A CONCEPTUAL FRAMEWORK FOR ENTERPRISE RISK MANAGEMENT IN MALAYSIAN PUBLIC HIGHER EDUCATION: APPLICATIONS OF KNOWLEDGE MANAGEMENT

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ABSTRACT

Malaysian higher education has been known as one of the major contributors towards the country's growth as they are striving towards knowledge-economy. Therefore, they also exposed to the risk due to inefficient in utilizing the government funds which resulted an input slacks. Hence, Public Higher Education (PHE) needs to implement Enterprise Risk Management (ERM). ERM has been recognized as one of the strategy or method in order to manage the risk across the organization and providing the solution. Thus, by implementing ERM, it will help the higher education to manage the risk. Nevertheless, there are very limited studies that focus on the implementation of ERM in Malaysian PHE specifically. Hence, the aim of this paper is to propose a conceptual framework for ERM in Malaysian PHE by adapting Knowledge Management and open system theory. This conceptual framework can be practiced as a guideline for quality accreditation in the future.

Keywords: Enterprise Risk Management, Public Higher Education, Knowledge Management, Conceptual Framework, Malaysia

INTRODUCTION

Higher education sector has been known as one of the major contributors towards the country's growth as they are striving towards knowledge-economy. This means that they are responsible to provide training and maintain the quality of the graduates since it was part of the Malaysia's nation building agenda. By looking in the mid of 1990s, higher education is one of the sector in Malaysia that has experienced a positive growth (Eam et al., 2016). Nevertheless, over the years, they also experienced an extremely increased for their cost. Thus, this issue has made university in Malaysia as one of the most expensive place which falls at the fifth ranked by referring to its household income (Chan, 2015).

Besides, in 2015, based on the output ranking, Malaysia has been ranked at 44th, meanwhile based on the resource allocated; they manage to get to the top 12th from Universities 21 Ranking. The output ranking was measured by research output, student employability and others. However, Malaysia only managed to fall at 401st to 500th from The Times Higher Education World University Rankings which received by Universiti Teknologi Malaysia in 2015 to 2016 (Eam et al., 2016).

Therefore, as a result, there are large amount of spending from public funds for the higher education which will lead to the inconsistency of the output performance in Malaysian Public Higher Education (PHE). In addition, the inputs which include the government funds might not be utilized efficiently by the PHE, thus resulted the input slacks and low performance. Hence, all of these issues require the precise investigation on the performance of the PHE in Malaysia (Eam et al., 2016).

Consequently, this shows that non-profit organizations are also exposed to risks and most public entities received their funds from the government. As the public is their main stakeholders, the way these public entities manage and spend the allocated funds will always be under scrutiny by the public. Besides, the wastage of funds due to mismanagement such as lack of proper knowledge management and misappropriation will always be the major concerns of the stakeholders. The advancement of technology has impacted on the way the public gets the information which is readily available in the web. Therefore, public organizations must be managed prudently, effectively and efficiently. In order to do that, they would have to manage their risk in the same way. Public organizations cannot run away from ensuring proper governance is in place (Ahmad et al., 2016).

Thus, Enterprise Risk Management (ERM) implementation in PHE will help them to manage their risk effectively and efficiently. This can be supported by previous studies which stated that ERM are vital for PHE as it can manage all the risks faced by them across the organization which will lead them to achieve their objectives (Howard, 1996; Tarrant et al., 2011).

Hence, the aim of this paper is to propose a conceptual framework for ERM implementation in Malaysian PHE by adapting and applying the Knowledge Management (Rodriguez & Edwards, 2014) and Open System Theory (OST) (Campo, 2009). As such, knowledge management has been conceptualized into the three dimensions which are people, process and technology which have been classified as knowledge management components (Rodriguez & Edwards, 2014).

