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Effect of Enterprise Risk Management System and Implementation Problem on Financial Performance: An Empirical Evidence from Malaysian Listed Firms

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Abstract

The Malaysian listed companies are still struggling to maintain their enterprise risk management (ERM) system efficiently due to improper implementation problems of risk management practices. Therefore, the prime objective of this study is to reveal the audit effectiveness in mitigation of risk management implementation (RMI) problem and to examine the effect on financial performance. To achieve this objective, three hundred (300) questionnaires were distributed among the managerial employees of Malaysia listed firms by using simple random sampling. Data were analyzed by using SmartPLS 3. It is found that external audit effectiveness (EAE) and internal audit effectiveness (IAE) has a significant positive relationship with an ERM system. However, top management stress has a significant negative relationship with RMI. Additionally, ERM system has positive effect on financial performance of companies.It is also found that level of RMI playing a mediating role. Thus, this study is contributed in the body of knowledge by highlighting the vital factors to mitigate the crucial problem of RMI, particularly in Malaysian firms. Hence, the current study is quite beneficial for practitioners to implement ERM system effectively.

Keywords: Enterprise risk management, internal audit, external audit, top management stress, implementation.

The current financial crisis has brought to the forefront the requirement for companies to efficiently handle their risks (Cohen, Krishnamoorthy & Wright, 2017). Now the enterprise risk management (ERM) is one of the crucial areas in all industries (Soltanizadeh et al., 2014). Various studies demonstrated the importance of ERM (e g., Bailey, Collins, & Abbott, 2017; Bohnert, Gatzert, Hoyt, & Lechner, 2017; Bromiley, McShane, Nair, & Rustambekov, 2015; Lam, 2014), however, most of the studies are missing the element of ERM implementation as well as its effect on financial performance. As ERM implementation is key element of risk management.

How to implement ERMS effectively among organizations is one of the crucial issues. The ERM implementation level is a fundamental factor in the success of ERM system (ERMS). However, many Malaysian companies are unable to implement risk management activities (Hameed, Hashmi, Ali, & Arif, 2017). The weak risk management system has negative role on financial performance (Laisasikorn, & Rompho, 2019). Improper risk management implementation (RMI) practices affected adversely on Malaysian firm's performance, as it is evident form financial crisis of 2008. These crises have negative effect on the performance (Laisasikorn, & Rompho, 2019). Although global financial crisis (GFC) of 2008 revealed the significance of ERM practices (Arena et al., 2010; O'Donnell, 2009), however, still the implementation of ERM practices is limited among most of the Malaysian firms (Yusuwan, Adnan, Omar, & Kamaruzaman, 2008). Various latest studies also mentioned that Malaysian companies are facing the issues of risk management (Chong, Lee, Saw, Toh, & Yip, 2019; Omer, 2019; Tinggi, Jakpar, & Hui, 2019).

Hence, this study is one of the efforts to highlight the problem of ERM implementation in Malaysian firms. To address this issue, the current research introduced audit effectiveness as the key factor to resolve this issue. Therefore, this study is based on the future directions of Hameed,

Hashmi, Ali, & Arif (2017). It is recommended by Hameed, Hashmi, Ali, & Arif (2017), results of the study should be validated by collecting data from Malaysian firms. However, present study did not examine the influence of top management support. As various studies already studied the influence of top management support on ERM (e g., Barton et al., 2002; Dabari & Saidin, 2014; Mensah & Gottwald, 2015) and found a positive effect on ERM. Hence, this study introduced a relatively new variable namely; top management stress. Sometimes top management exerts stress on lower-level employees to implement ERM. Therefore, present study investigated the effect of stress on ERM implementation.

There is a direct association between internal audit effectiveness (IAE) and external audit effectiveness (EAE) with the level of RMI, which enhances ERM system performance (Hameed, Hashmi, Ali, & Arif, 2017). Moreover, top management has a significant relationship with the level of RMI (Dabari & Saidin, 2014). However, this relationship affects adversely in case of top management stress. It is also evident from the studies that ERM system has positive role in financial performance (Laisasikorn & Rompho, 2019). Therefore, the framework of this study is given below in Figure 1.

