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Assessment of Risk Management Practices in the Public Sector of Malaysia

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Abstract

Public sectors around the world, especially in the developing countries, are not functioning well due to widespread fraud, governance, corruption, and inefficacy. For this reason, the world's public sectors need to improve their efficacy by using a sound risk management system. This study attempts to comprehend the phenomenon of current risk management practices among the public sector employees in different service schemes in Malaysia. A questionnaire survey was utilized to collect primary data from 194 department heads in Malaysia's federal ministries. The collected data was analysed using descriptive statistics and factor analysis. Findings revealed that 94.7% of respondents agreed to implementing risk management in their respective departments, but the level of priority for these risk management factors differs based on the service schemes. This study will assist policymakers to identify what is needed to enhance risk management practices in the public sector.

Keywords: *Public Sector, Risk Management, Factor Analysis, Malaysia*

1. Introduction

Risk is integral in both public life and in business and it is part and parcel of many organizational activities and management (Tchankova, 2002). In general, risk is defined as the potential danger, injury, loss, and other unwanted outcomes (Rasid, Rahman, & Ismail, 2011). Risk appears as the environment where a business operates becomes more and more uncertain, volatile, unpredictable, and unstable (Smallman, 1996; Abdullah et al., 2015). According to Tummala and Achoenherr (2011), risk involves the joint potential or frequency of a stated danger occurring and the outcome's magnitude. Risk is usually linked to an unwanted or unpredicted loss such as a negative and uncertain consequence (Tummala & Achoenherr, 2011).

The major component of what an organization does is risk management and the objective is to ensure that all other activities related to management directly achieve the organization's objectives efficiently (Tchankova, 2002). Likewise, Archbold (2005) states in his study that risk management involves a process utilized to recognize possible liabilities and risks which could lead to potential loss to both private and public organizations. Carvalho and Rabechini (2015) describe risk management as uncertainty management in projects. Thus, to deal with risks in the current atmosphere of corporate scandals and the increasing density of global networks, knowledge management is a major mechanism for managing risks (Neef, 2005). The increase in business scandals such as financial crises and unpredictable downfalls of many large corporations and financial institutions in the US has led to dire consequences. These include declining economic activities, public losing confidence in corporations and a volatile financial system (Ng et al., 2013).

Worldwide legislative reforms have been seen due to the increase in concerns on practices of risk management. The Malaysian Central Bank (BNM) has also changed some financial regulatory measures to incorporate corporate governance values into the financial services sector (Ng et al., 2013). Consequently, the risk management concept, corporate governance, as well as internal controls are closely connected while the committee tasked to deal with risk management acts as the main governance mechanism to help the management and board manage such risks (Ng et al., 2013). Barafort et al. (2017) state that the IT settings of an organization play a significant role in risk management.

Risk management is directly dependent on the changes that occur in an organization's internal as well as external environment since the environmental changes need continuous attention to identify and manage risks (Tchankova, 2002). In a practical way, several strategies concerning risk management are available but they greatly vary depending on the type of organization such as the management styles and organizational objectives (Archbold, 2005). Said et al. (2016) suggest that risk management strategies that are effective are expected to assist an organization to achieve its business goals while simultaneously improving the responsibility of financial reporting and maintaining a good reputation. However, prior studies mostly focused on risk management in the private sector as well as secondary data and this present study seeks to narrow this gap in our knowledge as much as possible (Wiengarten et al., 2016; Iwona, 2016; Ali et al., 2017).

Although risk management strategies differ based on what organizations do, the five stages of risk management, i.e. identification of risk, measuring risk, assessing risk, evaluating risk, as well as risk controls and monitoring, are still suitable and applicable to all institutions (Archbold, 2005). Likewise, studies carried out by Tummala and Leung (1996), Tummala and Achoenherr (2011), Rasid et al. (2011) and Giannakis and Papadopoulos (2016), reveal a similar outcome in terms of the steps taken in risk management involving identification of risk, risk measurements, assessment, analysis of risk and evaluation of risk, and risk controls thus defined as the risk management process or RMP. This study examines the risk management practices in the public sector of Malaysia. This study chose Malaysia due to the many recent concerns that are now very evident in its public sector with reports of corruption, fraud, governance failures, poor financial management, etc. These events have raised numerous questions about the accountability of the public sector in its obligation to uphold the public's trust. This study hopes to help the government to find those factors that can nurture and promote the value of accountability employing sound risk management practices.