LITERATURE REVIEW

Enterprise Risk Management (ERM)

In recent years, ERM has drawn much attention from academics and practitioners from worldwide (Hoyt & Liebenberg, 2011; McGeorge & Zou, 2013) and organizations make a comprehensive view towards ERM (Gordon et al., 2009). Besides, organizations should implement ERM as it would help in providing information in terms of available time and resources (Mustapha & Adnan, 2015). Previous studies also argued that appropriate ERM implementation will help the organization's director to make crucial decisions that would give an impact on the organization's portfolio, thus provide business solutions and create competitive advantage for the organizations (Karim, 2013; Rasli et al., 2014). This is because ERM is different with Traditional Risk Management (TRM) as ERM managed all various types of risks that arise in organization and risk are everyone responsible, while TRM managed the risk based on silo approach which risk are individual responsible not everyone (Monda & Giorgino, 2019).

There are many definitions of ERM from the past literature such as Casualty Actuarial Society (CAS, 2003; Dickinson, 2001; Lai & Samad, 2011), however the definition of ERM that is most frequently used are from Committee of Sponsoring Organizations of the Treadway Commission (COSO) (COSO, 2004) which are:

"A process that applied in strategy setting and across the organization in order to identify the potential risk that may occur and affect the organization, then managed that risk, and lastly provide reasonable solution in order to achieve the objectives of the organization. This process will involve the board of directors, management and other personnel".

Knowledge Management (KM)

For higher education, KM defined as:

"The structured process of creating, transmitting, filtering, summarizing and delivering explicit and tacit knowledge in order to generate distinctive value which can be employ to improve the environment of teaching and learning" (Adhikari, 2010).

In other words, it means that the higher education is responsible to manage the KM as it is vital to generate a value in order to improve their performance and also to create the stable environment for teaching and learning. Besides, KM also encourages the higher education to obtain, transfer and utilize the knowledge in an effective and efficient ways so that they achieved their success (Adhikari, 2010).

There are three components which are people, process and technology that frequently been portrayed under KM. The origin of these components under KM has been found by Leavitt on 1964 which known as Leavitt "diamond" model. However, Leavitt "diamond" model does not have the process components but it has task and structure together with people and technology components (Edwards, 2011). This is because, it is crucial to consider and include the process components as it is not only referring to knowledge management processes but also referring to business processes (Edwards, 2009).

Figure 1 shows the KM components and how these three components connected to each other. As such, People help design and then operate the Processes and Processes determine the need for Technology and Technology provides support for People.
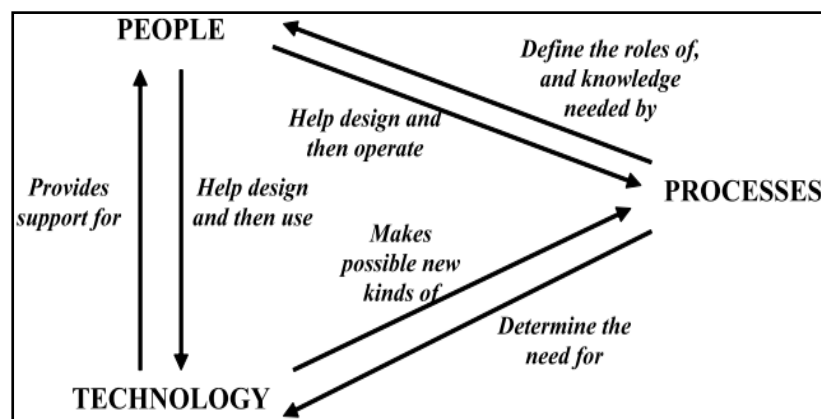

FIGURE 1
THE KNOWLEDGE MANAGEMENT COMPONENTS (PEOPLE, PROCESS, AND TECHNOLOGY)

Source: Edwards (2009)

The concepts of KM in the area of risk management has not been discussed precisely, however the three components of people, process and technology has been identified as an important things to validate the risk management activities. The first component which is people are referring to communication among employees in organization, particularly the risk management committee, which based on risk management actions, risk control and also ERM (Rodriguez, 2010). Hence, this research follows the knowledge management components that been discussed by the previous studies (Edwards, 2009).

The extent of literature also supported that the knowledge management components consists of people, process and technology (Anukrati, Hassan & Rishi, 2017; Sireteanuand, 2007).

The elements under People in this paper will follow the previous studies (Alavi, & Leidner, 2001; Robbins, 1990) which are communication among groups. It has been stated that the communication among groups is vital in order to communicate about their experience in handling losses and problems that arise in organization (Rodriguez & Edwards, 2009).

