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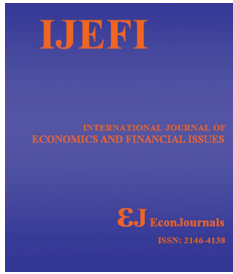
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## **A Case Study of Enterprise Risk Management Implementation in Malaysian Construction Companies**

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### **ABSTRACT**

Enterprise Risk Management (ERM) is claimed as among the key elements in the internal control components, which help the organizations to ensure that principal risks are monitored and managed well within the organizational structure. Implementing ERM in organizations would help to put the process of monitoring, reviewing and identification of risks in a better perspective. This study attempts to explore the ERM implementation in Malaysian construction companies. This sector is chosen as it is claimed that ERM can help construction companies make appropriate and accurate decisions in planning and construction of projects. In addition, this study is conducted to assist and improve ERM implementation of a small construction company. A comparison is conducted between this small company to a bigger construction company, which has implemented ERM for a number of years in an effort to assist the former to improve its implementation. Interviews were conducted to obtain the data for the study. Top management, risk owners, and employees of both companies were interviewed. The interview results were analyzed and presented to the smaller company. Among others, the results suggest that the awareness and understanding of ERM concept by employees is the main factor in ensuring a successful ERM implementation because the employees will be the first to experience such risks in their day-to-day operations. Participation from all level of employees, especially the commitment from the top management is crucial to ensure its successful implementation. In addition, continuous maintenance activities such as follow up monitoring and maintenance of a risk management exercises are important in managing risks effectively.

**Keywords:** Risk Management, Enterprise Risk Management, Construction Sector, Malaysia

**JEL Classifications:** G32; G34

### **1. INTRODUCTION**

Prior studies claim that the implementation of Enterprise Risk Management (ERM) programs would help organizations to reduce the cost of doing business and provide information in terms of available time and resources. [Jalal-Karim \(2013\)](#) finds that proper implementation of ERM help the directors of companies to make important decisions that would have an impact on the organization's portfolio. [Fraser and Henry \(2007\)](#) posit that the detailed implementation of ERM in an organization would assist management in making important decisions involving conflicts and on internal control issues within the organization. In addition, the programs also provide business solutions and create competitive advantage for the organizations ([Jalal-Karim, 2013](#); [Rasli, et al., 2014](#)).

[Mills \(2001\)](#) claims that certain industry, such as construction industry is more challenging and dynamic than other industries, however, the industry has very poor reputation of managing risks and cost targets. Thus, previous studies suggest that risk management is very important in construction industry ([Mills, 2001](#); [Yazid, et al., 2011](#)). This is especially important when risk and uncertainty can potentially have damaging consequences for some construction projects ([Mills, 2001](#); [Qureshi, et al., 2013](#)).

A study using Malaysian construction companies concludes that risk management is still at infancy stage in Malaysia and risk management practices in Malaysian construction companies are relatively low ([Siang and Ali, 2012](#)), and the understanding about ERM among the management and workers are still not clear ([Razali](#)

et al., 2011). In addition, it is also claimed that ERM is still rhetorical in Malaysian construction industry due to insufficient knowledge about ERM (Takim and Akentoye, 2005). Therefore, this study aims to fill this gap. Specifically, the objective of the study is to examine how the awareness and understanding of ERM concepts by the management and employees affect the implementation of ERM in Malaysian construction companies. In addition, it also investigates how participation of ERM exercises and continuous maintenance of ERM processes affect the implementation of ERM in Malaysian construction industry (Qureshi, et al., 2012).

This study uses a case study approach where data gathered from two construction companies in Malaysia are compared. This is because this study is actually conducted to assist and improve ERM implementation of the smaller construction company. The smaller company hopes to improve its ERM implementation by learning through the experience of the other company, which has implemented ERM for 7 years. The findings from this study also contribute to risk management literature in Malaysian business setting and provide information to the construction companies about the factors that need to be taken into consideration when they want to embark in ERM implementation.