The prime objective of this study is to reveal the audit effectiveness in mitigation of the LRMI problem and to investigate the effect on financial performance. Additional objectives are as follows:

1. To examine the role of audit supply chain determinants (EAE, IAE, TMS) on LRMI.
2. To examine the role of audit supply chain determinants (EAE, IAE, TMS) on ERMS.
3. To examine the mediating role of LRMI.
4. To examine the role of ERMS in financial performance.

The contribution of this study is quite significant in different ways. First, this study introduced a relatively new variable namely; top management stress. Most of the time top management stress disturbs the risk management activities. Second, this study contributed to the literature by highlighting the vital factors to mitigate the crucial problem of RMI, particularly in Malaysian firms. Third, this study investigated a mediating variable, namely; LRMI, to fix RMI problem. Four, this study identified that LRMI is most significant in enhancing financial performance. Five, finally, this study filled the literature gap by highlighting the risk management implementation problem. Previous studies are available on risk management. However, these studies (see, for instance, Chong, Lee, Saw, Toh, & Yip, 2019; Omer, 2019; Tinggi, Jakpar, & Hui, 2019) did not consider the role of implementation in financial performance.

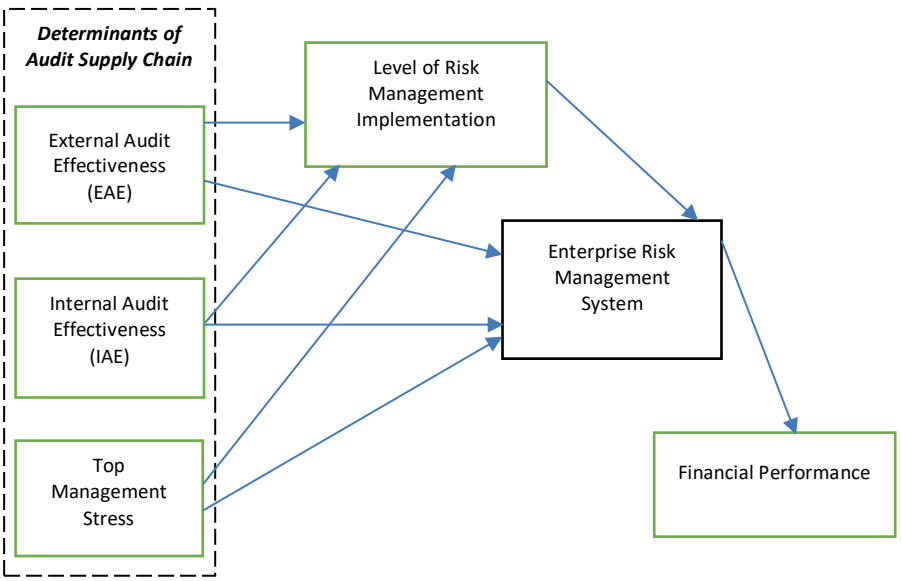

Figure 1. The theoretical framework of the study showing the relationship between determinants of audit supply chain, risk management implementation, enterprise risk management system, and financial performance

Literature Review and Hypothesis Development

Financial performance has a critical role in a firm's overall business success. In this way, risk management has a vital role to manage financial performance. Risk management practices have occupied significant place in academics, practitioners and various businesses (Huber & Scheytt, 2013). It has crucial role in firm performance and to create value for stockholders (Hillson, 2002:Basheer et al., 2019: Hafeez et al., 2018). Business communities are trying to build a unique risk management system to defend diverse types of risk. In the setting of the present study, audit effectiveness has a crucial role in developing a good enterprise management system.

ERM has a relationship with audit effectiveness. Audit committees are needed to play a serious role concerning the ERM system (Clyburn, 2012). The strong point of ERM is that it affects the firm's controls over various risks, which is more significant for auditors to take in evaluating risks as well as audit preparation (Bell & Soloman, 2002).

According to Hameed, Hashmi, Ali, & Arif (2017), EAE enhances the level of RMI as most of the high-quality audit companies emphasize on good quality ERM system (Paape & Spekle, 2011). External auditors ensure the fair utilization of credit. Credit has a relationship with success (Hameed, Mohammad, & Shahar, 2018), which has influence on risk management. Most of the companies demand a high-quality external audit to mitigate the possibility of fraudulent reporting (Desender, 2007) and to increase the level of RMI. According to Vinnari and Skaerbaek (2014), external auditors has a relationship with ERM practices. External auditors monitor the ERM implementation which affects positively the overall ERM system.

