Drivers to the Implementation of Risk Management Practices: A Conceptual Framework

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***Abstract*—The implementation of risk management (RM) practices in past research has shown to be diverse. Although many studies have attempted to explore the drivers to the wide variation of RM implementation, there is sparse conceptual framework which describes the linking between the RM implementation drivers with the implementation of RM practices. Therefore, this study focuses on understanding the influence of RM drivers particularly the corporate governance, compliance to rules and regulations, pressure from external auditors, firm and industry characteristics, internal factors, acknowledgment of RM potential benefits, emergence of new business trends, occurrence of risk events, and vulnerabilities of small and medium enterprises (SMEs). To understand the influences of the aforementioned drivers towards the implementation of RM practices, this study proposes a conceptual framework which extends the institutional theory and contingency theory by introducing the diffusion of innovation (DOI) theory into the present literature. Finally, this paper outlines the methodology of how an empirical research might be systematically conducted by using the proposed conceptual framework.**

***Index Terms*—diffusion of innovation theory, risk management drivers, risk management practices, SMEs.**

I. Introduction

Risk Management (RM) is a process of predicting potential risks that may be encountered by an organization and to develop appropriate strategies in order to deal with the exposure to the identified risks [1], [2]. The main components in RM process are risk identification, risk analysis and evaluation, risk controlling, and risk monitoring [3]-[5]. RM provides systematic and logical approach to decision making [5]-[8], cost reduction [6], [8]-[9], increased profits [7], [9], enhanced communication [5], [6], alignment towards company objectives and mission [6], [8], and protect company reputation as well as increase the stakeholder confidence [7]. According to reference [10] the implementation of RM also increases firm value. Moreover, RM improves customer relationship, provides useful insights, allows better managerial judgment, and improves quality and confidence of investment decision [5].

In this paper, the implementation of RM practices refers to the application of RM process towards the management of risks that have potential impact on an organization. The growing trend in the RM literature shows that RM practices in industrial settings tend to be categorized into formal and formal approach. For example, formal RM has not been widely practiced in Hong Kong [5]. Amongst RM consultants of North Ireland, there was an inclination to practice informal RM whenever possible [11]. In addition, Nokia and Daimler-Benz had once conducted an informal RM [12]. Overall, many companies adopt informal RM practices [13], [14] although RM practices have been implemented formally in most banks [15], [16].

It is convinced that the reasons for an organization to adopt between the formal or informal RM approach is due to the RM adoption drivers such as corporate governance, compliance to regulations, technology advancements, competitive advantage, corporate companies' failures, good business practice, complexity of risks, shareholder requirements, globalization, and improved communication [17]. On the other hands, the presence of Chief Risk Officer and internal auditor, strong support from top management, encouragement from the Board of Directors, types of firm, company turnover, company size, corporate governance, compliance to rules and regulations, and pressure from external auditors also play pivotal roles in the diverse implementation of RM approaches [18]. However, a company may also implement a RM practices due to the acknowledgement of RM potential benefits, emergence of new business trends, increased occurrence of risk events, and the awareness of company vulnerabilities which seemed to be overlooked in the present literature.

Based on the RM adoption drivers, the implementation of RM practices is dependent upon the firm and industrial factors, internal factors, and external factors [18]. Nevertheless, the current theoretical framework has ignored the influence of firm and industrial factors, and internal factors on the implementation of RM practices. This is because prior studies had focused on the

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institutional and contingency theory to explain the phenomenon of RM implementation as in [19]-[23]. The institutional theory explains that the organizations' desires to gain legitimacy and continual resource supports lead to the homogeneity among organizations [24]. The homogeneity develops through three types of mechanism which are coercive isomorphism, mimetic isomorphism and normative isomorphism [24]-[25]. Besides, the contingency theory suggests that a control system is specifically designed according to firm specific characteristics and environments [26]. This includes external environments, technology, company structure and size [21], [23], [26]. Thus, this paper attempts to bridge this gap by introducing the diffusion of innovation theory (DOI) [27] to incorporate the influence of innovation characteristics, communication and time factor on the implementation of RM practices in companies apart from the social system as included in the institutional theory.

According to reference [28]-[29] which argued that the studies on RM implementation is limited in developing countries, thus more studies could be performed to enrich the current literature. To the best of knowledge, only several studies were deep enough to touch on the tools and techniques used during the RM process was performed in developing countries such as [30]-[36]. Among these studies, only one was carried out in Malaysia. Furthermore, studies of small and medium enterprises (SMEs) are also lacking [37]-[40]. In contrast to previous studies, this paper recognizes the innovation characteristics, communication, and time factor in shaping the RM implementation. Therefore, this study proposed a conceptual framework of RM implementation which integrate the institutional, contingency and DOI theory to be examined in Malaysian automotive SMEs.

