

A Risk Management Framework to Support Organisational Performance in the Public Sector in South Africa

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Abstract

There is a lack of participation by risk managers in an organisation's strategic decision-making which results in an absence of genuine action, usually relegating the risk management department to the role of a reporting system. This has a detrimental impact on the organisational operational performance and ultimately service delivery. The purpose of this research was to examine the impact of risk management (RM) strategies in enhancing the operational performance of public sector organisations. The motivation for this study emanates from a paucity especially in public sector, organisations on how RM impacts organisations in South Africa. Moreover, in the researched organisation failed to fulfil its mandate and operational targets. As a result, in South Africa, this calls for more research in this regard to better understand and manage RM and its relationship to operational performance in an organisation. A positivistic research paradigm with a deductive methodological approach was utilised in this study. The results of the study revealed through correlation analysis that RM strategies positively correlated with organisational performance. Therefore, this study provides a novel framework which could assist public sector organisations towards improving organisational performance and service delivery to South Africans.

Keywords

Risk, risk management, public sector, organisational performance, deductive methodological approach, risk management culture.

1. Introduction

In recent years, the introduction of organisational RM has gained significant popularity in both theory and real-world application addressing the performance of public sector institutions (Ahsan & Rahman, 2017). This is because it enables public sector companies to become more responsive to change and make clearer judgments on how they can operate more efficiently, eventually leading to better outcomes and improved service delivery.

However, there are special conditions that have justified the RM concept's appeal and usefulness in the public sector presently as a basis for gauging performance, accountability, and return on investment (Demek, Raschke, Janvrin & Dilla, 2018). Predicting risks is a requisite for sustainable business and undoubtedly a primary technique for risk assessment, and there is a commitment to reduce risks and increase awareness about their occurrence (Adhikari &

Grseth-Nesbakk, 2016). In relation to structures, procedures, corporate values, culture, and behaviour, RM is a critical factor of corporate governance in public organisations (Hopkin, 2018).

In South Africa's public sector, regulations and standards have been put in place to encourage the adoption of strong RM concepts and the maintenance of efficient, effective, and transparent RM and control mechanisms. RM in South African public sector is structured through the Public Finance Management Act (PFMA), No. 1 of 1999. Sections (38)(1)(a)(i) and (51)(1)(a)(i) of the PFMA requires Accounting Officers to ensure that institutions they lead maintain effective, efficient of RM.

The Republic of South Africa Public Sector RM Framework (2010), with its rules and accompanying components, has helped to define what is expected when adopting this RM strategy inside public organisations. The RM frameworks, guidelines, and codes, when effectively implemented, can aid in the achievement of the organisational obligations of the public sector, enlightening results through a far more knowledgeable decision-making process, and promoting a risk and control-based method by inspiring accountable risk-taking within the context of oversight control (Hassan & Yazid, 2019).

Additionally, it is widely acknowledged that for RM to succeed within any organisation, various critical success factors must be in place, including backing from various managerial levels, participation of all stakeholders, a deliberate effort to enhance risk awareness and knowledge, and effective communication of risk information across that organisation (Hopkin, 2018). However, at the researched organisation, RM is frequently conducted in a silo, assigned to a single official example Chief Risk Officer, regarded as a tick-box compliance process, and often times not considered a significant enough component of the decision-making system. This lack of RM engagement in the organisation's strategic decision-making results in a lack of real action and frequently reduces the risk department to the position of a reporting system, with very little follow-through. Therefore, the organisations risk management targets are not being achieved. Thus, RM must be viewed as a strategic initiative with crucial and far-reaching objectives tightly integrated with policy and total openness among all stakeholders, including people ((Ahsan & Rahman, 2017). Therefore, this study aims to address this knowledge gap by identifying the challenges faced by a public organisation and evaluate the factors strongly associated with RM and organisational performance within the public sector.

2. Literature Review

2.1 Theoretical Framework

This study is informed through the lens of 2 theories namely the resource-based theory and dynamic theory which informs the Enterprise Risk Management (ERM) Integrated framework.

A resource-based view and dynamic capability, an integrated enterprise RM framework, and contingency theory can theoretically unpack RM in the public sector. Resource Based View and Dynamic Capability refers to how an organisation responds in a rapidly changing environment (Dangelico, Pujari & Pontrandolfo, 2017). They consist of organisational and managerial processes of coordination and integration, learning, and reconfiguration (Li, 2021). Therefore, dynamic capabilities are the ability to integrate resources, reallocate resources within a firm, and create new knowledge routines within an organisation.