H_1: There is a positive relationship between EAE and the level of ERM implementation.

Internal audit has the ability to play an important role in implementing the various strategies to attain the company objectives (Ljubisavljević & Jovanović, 2011). Internal audit is also answerable for consolidation of management as well as audit committee of any firm (Hutchinson & Zain, 2009). Various issues related IAE become most significant based on the reason that they assists in increases the total work quality (Unegbu & Kida, 2011). IIA (2010) has described the IAE as "the degree to which recognized objectives are achieved". It is anticipated that IAE support organizations to attain different objectives (Dittenhofer, 2001**).** Internal audit role in attaining the company goals has been documented in the literature **(**Badara & Saidin, 2013; Leung *et al.,* 2006; Lenz & Hahn, 2015; Soh & Martinov-Bennie, 2011**).** Most of the studies highlight that the competency of internal auditors is also most important in enterprise business (Seol Sarkis & Lefley, 2011; Ul-Hameed *et al.,* 2019).

In case of internal audit, different studies in the scope of risk management activities (e g., Arena et al., 2010; Knechel, 2007; Mikes, 2008; 2009; 2011; Miller et al., 2008; Power, 2004; 2007; 2009; Robson et al.,2007) links the ERM with internal audit. For instance, Spira and Page (2003) described that internal audit alignment with risk management is most important.

According to the National Accounting Board (2008), internal audit is the support to operationalizing risk management. It shows that level of RMI and internal audit have a relationship with each other. Hameed, Hashmi, Ali, and Arif (2017) revealed positive association between the level of RMI and IAE. Various scholars have confirmed that internal auditors generally experts in ERM (e.g., Sarens et al., 2009; Spira & Page, 2003) which affect positively of ERM. Hence, it is evident that;

H_2: There is a positive relationship between IAE and level of ERM implementation.

Apart from audit effectiveness, various prior studies show that the relationship of top management (see, for instance, Barton et al., 2002). Top management supports effect positively on the ERM system (Dabari & Saidin, 2014) but top management stress effects negatively. Top management like directors of companies has the major duty to ensure proper risk management practices to protect the assets of company (Dabari & Saidin, 2014). It indicates that top management support and ERM implementation level has a relationship with each other. However, top management stress may affect adversely.

In case of RMI, top management stress can be defined as; it is the stress exerted by the top management of the company on its subordinates to promote RMI practices. According to Lazarus and Folkman (1984), it is the nonspecific feedback of the human body to various demands on it. But, the human body has only a limited capability to respond to it. In this case, humans respond negatively.

Nekoranec and Kmosena (2015) explained that stress decreases performance. Therefore, in RMI practices, top management stress decreases the level of RMI. Stress-related factors decrease the satisfaction of employees (Michie & Williams, 2003). However, satisfaction is essential for motivation (Hussain et al., 2013). Hence, top management stress decreases the satisfaction level of employees which decreases the RMI level.

Beasley et al., (2005) explained that top management of companies is vital for the actual implementation of ERM. It means that top management has the role to encourage or discourage the ERM implementation. However, Dar et al., (2011), stress has a significant negative association with performance. A good top management help is needed to the provision of various resources, the structure as well as the creation of the culture of risk management which improves implementation. However, there is a negative connection between top management stress and the level of RMI.

H_3: There is a negative relationship between top management stress and the level of ERM implementation.

As it is discussed above, EAE, IAE and top management stress have a strong connection with the level of RMI. Moreover, there is also a relationship between the RMI and the ERM system. Proper implementation of risk management enhances the ERM system. According to Hameed, Hashmi, Ali, and Arif (2017), there is a significant association between level of RMI and ERM system.

H_4: There is a positive relationship between the level of RMI and the ERM system.

H_5: The level of ERM implementation mediates the relationship between EAE an ERM system.

H_6: The level of ERM implementation mediates the relationship between IAE an ERM system.

H_7: The level of ERM implementation mediates the relationship between top management stress and the ERM system.