II. Risk Management Adoption Drivers

A. Corporate Governance

Reference [17] found that corporate governance and shareholder value to be the most important driver in RM adoption and implementation among the Malaysian public listed companies. This argument is aligned with [41] who claimed that RM components could not be attained without corporate governance compliance. Furthermore, there was a significant positive relationship between corporate governance practice and RM [42]. Moreover, [43] revealed that the current developments of corporate governance work as a catalyst for RM adoption. The varying degree of RM implementation across countries could also be attributed to different timing and standards of corporate governance introduced [6].

B. Compliance to Rules and Regulations

Among the reasons for adopting enterprise RM in Canada was the compliance with the Toronto Stock Exchange [6]. Whereas the introduction of the Revamped Listing Requirements of Bursa Malaysia in 2001 was established as an effort to amend the former code into a mandatory practice which must be complied by public listed companies [17]. On the other hands, the New South Wales government imposed a mandatory statement so that any new project and major capital assets activities which cost more than 5 million dollars comply with RM standard [44]. In German, large firms and SMEs implement RM practices due to KonTraG law and Basel II regulations respectively [38]. These examples show that some companies have to implement the RM practices on compliance basis.

C. Pressure from External Auditor

Companies audited by the Big Four auditors namely PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst & Young and KPMG had higher likelihood to deploy RM practice compared to companies not audited by them [45]-[46]. This is because the Big Four auditors pressured the companies to comply with RM regulations in order to maintain their good reputations [47]. In contrast, the audit firms regardless whether they are the Big Four auditors or not are equally effective in encouraging the RM practice to their clients [48]. Reference [49] further strengthen this argument by indicating that higher chance of enterprise RM adoption exists when a company is engaged with one of the Big Four auditors.

D. Firm and Industry Characteristics

The average RM users are large companies [10], [50], [51]. This finding is further supported by [10], [45], [48] who discovered that larger financial companies had higher inclination to build state-of-art risk management systems. Moreover, as described by [52], the adoption of RM practice was more dispersed among companies with high turnover. This is because it has been repeatedly proven that the high cost of RM hinders the implementation of RM practices [5], [53]-[56]. Thus, it is rational to believe that larger firms, in terms of larger assets, are more capable in launching the costly RM practices. On the other hands, financial firms (banking and insurance companies) were more likely to implement RM practices [6], [45], [48], [57].

E. Internal Factors

The presence of Chief Risk Officer had influenced the implementation of RM practices [45], [48], [52], [58]. In addition, the appointment of Chief Risk Officers who had advanced degree qualifications and possessed strong technical knowledge in RM results in more advanced RM implementation [59]. The support from the Board of Directors also played a crucial role in implementing RM [6] since the large amount of company resources required for the expensive RM practices need to be approved by the Board [58]. Similarly, reference [60] accentuated that sufficient motivation from the functional heads is required for the implementation of enterprise-wide RM. Furthermore, leadership of the chief executives, initiative of board of directors and recommendations from internal auditors were found to be significant determinants to enterprise RM adoption [61]. The poor implementation of RM practices has been attributed to managers' and administrators' strong skepticism about RM [62],

indicating the strong influence of managers on the implementation of RM.

F. Acknowledgement of RM Potential Benefits

Although the RM practices are not compulsory for some companies, the recognition of RM benefits could encourage them to adopt RM practices. A survey of companies in manufacturing and services sectors revealed that majority of respondents were convinced about RM benefits [60]. It has also been discovered that firm adopts RM because of the economic benefits as opposed to pressure from regulatory compliance [51]. Unlike banking and insurance sectors which receive strong pressure in achieving Turnbull, Basel regulations and Rating Agency's evaluation, gas and oil companies adopt enterprise RM for value-creating opportunity and good business practice [61]. Furthermore, a literature review by [63] exposed that firms implemented enterprise RM to reduce potential financial loss, increase business performance, as good business practice and enhance their competitive advantage, which are the potential benefits of RM. This implies that firms adopt RM basically based on their recognition of RM benefits.

G. Emergence of New Business Trends

The new business trends include outsourcing, reduction of suppliers, globalization and product variants [64]. Similarly, [65] listed nine current business trends comprise of outsourcing the manufacturing and R&D functions to suppliers, reduction of supplier base, globalization of supply chains, and reduction of inventory and lead time. [66] consistently described the new business trends as outsourcing and offshoring many of manufacturing and R&D activities, low cost countries outsourcing, inventory reduction, and better collaboration between supply chain members. Paradoxically, the adoptions of these strategies have resulted in emerging new supply risks and higher supply chain vulnerabilities [65], [67]-[69]. Therefore, it is strongly believed that the increased level of risk will as well spread the implementation of RM. Pertaining to lean manufacturing, [70] firmly stated that "the implementation of lean concepts within supply chains must be accompanied by supply chain RM concepts."

