) board members, AC and RMC as independent parties to strengthen the corporate governance framework and the effectiveness of RMS; (3) standard-setters, in developing standards related to internal audit roles in RMS implementation; (4) regulatory bodies, e.g., the Security Commission in formulating guidelines on national best practices of corporate governance.

Limitations and Scope for Further Research

This study is merely focused on corporations or public organizations and all relevant stakeholders within public sector. Other important stakeholders, external auditors, tax auditors or legal compliance officers are not taken into consideration. Therefore, it is important to provide an avenue for these intended parties to give a real impact to the study as a whole.

Hence, focusing on the corporations without extending it to other important or relevant stakeholders may constitute a restriction or limitation of the study. In addition, this study does not take into consideration other variables, like financial and internal control system, organizational structure, social impact and governmental policy.

This research is limited because of the difficulty in studying the variables in a complex environment, such as municipalities in Abu Dhabi. Future research can consider reviewing the success or implication of RMS implementation in the context of small-medium industries and multinational corporations. A comparative study between private companies, multinational corporations and small-medium industries can be considered to examine the effectiveness or relevancy of RMS implementation. The aforementioned limitations therefore provide an opportunity to improve the study on RMS and its determinants in the future.

The ultimate reason for conducting this study is to identify the determinants that affect the of RMS implementation in Abdu Dhabi. The dependent variable in this study is RMS implementation, while the independent variables are categorized into four main components: leadership, operating framework, governance mechanism and compliance. It is suggested that research in the future extends this study by examining the following:

- The impact of financial and internal control systems on effective RMS implementation
- The relationship of effective RMS in association with corporate performance in terms of profitability, sustainability and liquidity
- Change in legal framework and governance rules towards effective RMS adoption in municipalities in Abu Dhabi.
- The risk awareness program to determine the effectiveness of corporate governance implementation in municipalities.
- Specific revision to examine the corporate governance and corporate performance as independent variables to determine the effectiveness of RMS adoption.

In addition, the suggestions or perhaps opinions of stakeholders, including the community or associates, external auditors, chief risk officer, and relevant authority must be considered in future research since these interested or intended parties are highly important for RMS implementation. Inevitably, the specific groups within the circle of influence or concern must be taken into consideration for RMS implementation within the corporation. Finally, future research can also look into conducting a comparative study between regions to discover the differences and similarities of organizations in terms of RMS development.

Conclusion

The outcome of this research reveals that there is a significant and positive relationship between RMS determinants and RMS implementation. The independent variables which represent leadership (senior management commitment and CRO), operating framework (RMS policy, process methodology and RAT), governance mechanism (AC, RMC and internal audit) and compliance (rules and regulations and code of practices) directly support the previous findings with the additional contributions to knowledge in the area of RMS implementation in municipalities in Abu Dhabi. The discussion of results is also followed by specific review of all hypotheses with some comparative analysis on the current study with past research. The results of this study provide further insight into the factors that have significant impact on RMS implementation in municipalities in Abu Dhabi.

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