The underlying principle behind the ERM-Integrated Framework approach is that value is amplified when decision makers set the organisation's strategy and goals (Anton & Nucu, 2020).

2.2 The concepts of Risk and Risk Management

Organisations of all forms and dimensions are faced with external and internal influences and impacts that make it ambiguous whether they will attain their goals. These influences are called risks. According to the ISO 31000:2018 RM Guidelines (2018), risk is the effect of uncertainty on objectives. The rise of organisational RM has increased its importance and popularity in theory and in real-life presentations in recent years regarding the performance of corporate and public sector entities (Motsoengeng & Naidoo, 2024; Ahsan & Rahman, 2017). The incorporation of risk and RM is an essential feature of the present developments that are part of the market-oriented methodology to management in the public sector. This is because risk is an inherent component of every organised human activity, and thoughts about risk and its management in companies have progressed over time and with the improvement of management science (Hassan & Yazid, 2019; Drennan & McConnell, 2015).

2.3 Risk Management Strategies

A RM strategy is a designed approach to addressing risks, which is also referred to as risk response or risk treatment. It is a key part of the RM process. RM strategies are mechanisms that management pick out, which are suitable actions in reply to controlling risks and in alignment with risk tolerance and appetite (Ihinegbu, 2021; Ahluwalia et al., 2016; Motsoengeng & Naidoo, 2024). The four risk responses include avoid, accept, transfer, and mitigate. Ahluwalia et al. (2016) describes the following types of risk response strategies:

- Avoid - This response is totally avoiding the risk, such as exiting the business
- Accept - This response accepts the level of risk and take no action to minimise it further
- Transfer - This transfers the risk to someone else, such as insurance cover
- Mitigate - This response is to take action to cope with the risk through a method of internal control.

For each risk identified, the risk response can be expressed. Where the gravity of the risk is high, a strong risk response is required. ISO 31000:2018 states that the intention of risk treatment is to select and execute options for tackling risk.

Risk treatment entails a process of:

- Articulating and choosing risk treatment choices.
- Developing and implementing risk treatment.
- Assessing the efficiency of that treatment.
- Determining whether the residual risk is acceptable.
- If it is not acceptable, taking additional treatment.

The appropriate risk response varies from organisation to organisation, depending on how management views the risk in terms of consequences.

Danish companies appear to be leaning towards a more decentralised approach to RM, emphasising the structured management of financial and hazardous risks (Abraham & Lžičář, 2018).

2.4 Risk Management in the public sector

Citizens are taxpayers, and public entities have legal duties for a wide range of services, further complicating the RM in the public sector (Ihinegbu, 2021; Hopkin, 2018). Decisions concerning existing risks (to ignore, handle, relocate, or eliminate them) and new risks must be taken in a complex and dynamic situation (Ihinegbu, 2021). All the more reason for a solid management approach to support them. Risk Management practices in Western European, Asian/Pacific and North American companies that there is more than one optimal approach to RM (Hamdani, 2020). An organisation's perception of business risk and its approach to RM vary by organisation and organisational management. Incident management, risks, and opportunities should be aligned with the organisation's business strategy and its risk tolerance (Motsoengeng & Naidoo, 2024; Rimmer, 2018).

In current times, RM is critical in determining the priority areas when it comes to identifying opportunities and threats—whether internal or externally generated (Kong et al., 2018).

2.5 Risk Assessment Challenges in the public sector

The management of risks in the public sector faces several challenges given the time consumption of risk assessment and the process of mitigating the risks (Crous, 2017). When implementing a risk assessment or RM approach, public sector organisations are bound to encounter difficulties, and they, like their counterparts, are not immune to challenges (Topping et al., 2020).

- Absence of Know-How or Skills: effective management and risk assessment training can lead to organisational success (Crous, 2017).
- Complex organisational structure: arise when the following principles are violated and not implemented or closely monitored: unified command, chain of command, scope of control, division of labour, standardisation, coordination, responsibility, authority, delegation, streamlining, and delay (Héder, 2017).
- Management structure: The need to consider RM often comes from support functions such as finance, project management, and human resources. Thus, the management tone on risk management befits critical because it has a trickle-down effect on all staff involved (Ihinegbu, 2021).
- Complex work environment: according to Torfing (2019), in today's complex and accelerating change environment, organisations find themselves asking the most significant question: how can we align our organisations to better fulfil our mission and thrive in this environment? This need for adaptation is a clear indication that organisations have changed dramatically in recent years. Therefore, the complexity of the operating environment further increases the challenges of RM.