Moreover, ERM practices have a positive effect on ensuring smooth operations infirm which effect positively on the financial performance of companies. It is evident from the studies that ERM system affects financial performance (Laisasikorn & Rompho, 2019; Omar, & Javaria, 2019). Moreover, external audit, internal audit, as well as top management, has relationship with ERM (Cohen, Krishnamoorthy & Wright, 2017; Iskandar, Jamil, Yatim & Sanusi, 2018; Wijethilake & Lama, 2019). Therefore, following hypotheses are proposed;

H_8: EAE has a positive relationship with the ERM system.

H_9: IAE has a positive relationship with the ERM system.

H_{10}: Top management stress has a negative relationship with the ERM system.

H_{11}: ERM system has a positive effect on financial performance.

Research Methodology

Suitable technique selection for the data analysis must be in line with the research objective (Ul-Hameed, Mohammad, & Shahar, 2018). The current research study inspected the relationship between audit effectiveness and top management stress with an ERM system with the help of the mediating role of RMI level. While considering the objectives as well as research population and sampling, quantitative method was selected (Burns & Grove, 1993:Basheer et al., 2019). However, the current research study based on cross-sectional research design.

Comrey and Lee (1992) provided a sample using inferential statistics. According to this series, "sample below 50 is observed to be a weaker sample; sample of 100 sizes will be weak; 200 samples will be considered adequate; 300 sample will be considered as good; 500 very good whereas 1000 will be excellent." Therefore, 300 sample size was selected (Basheer et al., 2018).

The 5-point Likert scale was preferred. It decreases the frustration level of respondents and increases the quality of data (Hameed, Basheer, Iqbal, Anwar, & Ahmad, 2018). Three hundred (300) questionnaires used among the managerial employees of listed firms in Malaysia by using simple random sampling technique. Only those employees were selected having direct involvement in companies audit practices and risk management practices. First of all, the list of employees with their email address were obtained from the main head office. After that respondents were selected randomly. Questionnaires were distributed by using the email survey. Objective of the study was clearly defined in the email. It was insured that response will remain confidential and only be used for academic purposes. Moreover, two remainders were sent to the respondents those who did not respond to the survey. One hundred eighty-five (185) questionnaires were returned. Fifteen (15) questionnaires were incomplete and excluded. Therefore, one hundred seventy (170) questionnaires were used to get results.

The questionnaire was involved in to two sub-sections. The first part was comprised of personal information of respondents such as age, income, gender and designation. The second part consisted of key variables of the study such as EAE, IAE, TMS, LRMI level, ERM system and financial performance. EAE was measured with the help of five items. These items were measured EAE based on the effectiveness of external audit towards risk management. IAE was measured through four items. These items were measured IAE based on the effectiveness of internal audit to handle various risk management issues among the organizations. TMS was measured by using five research items which were comprised on the management stress towards their employees. Five items were used to measure LRMI that how the implementation of risk management effect on overall ERMS. ERMS was measured with seven items in relation to the performance. Finally, financial performance was measured through five items based on return on assets, return on equity, return on sales, increase in investment and return on investment by making the comparison with competitors for last three years. Additionally, the initial screening out of data is shown in Table 1.