The remainder of the paper is structured as follows. Section 2.0 gives a review of the relevant literature and Section 3.0 describes the methodology used for the study. Section 4.0 presents and discusses the results of the study and, finally Section 5.0 provides the conclusions of the study.

## 2. LITERATURE REVIEW

The Committee of Sponsoring Organizations (COSO) of the Treadway Commission (COSO, 2004) framework defines ERM as follow:

*“Enterprise Risk Management is a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.”*

The practice of ERM started when the COSO released its integrated framework for ERM (COSO, 2004) in September 2004. Since then, there has been a global move towards an enterprise wide approach to risk management. It has been accepted in many countries, especially in the developed countries (Walker et al., 2008), but slowly accepted by developing countries. Walker et al. (2008) highlighted that ERM practices can improve a company’s ability to manage risks effectively. The process forces a company to consider those events that might stand in the way of achieving corporate goals. Companies are able to assess these risks and develop strategic plans as per defined in the COSO ERM framework.

Jalal et al. (2011) reports that ERM is a key element of the internal control process for organizations in Bahrain. Bahrain financial corporations are aware of the concept and importance of ERM

in helping them to manage risks in their day-to-day operation. ERM implementation seems to be even more practical for multi-functional organizations where the operational diversity is more complex and wider in scope. Implementing ERM in such organizations will help to put the process of monitoring, reviewing and identification of risks in a better perspective. These risks can then be reported by the management to the board of directors to ensure that principal risks are monitored and managed well within the organizational structure (Fraser and Henry 2007).

Prior studies posit that ERM is important to construction companies (Adnan, 2008; Edwards and Bowen, 1998; Siang and Ali, 2012). Risk and uncertainties are inherent in construction industry due to their nature of operations, processes, and environment. Construction works also require the management of resources, skills and professionals from different field which are interrelated with each other (Siang and Ali, 2012). The common problems in construction projects such as delay in project delivery, over budget, unsatisfactory product quality, and unsafe working environment need to be addressed. Thus, in order to successfully and satisfactorily construct a design and build project, risk management must be applied at all levels of planning and construction (Adnan, 2008). ERM predicts the unpredictable and will help to control inherent risks that can arise within the project and can help companies ensure that any risks arising will be managed effectively. This is supported by Siang and Ali (2012) which claim that the implementation of ERM amongst construction companies produces high benefits towards project performance. The practice of ERM can help construction organizations make appropriate and accurate decisions in planning and the construction of projects. Edwards and Bowen (1998) claim that construction companies face different type of risk in their day-to-day operation, and those risks need to be identified in detail so that the control measures can be taken in advance.

The important roles and responsibilities of management are highlighted in COSO framework (2004) which mentioned that the board of director are responsible to monitor the roles that are given to the risk management committee, embedding risk management in all aspects of the companies activities, approving the board’s acceptable risk appetite and reviewing the risk management framework, processes, responsibilities and assessing whether they provide reasonable assurance that risks are managed within tolerable ranges. This is supported by Egbuji (1999) which claims that top management plays key role in ensuring the effective and efficient operation of ERM exercise in organizations. In addition, Smith and Elliott (2007) state that most firms hope to go on operation without ever experiencing any risk failures. Thus, it is imperative that the top management instill risk awareness within the internal system.

### 2.1. Awareness and Understanding of ERM Concepts

COSO (2009) mentioned that board of directors must establish a framework to ensure that employees can understand the ERM exercises in the organization and the employees must be informed and given information as to how risk would affect their work. If the management are not doing well on educating the employees, it may be difficult to implement ERM exercise in any organization. This is supported by Jalal et al. (2011) which found that the awareness and understanding of the ERM concept by employees is the main

indicator in ensuring a successful ERM implementation for the Bahrain financial corporations. This is especially true given the fact that employees will be the first to experience such risks in their day-to-day operation. Another study by Borgelt and Falk (2007) found that risk can be managed but the employees need to understand the whole function of risk management exercise before it can be implemented.