2. Research Methodology

2.1. Data Collection and Sampling

Data collection was carried out from January to June 2016 and involved distributing a face-to-face questionnaire survey to department heads from 6 Malaysian federal ministries. The 6 ministries are the Ministry of Communication and Multimedia, the Ministry of Education, the Ministry of Health, the Ministry of Defence, the Ministry of Agriculture and Agro-Based Industry and the Ministry of Rural and Regional Development. These ministries were selected because they have been often reprimanded in the Report by the Auditor General for three consecutive years from 2012 to 2014 due to issues including accountability, integrity, ethics, as well as mismanagement. Furthermore these 6 ministries include a total of 402 sub-departments. The study targeted 210 samples utilizing the systematic random sampling approach, and including 2 listed departments in every ministry. The selection was carried out beginning from a department's second list, fourth list, sixth list, and so on to reach 402 and ended with 210 items in the samples. Finally, 194 questionnaires were used in the data analysis from the 210 target samples.

Table 1: Distribution samples in the Malaysian ministries and departments

Ministries & Departments	No. of Projected Sub-departments	No. of Actual Samples
The Ministry of Communications and Multimedia		
1. Department of Broadcasting Malaysia	13	10

2. Department of Information Malaysia	10	10
The Ministry of Education		
3. Education Department of Johor	10	10
4. Education Department of Kelantan	10	10
5. Education Department of Labuan	10	10
6. Education Department of Pahang	10	10
7. Education Department of Perak	10	10
8. Education Department of Putrajaya	10	10
9. Education Department of Sabah	10	5
10. Education Department of Selangor	10	10
The Ministry of Health		
11. Health Department of Perlis	6	6
12. Health Department of Selangor	6	6
13. Health Department of Terengganu	6	6
14. Health Department of Sarawak	6	6
15. Health Department of Kuala Lumpur	6	6
16. Health Department of Perak	6	6
17. Health Department of Melaka	6	6
18. Health Department of Kedah	6	6
The Ministry of Defence		
19. Department of Veteran Affairs	7	5
The Ministry of Agriculture and Agro-based Industry		
20. Fishery Department	13	10
21. Agriculture Department	12	12
The Ministry of Rural and Regional Development		
22. Community Development Department	12	12
23. Rubber Industry Smallholders Development Authority	15	12
Total	210	194

2.2 Measurements of Variables

Each respondent was asked to provide their perspective on the practices which promote management of risk in their departments using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Table 2 shows the risk management that was measured utilizing the 12 items adapted from Mancuso's (2012) study.

Table 2: Factors of risk management measurement in the public sector of Malaysia

Code	Description of Items
RM1	My department has a risk management policy in place.
RM2	My department consults subject matter experts and representatives from all areas of organizations to develop the risk management policy.
RM3	The policy and all procedures and training that the department has in place are being well documented.
RM4	My department reviews risk management policy annually/after department changes/after experiencing a risk.
RM5	My department trained the staff and third party collaborators on the risk management policy.
RM6	My department takes a risk in seizing and exploiting new opportunities.
RM7	My department makes large, bold decisions despite uncertainty.
RM8	My department considers our organizational strategic are well specified.
RM9	My department is monitoring government priorities.
RM10	My department is focusing most of its attention on driving organizational success.
RM11	My department is keeping up to date with international developments/ technologies.

2.3 Data Analysis

The collected data was analysed using the descriptive statistics and factor analysis techniques made possible by SPSS (Lamash & Josman, 2020; Tekler et al., 2019). Descriptive statistics are normally utilized to analyse the overall features of the data while factor analysis serves to calculate data consistency in a study. Data reliability is measured through the Cronbach's alpha test and data normality is examined using the skewness and kurtosis tests. Lastly, data validity is tested with the Kaiser-Meyer Olkin test and Barlett's test.

3. Findings and Discussion

3.1 Demographic Profiles

Relevant demographic information was gathered from the respondents such as ethnicity, gender, age, academic qualification, type of qualification, job position, department, grade, as well as length of employment. A summary of the demographic information is shown in Table 3.