Table 1. *Initial Screening of Data*

	Mean	Median	Min	Max	SD	Kurtosis	Skewness
EAE1	2.92	3	1	5	1.152	-0.612	-0.054
EAE2	2.933	3	1	5	1.037	-0.341	0.136
EAE3	2.88	3	1	5	1.254	-0.947	0.066
EAE4	3.053	3	1	5	1.176	-0.913	-0.105
EAE5	3.173	3	1	5	1.269	-1.061	-0.094
TMS1	2.893	3	1	5	1.292	-1.179	-0.024
TMS2	2.973	3	1	5	1.286	-1.15	0.166
TMS3	2.88	3	1	5	1.346	-1.168	0.157
TMS4	3.013	3	1	5	1.281	-1.134	-0.064
TMS5	2.973	3	1	5	1.346	-1.288	-0.017
LRMI1	3.12	3	1	5	1.131	-0.54	-0.072
LRMI2	3.08	3	1	5	1.105	-0.523	-0.101
LRMI3	3.08	3	1	5	1.129	-0.577	-0.161
LRMI4	3.107	3	1	5	1.173	-0.684	-0.212
LRMI5	3.16	3	1	5	1.084	-0.31	-0.263
ERMS1	3.12	3	1	5	1.095	-0.577	-0.119
ERMS2	3.16	3	1	5	1.108	-0.651	-0.025
ERMS3	3.227	3	1	5	1.217	-0.721	-0.313
ERMS4	3.307	3	1	5	1.095	-0.692	-0.268
ERMS5	3.187	3	1	5	1.128	-0.561	-0.265
ERMS6	3.173	3	1	5	1.147	-0.713	-0.079
ERMS7	3.293	3	1	5	1.068	-0.264	-0.549
IAE1	2.88	3	1	5	1.346	-1.168	0.157
IAE2	3.013	3	1	5	1.281	-1.134	-0.064
IAE3	2.973	3	1	5	1.346	-1.288	-0.017
IAE4	3.133	3	1	5	1.135	-0.571	-0.101
FP1	2.92	3	1	5	1.241	-0.97	0.155

FP2	3.213	3	1	5	1.225	-1.128	-0.021
FP3	3.067	3	1	5	1.204	-0.999	-0.084
FP4	3.027	3	1	5	1.243	-1.082	0.076
FP5	3.12	3	1	5	1.188	-0.863	-0.043

Data Analysis and Results

Measurement Model

Evaluation of measurement model, reliability and validity was observed. The measurement model was used accurately through SmartPLS 3.0 by following Ringle et al., (2015). For this purpose, factor loading, composite reliability (CR), average variance extracted (AVE), convergent validity and discriminant validity were examined. Factor loading and AVE must be more than 0.5 (Hair et al. 2010). Moreover, CR should be higher than 0.7 (Fornell & Larcker, 1981). Figure 2 shows the factor loading. Additionally, effect size (f^2) is also shown in Figure 2. It illustrates the effect of each variable on other variable.

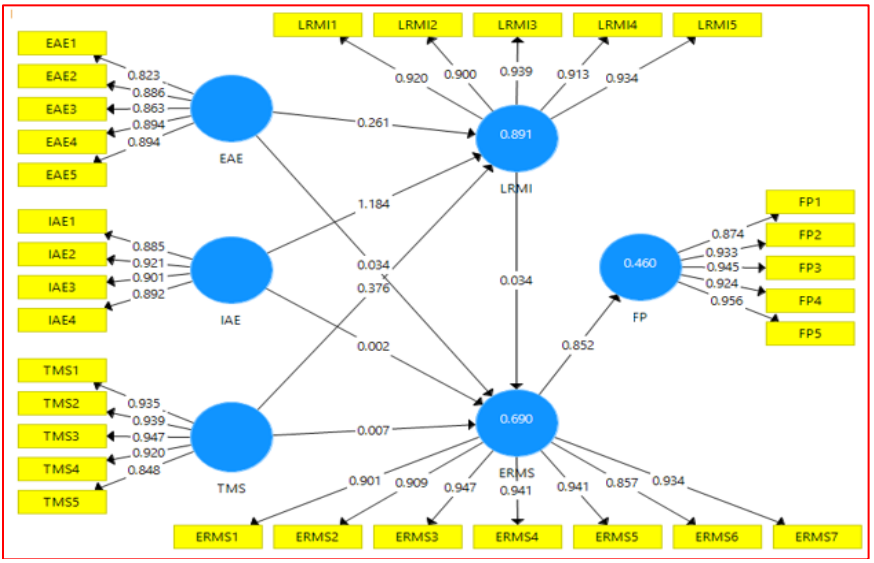

Figure 2. Measurement Model

Table 2. *Measurement Model Findings*

Construct	Indicators	Loadings	CR	AVE
External Audit Effectiveness (EAE)	EAE1	.823	.941	.761
	EAE2	.886		
	EAE3	.863		
	EAE4	.894		
	EAE5	.894		
Internal Audit Effectiveness (IAE)	IAE1	.885	.944	.809
	IAE2	.921		
	IAE3	.901		
	IAE4	.892		
Top Management Stress (TMS)	TMS1	.935	.964	.843
	TMS2	.939		
	TMS3	.947		
	TMS4	.920		
	TMS5	.848		