While for the elements of Process and Technology also follow the previous study (Rodriguez & Edwards, 2009) which in specific the Process elements consists of knowledge sharing. Knowledge sharing is crucial in order to discuss the solution to solve the issues related to risk management.

Lastly, the elements of Technology are consists of intranet quality and network capacity for connecting people. This is because, when in organizations have both of these elements, it will able to solve the issues related to risk management that arise within that organization (Rodriguez, 2010).

Table 1 AREAS OF KNOWLEDGE MANAGEMENT COMPONENTS PROPOSED FOR THIS STUDY		
Construct		**Operational Definition**
People	1. Communication	The risk information or risk knowledge that being transferred within organization to enhance the understanding and encourage team work thus influences the organization to implement the ERM (Peter, 2015).
Process	2. Knowledge sharing	The willingness of people to communicate and share the risk knowledge as well as provide solution on organizational issues that could influence organization to implement ERM (Wang et al., 2014).
Technology	3. Intranet quality	The platform to facilitate the interaction in problem solving process and provide access for collaboration as well as to risk data or information for ERM implementation in the organization (Fugini et al., 2016).
	4. Network capability	The capability of the network through portal to support the interdepartmental of work and knowledge sharing to facilitate the collaborations in different risk management areas in ensuring the implementation of ERM are effective and efficient (Bengesi & ILe Roux, 2014).

People

Relationship of Communication in Implementing ERM Towards Performance of PHE

It has been stated that in order to implement the risk management in organization effectively, the risk management committee need to understand and know what kind of decisions to be made and why that particular actions need to be taken. All of these can be done by having an effective communication between them so that they can discuss regarding the risk management issues that arise in organization and implement the risk management effectively and efficiently (Choo & Goh, 2015).

Furthermore, by having an effective communication, the level of understanding in order to manage and treat the risks that arise in organization will be improved (Karim, 2013). Therefore, this shows that when everyone are understand towards the nature and type of risks that significant to the organization or enterprise, thus the ERM can be implemented effectively and efficiently. Hence, the risk management committee should responsible in order to communicate the information regarding the potential and existing risks that arise in organization (Lai, 2014).

This is because; the scarce of risk knowledge are caused by the poor communication within organization which will lead to poor understanding towards the risk management (Rauf, Mansor & Jabar, 2018). Apart from that, the effective communication among experts in organization also can contribute to the organizational performance as there is no interruption during communication because of an appropriate connection with the experts that can provide the actual meaning of the risk information (Rodriguez & Edwards, 2014).

Process

Relationship of Knowledge Sharing in Implementing ERM Towards Performance of PHE

The risk knowledge needs to be shared within the organization particularly for ERM implementation. This is because knowledge sharing has been recognized as the main process in the knowledge management in order to improve the knowledge towards the risk in organization (Rodriguez & Edwards, 2014). This can be supported by previous studies (Azizi, & Rowlands, 2018), which they stated that knowledge sharing is the crucial element towards the success of risk management in organization. This is because knowledge sharing allows the organizations to update and rearrange their risk knowledge in order to ensure the effectiveness of implementation of risk management.

Furthermore, knowledge sharing also allows the managers to flexibly utilize the risk knowledge within the process of managing the risk in order to ensure the effectiveness of implementation of risk management. Other than that, instead of improving the risk knowledge, knowledge sharing also can improve the performance of the organization and the ability of organization such as competitive advantage and innovation capability (Marouf, 2016).

Technology

Relationship of Intranet Quality in Implementing ERM Towards Performance of PHE

The Intranet is vital in the organization in order to connect people and to access data of risk management in all aspects including the implementation and process across the organization (Rodriguez & Edwards, 2014). Besides, Intranet also can benefit the risk management as the risk committee can make collaboration through web-based in order to portray the risks that arise in organization.

This is because, the web-based will give a notification whenever there is a risk that occur in organization and also provide the strategy and solution on how to handling the risk through the organized dashboard to them (Fugini et al., 2016). It also has been stated that the web-based is very useful medium in order to link the data especially the risk data which include the describing and evaluating the risk (Tarrant, Hitchcock & Carr, 2011).