Ellegaard (2008) claimed that the best approach to implement ERM is by giving knowledge and awareness to management and employees. This is because they are the source of information about risk, thus, they are the best person to identify and indicate which risks are related to their workflow. Andersen (2009) found that the effectiveness of risk management system can only be produced by identifying an appropriate risk factor and the identifying process can only be successful if the staffs are aware and understand how the risk affect their work. Their awareness and understanding of risk management issue will help them to identify risk factor in a better way.

Clear explanation about ERM framework in the organization will help the staff and top management to understand and give a positive impact to ERM implementation (Yilmaz, 2008). Prior studies claimed that most of the failures of ERM implementation were due to project management having insufficient education and training in identifying the risks within the internal and external environment surrounding the organization's nature of business (Ojiako et al., 2012; Demidenko and McNutt, 2010). Demidenko and McNutt (2010) found that many companies lack understanding of the ERM framework. Educating the management and the shareholders will be the best way to ensure the success implementation of the ERM processes in the organization.

## 2.2. Participation and Continuous Maintenance of ERM Exercises

It is claimed that successful risk management system will only be effective if employees participate to identify risk surrounding their work place as they are the risk owners, they would understand the consequences of the risk better and thus better control and planning can be done (Edwards and Bowen, 1998). Participation in ERM exercises, not only by the management but also by the employees, can ensure success implementation of ERM exercise. Ellegaard (2008) found that ERM can only be applied if the organization has knowledge and participation of management and employee.

In addition, Egbuji (1999) found that the employees' awareness is essential to ensure they understand and extract their co-operation with the ERM activity (i.e. participate). The best way to identify risk should come from the staff because they are familiar with the records, systems, and environment and are trained to spot problems and irregularities.

Another factor that needs to be considered in ERM implementation is the maintenance of the programs. Siang and Ali (2012) found that follow up monitoring and maintenance of risk management exercises is crucial in managing risks effectively. This is supported by Egbuji (1999) which posit that ERM exercises is a continuous process, lasting the lifetime of any organizational initiative,

be it a major activity or project, from its initiation, through its development and evolution, to its completion or termination. One of the effective ways to do maintenance is via training where they are trained and updated on new risks or happening in the industry. Employees should be trained as soon as risk management plan is implemented. Employee training should include an understanding of ERM procedures, recognition of potential threats or existing vulnerabilities, and recognition of risk exist in the organization.

## 3. RESEARCH METHODOLOGY

This is a qualitative research. Case study approach is used in the study, where the management and employees of the two construction companies were interviewed. About 14 respondents were interviewed. They are the risk owners, top management, executives and employees of the construction companies.

Prior to the interviews, the researcher visits the companies and samples were chosen once the permission was granted by their human resource departments. The chosen respondents were contacted via telephone to obtain their agreement to participate in the interview. Before starting each interview, the participants were informed about the purpose of the interview and the related research objectives. A permission to record the interview was put forward before the interview session begins. The participants were also assured of the confidentiality of the information.

A semi-structured questionnaire was utilized as a guideline for the interview, where the questions solicited information about the interviewees' awareness and understanding of ERM and the implementation of ERM in their organizations. The interviews, which were conducted in August and September 2014, ranged in duration from 30 min to 45 min for each interviewee. The interviews were recorded and transcribed.

## 4. RESULTS AND DISCUSSIONS

### 4.1. Descriptive Statistics

The following sections describe the profile of the construction companies and the profile of the respondents from these companies.