Level of Risk Management Implementation (LRMI)	LRMI1	.920	.966	.849
	LRMI2	.900		
	LRMI3	.939		
	LRMI4	.913		
	LRMI5	.934		
Enterprise Risk Management (ERM) System (ERMS)	ERMS1	.901	.974	.845
	ERMS2	.909		
	ERMS3	.947		
	ERMS4	.941		
	ERMS5	.941		
	ERMS6	.857		
	ERMS7	.934		
Financial Performance (FP)	FP1	.874	.955	.840
	FP2	.933		
	FP3	.945		
	FP4	.924		
	FP5	.956		

Table 2 highlighted that all the values are more than acceptable range. As factor loading is more than 0.5, CR is more than 0.7 and AVE is also more than 0.5 for all constructs. Furthermore, model external consistency was determined with the help of discriminant validity which is given in Table 3 by using AVE square root.

Table 3. *Discriminant Validity*

	EAE	EP	ERMS	IAE	LRMI	TMS
EAE	*0.873*					
EP	0.812	*0.927*				
ERMS	0.734	0.678	*0.919*			
IAE	0.78	0.724	0.807	*0.915*		
LRMI	0.806	0.714	0.795	0.901	*0.921*	
TMS	0.767	0.742	0.784	0.869	0.834	*0.919*

Structural Model

Bootstrapping has been used in present study to assess the structural model. This method is considered as one of the potential process to test and analyze the mediation effect (Zhao, Lynch, & Chen 2010; Hayes, 2009). Additionally, Hair et al. (2014) suggested that PLS-SEM bootstrapping method for indirect effect is suitable for quantitative studies.

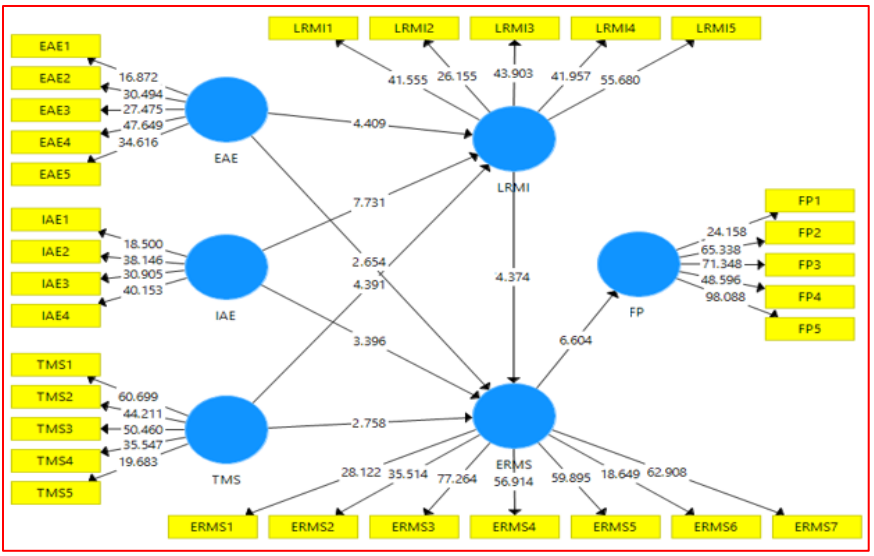

Figure 3. Structural Model Assessment

Figure 3 displays the bootstrapping outcomes. The model shows the path coefficient, t-statistics, and p-value of an outer model for all variables. However, the acceptance and rejection of the hypothesis are given below in Table 4.

Table 4. *Structural Model Assessment (Direct Effect)*

	Estimate	(M)	SD	T Statistics	P Values
EAE -> ERMS	0.184	0.198	0.07	2.654	0.013
EAE -> LRMI	0.27	0.278	0.061	4.409	0
ERMS -> EP	0.678	0.688	0.103	6.604	0
IAE -> ERMS	0.159	0.098	0.047	3.396	0
IAE -> LRMI	0.493	0.485	0.064	7.731	0
LRMI -> ERMS	0.311	0.321	0.071	4.374	0
TMS -> ERMS	-0.229	-0.27	0.084	2.758	0.011
TMS -> LRMI	-0.82	-0.818	0.187	4.391	0