H. Occurrence of Risk Events

Several studies have associated risk management practice with risk events such as 9/11 terrorism attack, Hurricane Katrina [67], [69], [71], outbreak of SARS [67], [69], Enron and WorldCom scandals, and the United Stated sub-prime mortgage crisis [69], [72] which receive world-wide media coverage. The media indeed influences individual beliefs on the seriousness of a hazard [73] and risk perceptions [74]. Consequently, risk perceptions increase behavior motivation or the behavior to take protective action [75]-[77] which in this context, the implementation of RM practices.

I. Vulnerabilities of SMEs

With limited capital and assets [8], [78] the owner of small companies have higher level of risk perception compared to their larger counterparts [78]. A risk event which is considered less threatening to large organizations might be perceived as a great risk to SMEs due to limited resources, heavy reliance on one man as an owner and manager, high employee turnover [79], and inadequate management skill and training [8]. As a result, these vulnerabilities could naturally encourage the managers' of SMEs to practice RM. Additionally, RM becomes an essential interest of SMEs due to their prevalence to become insolvent [38], [39].

III. Theories

In previous studies, [19]-[20], [22] introduced the institutional theory whereas [21] proposed the contingency theory in explaining the phenomenon of RM implementation. Nevertheless, more recent study argued that the utilization of a single theory is insufficient to explain the current phenomenon [23]. Hence, the pluralism approach where both institutional and contingency theories are suggested to describe the factors that influence the implementation of RM practices. For this paper, the DOI theory is proposed to improve the present theoretical framework by including additional factors that drive the RM implementation.

A. Institutional Theory

Institutionalization exists when the management control system particularly RM practices in large number of organizations becomes highly homogeneous. The homogeneity may be achieved through the coercive isomorphic mechanism whereby political, regulatory or legitimacy pressures are exerted on organizations in the means of direct force, persuasion or invitation [24]. On the other hands, the mimetic isomorphism occurred in highly uncertain environment where organizations tend to replicate other organizations that they perceived as successful or more legitimate as role models due to the lack of proven solutions in dealing with a particular problem. The normative isomorphism, deals primarily about professionalization which is argued as stemming from formal education and training [24], [25], as well as conference, publication, personnel movement and experience [23].

B. Contingency Theory

This theory explains that the control system is dependent upon the firm size, technology, and environment [21], [23], [80]. Larger organizations have higher prevalence to implement more formal control system and employ specialists. Moreover, since communication is crucial in the effectiveness of an RM system, the level of communication technology advancement play a vital role in the implementation of the practices. Apart from that, the environment which refers to the central government policy emerged as a major driving force to implement RM practices due to the compulsory requirement for compliance.

C. Diffusion of Innovation Theory

Besides ideas and objects, innovations are also defined as practices [27]. This theory suggested four elements

which are innovation, communication, time and social system. In conjunction with the innovation, the innovation-decision is determined by the relative advantage, compatibility, complexity, triability and observability. All of these aspects except for complexity have positive relationship with the rate of adoption. The characteristics of the practices are the prerequisites to the implementation because practices which are not compatible with the existing systems and too complex may be difficult to be implemented.

When communication between adopters and potential adopters about the practices are high, the diffusion rate may increase subsequently. More efficient communication channel also helps an innovation to spread in wider coverage.

The time element refers to the innovation-decision process which is a period when a potential adopter first acknowledges the innovation until he adopts or declines it. This process comprises of five sequential steps which are (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. Every adoption starts with an awareness or knowledge about an innovation [27]. However, the unresolved problem of the lack of knowledge has led to the lack of RM implementation and adoption [44],[81]-[82].

The social system addresses the sub-elements of social norms and social structure. The social norms set an accepted standard of behavior which an individual is expected to perform [27]. Whereas, the social structure involves how the units in a social structure influence others in the same social structure to adopt or reject an innovation. As a result, the social structure affects the types of innovation decisions which consist of optional, collective or authority innovation-decisions.

The optional innovation-decision implies that individuals are the ultimate decision maker regardless the influence of others. Conversely, collective innovation-decision is the results of consensus among the members of a social system. Once the result of the consensus is obtained, all social units are obligated to follow the decision regardless of their own desires. The authority innovation-decision occurs when powerless individual social units have to implement the decision to adopt or reject an innovation based on the decision made by the more powerful, higher status individual called the authority.