#### 4.1.1. Profile of construction companies

##### 4.1.1.1. Construction Company A (CCA)

CCA was incorporated in 1974 and became a public company in 1992. Now, CCA has more than 10 million employees worldwide. CCA is one of the largest construction companies in Malaysia. CCA's philosophy is to develop a comprehensive range of products that cater the entire market, ranging from self-contained townships to upscale boutique developments. CCA has implemented ERM exercises for 7 years and CCA has completed 14 cycles. The exercises have helped CCA to monitor its construction projects and stay competitive in the market.

##### 4.1.1.2. Construction Company B (CCB)

CCB commenced operations in year 2000, and became public company in 2012. CCB is a full-scale property developer and resort operator and a major player in the east coast economic region of



Malaysia. CCB first started with only 5 employees, but now it has more than 600 full-time employees with hundreds of other business associates who work with CCB on a regular basis. CCB started its ERM implementation in January 2013 and CCB is now in its 5<sup>th</sup> cycle. It has been more than 2 years and the company is still in the process of improving its practices.

#### 4.1.2. Profile of interviewees

The respondents were selected from the above construction companies. Initially 14 employees were selected from each company. However, only 4 respondents agreed to be interviewed from CCA and only 10 respondents agreed to be interviewed from CCB. The 10 respondents from CCB are Executives (7), Assistance Manager (1), Chief Financial Officer (CFO) (1) and Head of Department (1). While another 4 from CCA are Executives (2), Manager (1) and Head of Department (1). Seven of the respondents are risk management committee members, and five of them have more than 10 years of experience in construction industry. Ten of them are female and four are male.

## 4.2. Interview Results

### 4.2.1. Awareness and understanding about ERM

The respondents were asked if they were aware of any ERM programs in their companies. Interviewed employees from all level in CCA were aware about the programs; however, only 5 out of 10 employees from CCB were aware about the ERM programs in their organization.

Among the responses from CCB employees:

*"I am not aware at all and don't know exactly what is ERM exercise. I know what is risk but don't know how does ERM impact my work" (MS B4).*

*"I am aware but I am not risk owner so not really bother about it at all" (MS B3).*

*"Yes, I am aware but I don't care" (MS B2).*

*"Ummmh... backup system is part of my department risk...but the rest.... I am not really sure" (MR B5).*

This "don't care" attitude among CCB employees is of concern to the researchers. In fact, as mentioned in Section 4.1.2, initially, 14 respondents were selected for interviews from each company. Respondents from CCA cannot meet for the interviews due to their busy schedules and overseas trips, as well as clashes of meeting time with the researcher. However, in CCB, four of them refused to be interviewed because they do not think ERM is important, and they think ERM is only for regulation purposes. These are among their replies:

*"I had no time for all this ERM because for me that is only requirement and we do not really need it.... you can ask other people" (MS B11).*

*"Sorry I don't really understand what is ERM and for me nothing much to share about it" (MS B12).*

*"Actually I don't have time and if you need more information you may ask RMC or other risk owner ...." (MR B13).*

*"I guess, It is much better if you discuss this issue with my CFO..... she will give you better explanation" (MR B14).*

Two of the respondents in CCB who are the CFO and risk coordinator of CCB admitted that ERM implementation in their organization is still new and a lot of things need to be done. They commented that:

*"In my opinion ERM is not difficult to understand and implement. It all depends on how we accept it. .... in my organization.,now it is difficult to implement and also to understanding because it is still new .....So a lot of the staff are not aware that it is important, some of them are aware but there don't really understand what exactly ERM is all about. It only will be easy to implement if they are aware, they have understanding and also if they want to participate, then only the implementation of ERM exercise can be successful" (MS B7).*

*"Implementation is not that difficult but we need time for our people to accept it to become a norm or part of their job function... They need to change their mentality....maybe later they can see the advantages of doing the exercises. The top management is very important as people will always look at top management actions" (MS B8).*