Demographic Profiles		Frequency (N=194)	Percentage (%)
Gender	Male	79	40.7
	Female	115	59.3
Ethnicity	Malay	176	90.7
	India	11	5.7
	Chinese	7	3.6
Age	20 – 30 years	24	12.4
	31 – 40 years	64	33.0
	41 – 50 years	74	38.1
	51 years and above	32	16.5
Academic Qualifications	Degree	100	51.5
	Master	90	46.4
	PhD	4	2.1
Types of Qualifications	Accounting	98	50.5
	Non-Accounting	96	49.5
Job Position	Supporting Staff	7	3.6
	Management and Professional	176	90.7
	Top Management	11	5.7
Department	Accounting	45	23.2
	Administrative	78	40.2
	Audit	10	5.2
	Finance	46	23.7
	Others	15	7.7
Grade	41	101	52.1
	44	21	10.8
	48	70	36.1
	52	2	1.0
Length of Employment in the Current Organization (no. of years)	Less than 1 year	11	5.7
	1 – 3 years	10	5.2
	4 – 5 years	23	11.9
	5 years and above	150	77.3

The table shows that 59.3% of the respondents are female while 38% of them are in the 41-50 age bracket with 33% being in the 31-40 age bracket. Most of the respondents are Malays and they account for 90.7%. All the respondents possessed a basic Bachelor degree qualification. 90.7% of the respondents' job positions are as management professionals. As much as 40% of the respondents work in the administrative area while 23.7% of them are in the financial services, and only 5.2% work in accounting. The remaining 7.7% work in other departments as officers in the legal, tax, education, health, procurement, and IT departments. Just over half of the respondents (52.1%) belong to Grade 41, while Grade 48 comprises 36.1% respondents and Grade 44 has 10.8%. 77% have been working for more than 5 years in the present organization while only 12% have been working for 4 to 5 years in the present organization.

3.2 Factor Analysis

The variables' consistency is determined by using factor analysis to establish the risk management. All the variables' factor loadings in this study are more than 0.6 with the exception of items RM10 and RM12 as shown in Table 4. Therefore, following the removal of these two variables, the values of the factor loading range from 0.6 (RM9) to 0.88 (RM7). This demonstrates that 10 out of the 12 variables can measure risk management in Malaysia's public sector.

3.3 Descriptive Analysis

3.3.1 Service Scheme-wise Evaluation

According to all the service scheme groups, the highest average outcome for the factors of risk management is at 4.4, including the practices undertaken by the administration and finance schemes group. Meanwhile the lowest mean score is at 4.1, including what the accounting and audit schemes group do (Table 4). Moreover, the overall average score for risk management is 4.3.

Table 4: Risk Management factors according to service schemes

Service Schemes	RM1	RM2	RM3	RM4	RM5	RM6	RM7	RM8	RM9	RM10	RM11	RM12	All Average
Accounting	4.0	4.1	4.3	4.2	4.2	4.0	3.8	4.0	4.1	4.3	4.3	4.2	4.1
Administration	4.4	4.4	4.6	4.7	4.6	4.3	4.0	4.4	4.3	4.3	4.7	4.7	4.4
Audit	4.1	4.0	4.4	4.0	4.0	3.5	3.7	4.1	4.1	4.2	4.2	4.5	4.1
Finance	4.4	4.4	4.5	4.6	4.6	4.3	4.0	4.3	4.4	4.4	4.6	4.5	4.4
Others	4.3	4.2	4.1	4.4	4.2	4.4	3.9	4.1	4.1	4.3	4.4	4.3	4.2
All Average	4.3	4.3	4.5	4.5	4.4	4.2	3.9	4.2	4.3	4.3	4.5	4.5	4.3
Factor Loading	0.71	0.74	0.63	0.80	0.74	0.77	0.88	0.74	0.60	0.43	0.69	0.12	

* The factor loadings of the parameters less than 0.6 are considered not suitable for measuring risk management in the Malaysian public sector

The accounting service scheme group has a total average score of 4.1, with the highest score being 4.3 for RM3, RM10, as well as RM11. Factors RM1, RM6, and RM8 show scores that are smaller in comparison to the average total scores. The administrative scheme group has a total average score of 4.4 with the highest score being 4.7 for RM4, RM11, as well as RM12, and RM7 factor has the lowest score at 4.0. Moreover, RM6, RM9, and RM10 indicate scores that are smaller in comparison to the average total scores. The overall risk management score for the audit scheme group is 4.1, with factors RM6 and RM7 scoring only

3.5 and 3.7, respectively. The RM12 factor had the highest score at 4.5. As well, the RM7 score is smaller when compared to the average scores. Lastly, the finance scheme group has a total average score of 4.4 with RM4, RM5, and RM11 factors having the highest scores at 4.6, while RM7 factor has the lowest score at 4.0. In addition, RM6 and RM8 scores are smaller in comparison to the average scores.