Table 4 shows that all hypothesis is accepted. EAE, IAE and top management stress (TMS) have a significant relationship with the level of RMI (LRMI) as the significant value is 0.00. Positive beta value for EAE and IAE shows a positive relationship. It indicates the increase in audit effectiveness will increase the level of RMI. Top management stress (TMS) has negative beta value (-0.82), which shows a negative relationship between TMS and level of RMI. It indicates that an increase in TMS will discourages the level of RMI. Similar results were found in case of top management stress and ERM system. Moreover, level of RMI has a significant positive relationship with ERM system. Higher the level of RMI, higher will be the ERM system. Thus, all direct hypotheses are supported.

Moreover, Table 5 is obtained from SmartPLS which displays the results of mediation analysis. In this study, the technique of Preacher and Hayes (2004;2008) was followed. P-value and t-value are significant which mean that the mediation effect is significant. Hereafter, level of RMI mediates the relationship. Thus, all indirect hypotheses are supported.

Table 5. *Structural Model Assessment (Indirect Effect)*

	Estimate	(M)	SD	T Statistics	P Values
EAE -> LRMI -> ERMS	0.211	0.217	0.054	3.920	0.000
IAE -> LRMI ->ERMS	0.166	0.170	0.043	3.86	0.000
TMS -> LRMI -> ERMS	-0.626	-0.628	0.153	4.080	0.000

Variance Explained (R^2)

Moreover, Table 6 shows the R^2 value, which is 0.891 for the level of RMI. EAE, IAE and top management stress making 89.1% change in the level of RMI (LRMI). However, R^2 is 0.69 for the ERM system. It indicates that all four variables are making 69% change independent variable. R^2 value for financial performance is 0.460. It is revealed in Table 6.

Table 6. *R-Square (R^2)*

Latent Variable	Variance Explained (R^2)
Level of RMI (LRMI)	89.1%
ERM System (ERMS)	69%
Financial Performance (FB)	46%

Assessment of Predictive Relevance (Q^2)

Using the blindfolding procedure, the current study employed Stone-Geisser test for Q^2 of the model (Geisser, 1974; Stone, 1974). The cross-validated redundancy value (Q^2) must be higher than zero (Chin, 1998; Henseler *et al*., 2009). Table 7 shows that Q^2 is 0.497 which is higher than acceptable value.

Table 7. *Predictive Relevance (Q^2)*

	SSO	**SSE**	**Q^2 (=1-SSE/SSO)**
EP	375	239.013	0.363
ERMS	525	241.391	0.54
LRMI	375	110.982	0.704

Discussion and Conclusion

The current study revealed that IAE and EAE are the drivers of the ERM system. These results are consistent with the prior studies, as it is identified that various issues related to IAE become most significant based on the reason that it assist to increase the total work quality (Unegbu & Kida, 2011). Many studies emphasized that the competency of internal auditors is also most important in enterprise business (Seol Sarkis & Lefley, 2011; Ul-Hameed *et al.,* 2019). Audit effectiveness significantly enhances the ERM system. Other studies also consistent with the current study and proved that EAE and IAE have positive role in risk management (Krishnan, G., & Peytcheva, 2019; Ojo, 2019). In addition, according to Vinnari and Skaerbaek (2014), external auditors have a relationship with ERM practices which lead to better implementation of risk ERM. More specifically, EAE and IAE enhance the level of RMI, and level of RMI enhances the ERM system. These two elements have a key role to mitigate the problem of RMI, particularly in Malaysian listed firms. However, top management stress decreases the level of RMI. When the top management exerts stress on subordinates, it decreases the level of RMI rather than positive increase. Thus, it ultimately discourages the overall ERM system. Additionally, the current research study has validated the results of Hameed et al., (2017), as the IAE and EAE have a significant positive relationship with the level of RMI, and level of RMI has significant positive relationship with an ERM system. Finally, it is concluded that better ERM system increase the financial performance.

Malaysian listed firms should enhance their audit quality to mitigate the RMI problem. Additionally, top management should encourage their subordinates to develop various risk management strategies. It will automatically enhance the ERM system. However, regulatory

influence may affect the ERM system. Hence, future research is needed to examine the moderating role of regulatory influence.

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