The above replies indicate that CCB needs to continue educating and communicating information about ERM to its employees at all levels. CCB employees appear to be unaware about the importance of ERM programs and perceived them as mere procedures and requirement that need to be done. They do not seem to understand the impact of ERM exercises on their work. They do not want to bother about it and prefer to leave it to the risk management committee to do the work. These replies are very different from those of respondents from CCA which reflects that they know what is going on in their company and they understand how it affects their work. Even though some of them are not risk management committee, they still consider ERM exercises seriously as they understand that the nature of the business deals with public interest. However, respondents from CCA admit the challenges and difficulties that they have to face in dealing with the employees especially in the early stage of their implementation processes. Among others, they commented that:

*"At times it is difficult.....because people go in and out... there is no continuity and basically people will think that ERM is only for requirement purposes and no effect on their day-to-day activities" (MS A1).*

*"It actually depends on the staff perception..... if the staff is aware that risk is important to the management, ... and the staff must be properly trained to ensure it is not difficult for them to implement ERM" (MR A2).*

*"ERM exercise is not difficult to understand or implement. It all depends on individual especially risk owner either want to*

*perceived this ERM exercise as important or not. If they perceived ERM exercises as important, their will learn how to understand about ERM as best as they can”(MS A3).*

In addition, they also expressed their hope about the commitment of their top management. Based on their observation, they believed that their top management has good understanding of ERM exercises in the company. They commented that:

*“Top management has to understand the whole processes because if they don't understand, how can other staff understand because they are leading the staff to do risk management” (MS A1).*

*“The top management must play leading roles before they can lead the subordinate to handle any task .... MD and CFO need to play their roles more seriously than others” (MS A3).*

#### *4.2.2. Participation and continuous maintenance of ERM activities*

The respondents are also asked about their participation in ERM exercises, and how they benefit from those activities. Using the scale of 1 (no participation) to 7 (full participation), they were asked to rate the level of staff participation in ERM activities in their organizations. Respondents from CCA cited 5-6 for their staff participation as they claimed that they always get fairly good participation as ERM exercises has been part of their work culture and there is not much issue on participation among the staff. These are the responses from CCA's employees:

*“...6 as our staff would normally participate in ERM exercise because we have to keep updating and monitoring our risk register for every quarter ....it is part of our work.... The activities help us in our daily activities, because without ERM exercise I cannot detect risk related to my job function”(MS A1).*

*“.....but if you want me to rate level of participation of staff in RMC activities I can say it is 5 because most of our risk owner and staff give full cooperation every time we have ERM exercise such as training, forum and others”(MS A3).*

*“...participating in the activities help me in my work, because based on participation in ERM exercise and the training it helps us to identify risk that surrounding us more effectively. The top management normally would communicate the outcome of the risk discussion via the company email and notice board” (MR A2).*

In addition, they also commented on the participation and commitment of their top management:

*“I can say 5 because our top management has its own risk register to be filled in so certainly they have to participate in ERM exercise” (MS A1).*

*“....our MD is giving full cooperation every time we have ERM activities as for him this ERM exercises are really important to help company, to prevent any high risk reflected to our business so I will give 6 level of participation of my top management on ERM activities....”(MS A3).*

*“.....there is budget allocation for training .... If we need additional budget, we need to get approval from our top management”(MS A3).*

Respondents from CCB were also asked the same questions about their participation in ERM activities and were asked to rate their participation in the scale of 1 (no participation)-7 (full participation). Most of them rate their participation between 3 and 4. According to them, the participation level of staff in ERM activities is still weak, which may be due to the low level of awareness and understanding of the programs. Among others, they commented as follows:

*“I can give 3 because...as a risk owner we try to give full participation even we don't really understand what ERM exercise is all about .... That is why I give 3”(MS B6).*

*“I can give you 4 ...some of them give good cooperation but some of them are not possible because they think that ERM exercise is not important and just for a compliance requirement only”(MS B7).*

*“Very low ..... I can say 3, we have our responsibilities and we need to settle day-to-day thing rather than ERM...”(MR B10).*

The CFO of CCB was also interviewed and she was asked about CCB staff participation. This is her comment:

*“We want to have the whole group to participate in ERM activities, but at the moment, we stream down to a few support departments, where the risk owner must develop ERM activities to create awareness and understanding to others.... but... as we are still new... the level of participation is still low.....” (MS B8).*

The respondents were also asked about the participation of their top management, and these are their comments:

*“I can say either 3 or 4 because we all still new and still need to improve” (Mr B5). “Both my MDs do not join any of the ERM training, so for a scale from 1 to 10, I give them 2” (MS B7).*

The CFO of CCB who was interviewed was asked about CCB's planning for continues maintenance of ERM exercise. This is her replies:

*“We have started our ERM framework, we also have our risk management committee and we need to update our risk management register...we also get external and internal auditors to check our compliance and implementation. We also have our audit committee which comprises of independent director to check on our ERM programs. Training and education programs are ... and will also be conducted as part of continues maintenance activities in our company” (Ms B8).*

She also added that the company may provide reward to encourage employees to participate in ERM programs, and this has been highlighted to the board of directors for approval.

The above findings appear to suggest that more motivation as well as information need to be communicated to all level of employees in CCB to motivate not only the lower level staff, and not only the risk owner, but also some of their top management. The top management must show their commitment and understanding of the exercises, to assure the employees that the exercises are really beneficial for the company. Even though ERM implementation and reporting is required by Bursa (2011) Malaysia under section 15.26(b) of the listing requirement, but it should not be merely a process to comply to the regulation, because this process can benefit the company if proper implementations are carried out.

In addition, the interviews also revealed that the staff of CCB were only aware about the risk of their area/department, but fail to relate the risk to other areas/departments. This indicates that more training is needed so that the staff will become familiar and be able to relate the effect of certain risks to the overall organization.

## 5. CONCLUSION

This study is conducted in an effort to assist and improve the implementation of ERM programs in a smaller construction company, CCB. The interview results suggest that CCB needs to continue educating and communicating information about ERM to its employees to increase their awareness and understanding, so that they would be able to relate the risk that they encounter and its impact on their daily work. They must understand that ERM activities are not meant for risk owner only, but may also affect their routine job. Furthermore, this is important because their understanding would encourage them to participate in ERM activities. Even though they classify themselves as new adopter of ERM and consider this as normal in the early years of implementation, but the interview results appear to suggest that more need to be done. The basic understanding and awareness about ERM need to be communicated down to all level of employees as early as the implementation process starts. The employees need to get correct information and good impression of ERM in order to motivate them to participate in the activities.

This study has its limitation as only 14 respondents from two companies were interviewed; hence, the results cannot be generalized. Future studies can include more samples and involve more companies. In addition, future research can also be conducted by using other methods, such as questionnaire surveys or focus group discussions.