Despite from that, the use of Intranet also can improve the organizational performance through sharing the information. This is because; it allows the real time of sharing the information and data access across the level of organizations. The quality of Intranet could be achieved in organizations if they know how to fully utilize this system. Other than that, intranet quality also has been proved as one of the most reliable variable in this study (Rauf et.al, 2020; Rauf et.al, 2019).

Relation of Network Capacity Capability in Implementing ERM Towards Performance of PHE

Network capacity is a good medium to share the knowledge about the risk across the organization because some risk terms are difficult to understand (Rauf et al., 2019). Apart from that, network capacity also can benefit the implementation of ERM in organization as it can correlate between the business factors, methodological and technological which are very crucial for ERM implementation (Rodriguez & Edwards, 2014).

In addition, it is important to consider the capacity of the network in organization as to avoid any problems or issue during organizing, examining and estimating the risk that might occur in organizations. This is also to ensure that the information of risk is and rapidly distributed to the risk managers and top management as an alert that are understandable and reliable. In other words, by having a large capacity of network in organization, it can strengthen the collaboration between forecasters and end-users (Graziella, 2015).

Apart from that, network capacity also been suggested as one of the factors that contribute to the organizational performance as it allow the organizations to discover the opportunities easily (Stam, Arzlanian & Elfring, 2014). Papastamatelou et al., (2016) also supported that organizations will have an access to the valuable resources during coordination activities that can improve their performance by having a large capacity of network (Papastamatelou et al., 2016). Besides, there are various number of studies (Bengesiand, 2014; Kenny, 2009; Mitroff, 2006) that examined the relationship between network capacity and organizational performance.

Research Model

Open System Theory (OST) was founded in 1956 by a biologist, Ludwig Von Bertalanffy. Basically, OST fall into three parts which are input, throughput and output, together with the organizational process which feedback. Input is referring to people, raw materials, capital and technology. While the throughput is referring to the different processes that involved in organization such as transformation process within a system and the output is referring to the value added output of the system. Lastly, feedback is referring to the information regarding the input that evaluates the adequacy of the output and objectives of the system.

This OST has been cited by many of previous studies (Benton, 2013; Capps & Hazen, 2002; Hanna, 2000; Jin, Nie & Xiao, 2008; Thien & Razak, 2012) in various of management field. Furthermore, the attributes of input variable stated in OST bore resemblance to attributes stated in knowledge management components by Edwards, 2009. As such, this research will adapt this theory as part of key basic theory for this research due to the relationship between three variable construct namely input, throughput and output which fit and suited to the purpose of this research to show the relationship between the knowledge management components with the process of Enterprise Risk Management (ERM) and outcome of the organization. The input variable in this study will adapt the knowledge management components by Edwards, 2009 and Rodriguez and Edwards (Rodriguez & Edwards, 2014) as it clearly defines the input and components introduced by Ludwig (Ludwig, 1956).

It is therefore, based on literature review and the research framework, to understand the relationship of KM and ERM towards performance of Public Higher Education (PHE) in Malaysia, the following hypothesis is set up to be tested:

H1   *There is a positive relationship between people (communication) and ERM towards performance of public higher education (PHE).*

H2   *There is a positive relationship between process (knowledge sharing) and ERM towards performance of public higher education (PHE).*

H₃   *There is a positive relationship between technology (a. intranet quality and b. network capacity) and ERM towards performance of public higher education (PHE).*
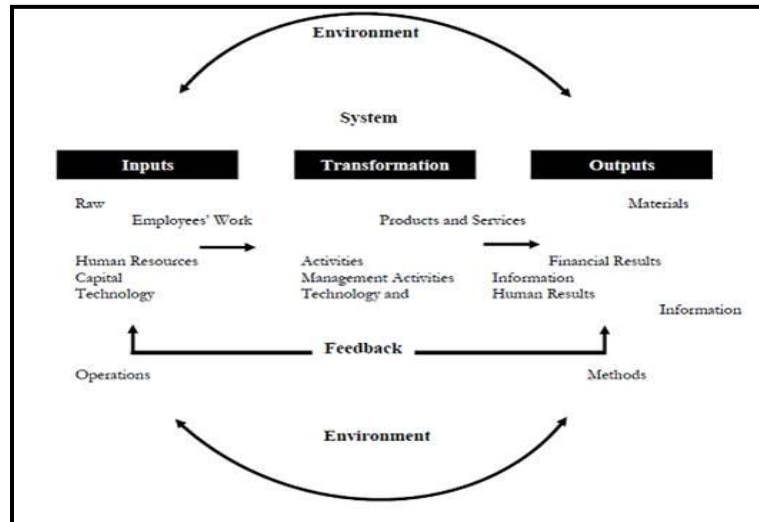