3.3.2 Factor-wise Evaluation

This study aims to measure the practices of risk management in the public sector by utilizing 12 variables. According to the participants' responses, 94.7% agreed that they implement the stated factors of risk management while 2.2% responded that they did not, as revealed in Table 5. All the factors of risk management reveal that factors RM3, RM4, RM11, as well as RM12 have the highest mean score at 4.5. Meanwhile, factor RM7 has the lowest mean score at 3.9 as stated in Table 4.

Table 5: Frequency scores of risk management factors

Score	RM1	RM2	RM3	RM4	RM5	RM6	RM7	RM8	RM9	RM10	RM11	RM12	All Average
1	0	0	0	4	4	4	0	0	0	0	0	0	1.0
2	5	4	4	1	1	1	6	4	4	0	5	4	3.3
3	2	7	4	3	13	10	12	9	3	6	1	3	6.1
4	124	117	80	73	63	113	168	117	127	121	73	80	104.7
5	63	66	106	113	113	66	8	64	60	67	115	107	79.0
Disagree (1-2)	5	4	4	5	5	5	6	4	4	0	5	4	4.3
Agree (4-5)	187	183	186	186	176	179	176	181	187	188	188	187	183.7
Disagree (1-2) %	2.6	2.1	2.1	2.6	2.6	2.6	3.1	2.1	2.1	0.0	2.6	2.1	2.2
Agree (4-5) %	96.4	94.3	95.9	95.9	90.7	92.3	90.7	93.3	96.4	96.9	96.9	96.4	94.7
Minimum	2	2	2	1	1	1	2	2	2	3	2	2	2
Maximum	5	5	5	5	5	5	5	5	5	5	5	44	7
Std. Dev.	0.6	0.6	0.6	0.7	0.8	0.7	0.5	0.6	0.6	0.5	0.6	0.6	0.5

According to the factors of risk management practices in the public sector, 96.4% of the respondents revealed *they have a risk management policy in place* (RM1) as shown in Table 5. The employees in the administrative and finance schemes perceived it to be the highest while the employees from the accounting scheme regarded it as the least as shown in Table 4. Compared to the remaining service schemes, employees from the audit scheme perceived it as being less than the average score.

Furthermore, 94.3% of participants agreed that their departments *consult subject matter experts and representatives from all areas of organizations to develop risk management policy* (RM2) as demonstrated in Table 5, and employees from the administration and finance scheme deemed it to be the highest while those from the audit scheme regarded it the lowest according to Table 4. According to the results from the other service schemes, employees from accounting perceived it to be less than the average.

Table 5 shows that 95.9% of the respondents agree that *the policy and all the procedures and training that the department has in place are being well documented* (RM3). The employees under the administrative scheme claim it to be the highest and employees under the accounting scheme claim it is the least as shown in Table 4. According to the results from the remaining service schemes, respondents from the audit scheme regard as less than the average level. Table 5 shows that 95.9% of the respondents agree with *review risk management policy annually/after department changes/after experiencing a risk* (RM4). The

respondents under the administrative scheme perceive it to be highest while respondents from the audit scheme believe it is the least as shown in Table 4. Referring to the results for the remaining service schemes, respondents from the accounting scheme regard them to be less than the average level.

Table 5 shows that 90.7% of the respondents agree that *they trained the staff and third party collaborators on the risk management policy* (RM5). The respondents working in the administrative and finance scheme perceive it to be the highest while respondents from the audit scheme claim it is the least as shown in Table 4. For the outcomes obtained from the remaining service schemes, respondents from accounting regard them to be less than the average level.

Table 5 shows that 92.3% of the respondents agree that *they take risk in seizing and exploiting new opportunities* (RM6). The respondents under the administrative and finance scheme perceive it to be highest and respondents from the audit scheme claim it to be the least as shown in Table 4. According to the results from the remaining service schemes, respondents from the accounting scheme believe them to be less than the average level.

Table 5 shows that 90.7% of the respondents agree they *make large, bold decisions despite uncertainty* (RM7). The employees under the administrative and finance scheme practice it the most and respondents from the audit scheme practice it the least as shown in Table 4. From the remaining service schemes, the results show that respondents from the accounting scheme practice it less than the average level.

Table 5 indicates 93.3% of the respondents agree that their strategic are well specified (RM8). The respondents under the administrative scheme practice it the most and respondents from the accounting scheme practice it the least as reported in Table 4. According to the results from the remaining service schemes, respondents in auditing practice it less than the average level.