IV. Proposed Conceptual Framework

The framework linking the institutional, contingency and DOI theory is presented in Fig. 1. The model is developed by using earlier studies from multi-disciplines such as management accounting, business continuity planning, corporate governance and risk management as the sources of theoretical foundations. Based on the discussion about the DOI theory, it becomes apparent that the current knowledge of RM implementation has been lacking. The characteristics of the practices, communication and time aspects have been neglected. Responding to this lacking, this study introduces the DOI theory into the current literature.

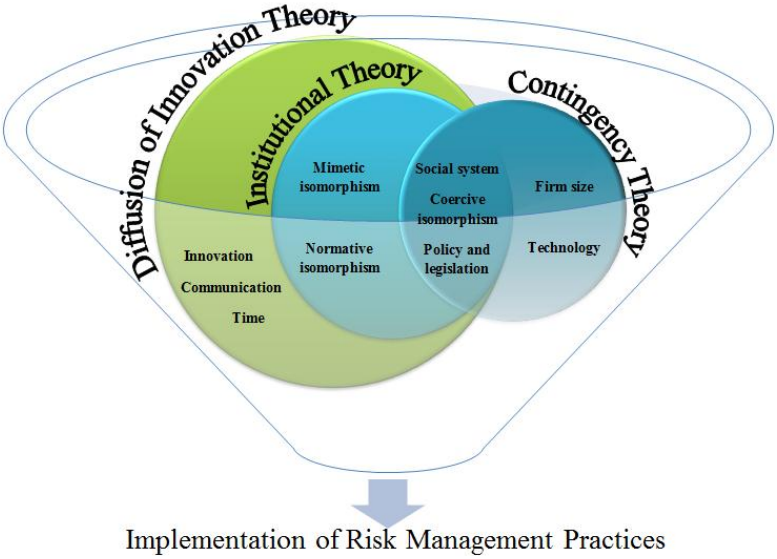

Figure 1. Conceptual framework.

According to Fig. 1, the DOI theory, institutional theory and contingency theory are intertwined to explain elements that shaped the approaches taken by companies in managing their risks. Through the DOI theory, the characteristics of the innovation, communication and time factors could help this study to understand the underlying drivers and perhaps, constrains to such decisions. Similarly, the institutional theory addresses the issue of interest through the use of three isomorphic change mechanisms namely the coercive, mimetic and normative isomorphism.

Apart from the influence of the policy and legislation which is very similar to the coercive isomorphism and authority innovation-decision in DOI theory, the contingency theory also highlights some possible explanations based on the firm size and technological advancements. Nevertheless, it is imperative to note that the proposed framework is not definite since humane

study is rather dynamic and almost impossible to be captured in a single research alone.

V. Methodology

The case study method is applied for this study because it is best used when (1) the research topic is at the preliminary or exploratory phase, (2) researcher aims to explore, describe or explain a phenomenon, (3) in-depth and detailed investigation is necessary, and (4) the research topic is contemporary and manipulation of relevant behavior is impossible [83]. The purposeful sampling enables researchers to gain variety of different perspectives of a situation and hence is adopted for this study [84].

In contrast to earlier studies which mostly focused on large companies, this study explores the SMEs in Malaysian automotive industry. Specifically, interviews are conducted with the Chief Executive Officer, logistics, purchasing, or supply chain managers who have vast knowledge of their RM practices.

Since all theories in the proposed framework are not greatly differed, at least five case studies are recommended to be conducted [85]. Besides interview, document analysis is performed to collect the data in order to increase the research validity and reliability [86]. The data is analyzed by using thematic analysis.

VI. Conclusion

Despite the lengthy advantages of RM, it is not a guarantee that a company will not suffer any failure by implementing the practices [87]-[88]. Therefore, regardless of the maturity of RM theory, the wrongly implemented RM practices will only become a false safety net to organizations [88]-[89]. Responding to this issue, it is crucial to explore the implementation of RM practices and understand the drivers that lead to the way companies implement their RM practices.

From the policy makers' point of views, the trend of the RM implementation could provide valuable insights about the implications of the policies that had been established. This study could help to assess whether the exerted policies and regulations, for example the corporate governance guidelines and ISO 31000, work as they are intended to and link them back to the implementation drivers in order to get comprehensive understanding of the situation.

This paper also enhances the present theoretical framework of the drivers to the implementation of RM practices by introducing the DOI theory. This theory captures the influence of the characteristics of RM practices, the communication and time factor, and extends the current framework developed in Western countries by exploring the Malaysian automotive SMEs.

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