FIGURE 2
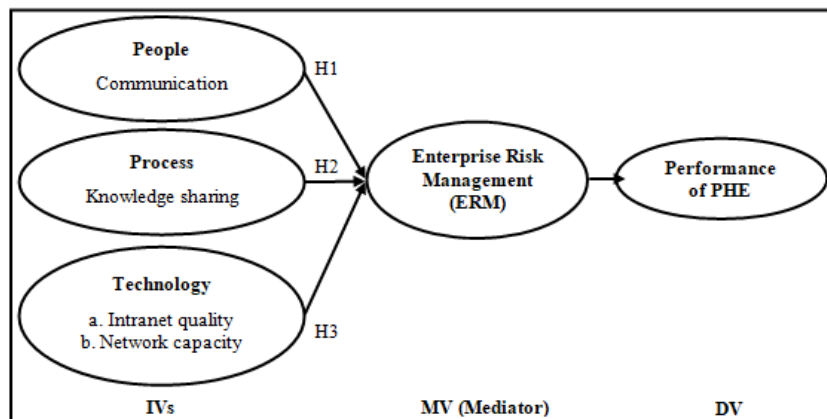**OPEN SYSTEM THEORY (OST) BY BERTALANFFY (1956)**

FIGURE 3
A PROPOSED RESEARCH MODEL

METHODOLOGY

The work methodology included a literature search in order to developing the framework for ERM implementation on performance of Malaysian public higher education. This study was conducted with reference to existing theoretical literature, published and unpublished literature. Based on the past literature, ERM has attracted much worldwide attention in recent years (McGeorge & Zou, 2013), however there are very little research on ERM study in Malaysia context even though the it was well known in developed country such as US, China and Canada.

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Thus, Malaysian public higher education was selected as the population and the samples were comprised of risk manager, top management and internal audit in order to examine the ERM implementation and the effect towards the performance.

The literature search was carried out based on systematic keyword combination search six databases namely, Scopus, Web of Science, Emerald, Science Direct, ProQuest and Google Scholar. The authors used advanced search for the database engines and basic search for Google. There are several keywords used for the data search to obtain relevant studies regarding knowledge management such as "communication", "knowledge sharing", "intranet quality", and "network capacity" followed by enterprise risk management. The criteria for including the article were the article should be:

1) peer-reviewed
2) written in English
3) clearly stated the objective of the study
4) clearly stated the methodology used
5) report the results
6) Conclusion. Lastly, the articles were read several times to obtain a sense of the content.

CONCLUSION AND FUTURE RESEARCH

In conclusion, the aim of this paper is to propose the framework for ERM implementation in Malaysian PHE by using Open System Theory by Bertalanffy (Benton, 2013) and knowledge management by Rodriguez & Edwards (2014). However, it is still needs to discuss more depth in future.

This paper explains the relationship between four components under knowledge management which are communication, knowledge sharing, intranet quality and network capacity and ERM implementation towards performance of PHE. Under the proposed framework, there are three hypotheses that have been developed and have to be empirically tested.

Furthermore, these hypotheses provide an opportunity for further investigation for researcher to examine through variety of research designs and settings. Besides, further researchers that intending to adopt the theory should also consider other variables that may influence the ERM towards the performance of PHE. The proposed framework in this paper can be a benchmark for quality accreditation in the future.

Last but not least, this paper is expected to give a contribution to the existing literature in the area of knowledge management and ERM in the context of higher education. This paper will also give relevant government agencies an insight into formulating new policies or strategies on issues related to ERM in Malaysia.

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