## REFERENCES

- Adnan, H., (2008), Risk management in design and build on construction project in Malaysia. ICCBT, 4, 39-50.
- Andersen, T.J. (2009), Effective risk management outcomes: exploring effects of innovation and capital structure. *Journal of Strategy and Management*, 2(4), 352-379.
- Borgelt, K., Falk, I. (2007), The leadership/management conundrum: innovation or risk management? *Leadership and Organization Development Journal*, 28(2), 122-136.
- Bursa, M. (2011), Bursa Malaysia: risk Management Statement. Available from: <http://www.bursa.listedcompany.com/misc/ar2011/html>. [Last retrieved on 2013 Nov 20].
- Committee of Sponsoring Organizations (COSO). (2004), *Internal Control – Integrated Framework, Executive Summary*, Committee of Sponsoring Organisations. Available from: [http://www.coso.org/documents/COSO\\_ERM\\_ExecutiveSummary.pdf](http://www.coso.org/documents/COSO_ERM_ExecutiveSummary.pdf). [Last accessed on 2014 Jun 07].
- COSO Supports Integration of Strategy and Enterprise Risk Management. (2009), COSO highlights specific areas where management can work with its board to enhance the board's risk oversight capabilities for strategic advantage. Available from: <http://www.coso.org/-erm.htm>. [Last retrieved on 2013 Nov 20].
- Demidenko, E., McNutt, P. (2010), The ethical of enterprise risk management as a key component of corporate governance. *International Journal of Social Economic*, 37(10), 802-815.
- Edwards, P.J., Bowen, P.A. (1998), Risk and risk management in construction: a review and future directions for research. *Engineering, Construction and Architectural Management*, 5(4), 339-349.
- Egbuji, A. (1999), Risk management of organizational records. *Records Management Journal*, 9(2), 93-116.
- Ellegaard, C. (2008), Supply risk management in a small company perspective supply chain management. *An International Journal*, 13(6), 425-434.
- Fraser, I., Henry, W. (2007), Embedding risk management: structures and approaches. *Managerial Auditing Journal*, 22(4), 392-409.
- Jalal, A., Al Bayati, F.S., Al Buainain, N.R., (2011), Evaluating enterprise risk management (ERM): Bahrain financial sector as a case study. *International Business Research*, 4(3), 83-92.
- Jalal-Karim, A. (2013), Leveraging enterprise risk management (ERM) for boosting competitive business advantages in Bahrain. *World Journal of Entrepreneurship, Management and Sustainable Development*, 9(1), 65-75.
- Mills, A. (2001), A systematic approach to risk management for construction companies. *Structural Surveys*, 19(5), 245-252.
- Ojiako, U., Papadopoulos, T., Thumborisuthi, C., Yang, Y.F. (2012), Perception variability for categories risk factor. *Industrial Management and Data System*, 112(4), 600-618.
- Qureshi, M.I., Iftikhar, M., Janjua, S.Y., Zaman, K., Raja, U.M., Javed, Y. (2015), Empirical investigation of mobbing, stress and employees' behavior at work place: quantitatively refining a qualitative model. *Quality and Quantity*, 49(1), 93-113.
- Qureshi, M.I., Khan, K., Bhatti, M.N., Khan, A., Zaman, K. (2012), Quality function deployment in higher education institutes of Pakistan. *Middle-East Journal of Scientific Research*, 12(8), 1111-1118.
- Rasli, A.M., Norhalim, N., Kowang, T.O., Qureshi, M.I. (2014), Applying managerial competencies to overcome business constraints and create values evidence from small technology-based firms in Malaysia. *Journal of Management Info*, 3(1), 99-121.
- Razali, A.R., Yazid, A.S., Tahir, I.M., (2011), The determinants of enterprise risk management (ERM) practices in Malaysia public listed companies. *Social and Development Sciences*, 1(5), 202-207.
- Siang, L.C., Ali, A.S. (2012), Implementation of risk management in the Malaysia construction industry. *Journal of Surveying, Construction and Property*, 3(1), 1-15.
- Smith, D., Elliott, D., (2007), Exploring the barriers to learning from crisis. *Management Learning Journal*, 38(5), 519-538.
- Takim, R., Akintoye, A. (2005), Process improvement of construction projects in Malaysia: analysis case studies. *Proceedings of the 2<sup>nd</sup> Scottish Conference for postgraduate researchers of Built and Natural Environment (PRoBE) 16-17 November, Glasgow Caledonian University*. p263-273.
- Walker, P.L., Shenkir, W.G., (2008), Implementing enterprise risk

management. *Journal of Accountancy*, 205(3), 31-33.

Yazid, A.S., Hussin, M.R., Wan Daud, W.N. (2011), An examination of enterprise risk management (ERM) practices among the government-linked companies (GLCs) in Malaysia. *International Business*

Research, 4(4), 94-102.

Yilmaz, A.K., (2008), Importance of the enterprise risk management practice for airline management: ANP-based approach. *International Journal of Business and Management*, 3(5), 138-146.