Table 5 reveals that 96.4% of the respondents agree *they are monitoring government priorities* (RM9). The respondents under the finance scheme practice it the most and respondents from the accounting and audit scheme practice it the least as shown in Table 4.

Finally, Table 5 shows that 96.9% of the respondents agree *they are keeping up to date with international developments/ technologies* (RM11). The respondents under the administration scheme practice it the most while respondents from the audit scheme practice it the least as shown in Table 4.

3.4 Diagnostic Tests

The normality testing was carried using the skewness and kurtosis tests. Skewness refers to something that is out of the norm based on the curve's extension, whether it curves out to the left or right. It is identified as being positively skewed if the curve extends to the right more, and negatively skewed if it extends to the left more (Wuensch, 2014). Moreover, Kurtosis provides the measurement of the flatness of the symmetric distribution at the top. The rule of thumb is that both the skewness and kurtosis are regarded as being normally distributed if the values are between -2 to +2. The distribution of the data is regarded as being normal if the values of the skewness and kurtosis are within this range. However, the skewness value in this study is -1.836 and the kurtosis value is 17.5, which shows being outside the range of

normality or in other words the data is not distributed normally. Nevertheless, Field (2013) explains that the data can be regarded as normal if it exceeds thirty and in this study the sample size is 194.

Table 6: Reliability testing for risk management factors

Cronbach's Alpha	0.896
Eigenvalue	8.23
Eigen % variance	82.31
% of variance	82.31
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.662
Bartlett's Test of Sphericity Approx. Chi-Square	2866.319
Bartlett's Test of Sphericity Sig.	0.00000

The value of Cronbach's alpha on risk management as shown in Table 6 is 0.896. It proves that the items' reliability in the questionnaire is excellent (George & Mallery, 2016). The eigenvalues test indicates that the factors used for risk management are able to explain 82.31% of the variance. The Kaiser-Meyer Olkin test suggests a value higher than 0.6, at 0.662. The Bartlett's Test of Sphericity Approx. Chi-Square indicates the significance of the value (Chi-Square = 2866, $p < 0.0000001$). Therefore, the sample is found to be adequate for continuing with the factor analysis so that the risk management can be calculated.

4. Conclusions and Recommendations

Malaysia has envisioned becoming a properly functioning developed country by the year 2020; as such, many good strategies have to be utilized to make this happen, especially for the level of risk management in the public service sector. This study has attempted to calculate the current level of risk management practices in the public sector in Malaysia through the use of 12 related factors. It emerged that 94.7% of the respondents asserted that they practice the stated factors of risk management, nevertheless, various service schemes prioritized the 12 factors differently. Overall, risk management practices in administration and finance schemes group were the highest in comparison to the other scheme groups. Meanwhile, risk management practices in the accounting and audit scheme group were lower in contrast to the general average score.

The Malaysian government continues to initiate programmes with the objective of promoting and motivating the risk management practices throughout the public sector and its departments so that they are much more transparent in their operations. Nevertheless, the anticipated effect has not been observed as reported in the Corruption Perception Index (CPI) by Transparency International in 2014, where Malaysia only went up in ranking by three points from 53 to 50 based on a survey of 175 countries. This confirms that the measures taken to overcome corruption in the country are still lacking (Zainal, 2014; Said et al., 2016; Alam et al., 2018). It demonstrates that even though the government has undertaken important steps to change what the public perceive, much more concerted effort is required to improve the public's confidence in the public sector's risk management practices.

It is not enough to simply transform the bureaucracy's structure to improve the current situation. The entire public sector must be changed to develop an efficient and dependable sector that can implement sufficient risk management practices backed by an efficient assessment system. Improving the risk management practices would certainly help achieve what the stakeholders want to ensure accountability in the public sector. It is recommended that every ministry and department reports and produces its risk management and ethical

activities to make sure that a good governance culture is created and maintained. The report should be accessible to the public to develop a sense of awareness and to educate them on the critical steps that have been carried out to curtail misconduct by the government's employees.

The findings of this study could be utilized to assist the different agencies and departments to enhance their risk management levels based on the associated service schemes. Additionally, the risk management factors measures and methods used in this study could help the Malaysian government to create measurement techniques that document accountability in the public sector. However, this study also had to face some limitations that could be resolved in future research. This study only utilized six ministries for analysis although the Malaysian government has in total 24 ministries and the questionnaire was only given to department heads. The levels at which risk management is practised could differ based on the specific ministries and selecting officials of more varied rankings, which could be considered in future research.

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