- Creating a Risk Focused Culture: the most significant part of RM is the combination of risk into an organisation's culture and values. Ultimately, this leads to more discussion of risk at all levels (Florio & Leoni, 2017). Thus, the resulting cultural change allows for risk to be considered and breaks down silos about how to manage risk.

2.6 Research methods and design

A research methodology describes the procedures and methods used to gather, analyse, and interpret data to answer research questions (Kumar, 2018). According to Saunders, Lewis and Thornhill (2016), the research onion explains the phases involved in the development of a research work. The study employed a a positivist philosophy to generate knowledge about the research organisation. This research paradigm is known for improving objectivity and accuracy due to the use of statistical and numerical data (Walliman, 2017). According to Creswell and Creswell (2018) There are three basic research approaches: quantitative mono methods, which are scientific investigations designed to illuminate the complex views of respondents; qualitative methods, which are theoretical, philosophical, and data-analytical research methods; and hybrid methods that combine the two. This study utilised quantitative mono method approach to identify the challenges and effectiveness of RM strategies at the research organisation. This study additional employed a case study approach to undertake the research of the single research organisation.

Creswell and Creswell (2018) argue that descriptive study designs make the study unable to control for variables because addressing is left to the gathered data to do so. In descriptive research, the researcher examines and describes what is being observed in order to give the most precise description of the state of affairs. This includes selecting respondents, using research tools, and carrying out the data collection and analysis procedures required to answer the research question. The bottom line is that the techniques used at this point use statistical inference to draw certain conclusions. Therefore, the study uses deductive reasoning to generate knowledge about the effectiveness of RM strategies at the research entity. This research paradigm is known for improving objectivity and accuracy due to the use of statistical and numerical data (Kumar, 2018).

A population is the whole group from whom one seeks to draw conclusions (Creswell & Creswell, 2018). The study's target population is the research entity's personnel (managerial and non-managerial). Using simple random sampling, a sample of 150 employees was chosen from the research entity who were directly involved with risk management processes that influenced the risk objectives of the organisation.

For the purpose of this study, the unit of analysis was individual members participating in risk management processes in the public sector organisation. Maree (2017) asserts that probability sampling is the analysis and assortment of respondents through numerical data and techniques. Probability sampling is a random sampling method whose main advantage is that it reduces the chance of systematic error, but at the same time has proven to be laborious and expensive (Asenahabi, 2019). The sampling frame gives all elements of the research environment the opportunity to be included in the sample. Based on the quantitative research methodology employed, the study used probability sampling to select respondents to determine the effectiveness of RM strategies at the research entity. The employees were invited by email to participate in an online survey.

2.7 Data analysis and results

This study uses descriptive statistical analysis to determine the effectiveness and challenges of RM strategies at the research organisation based on the quantitative research methodology employed.

Validity and reliability

The validity of the research instrument is concerned with whether a scale genuinely measures what it is supposed to measure (Cresswell and Cresswell, 2018). Exploratory factor analysis was used to test concept validity in this investigation. The stability of the research instrument in assessing what it is supposed to measure is measured by reliability. Cronbach's alpha index will be used to measure the scales' reliability. The alpha coefficient of a scale should be greater than 0.7 for it to be regarded as trustworthy (Field, 2018). For the purposes of this study, Table 1 reflects the hypotheses that will be tested.

Table 1. Hypotheses testing of the identified variables

Hypotheses	Number	Three Continuous Depended Variables
There is a relationship between the selected continuous dependent variables of the study	H1.1 to H1.3	Organisational Performance (OP) RM Challenges (RMC) RM Strategies (RMS)
Each of the 3 selected Continuous Dependent Variables mean rank scores are undistinguishable per Gender categories.	H2.1 to H2.3	
Each of the 3 selected Continuous Dependent Variables mean rank scores are the same per Age categories.	H3.1 to H3.3	
Each of the 3 selected Continuous Dependent Variables mean rank scores are undistinguishable per Department categories.	H4.1 to H4.3	
Each of the 3 selected Continuous Dependent Variables mean rank scores are identical per Work Experience categories.	H5.1 to H5.3	

Source: Authors

Measuring instrument design

A five-item Likert-type scale was used to measure the identified variables with the following interpretation (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). Each demographic variable was separated into unique categories and captured using a standard questionnaire format. From the targeted 150 respondents a response rate of 59% (89) was obtained. According to Strydom and De Vos (1998), for a population of 200, a response of 32% is deemed acceptable. It is therefore asserted that the response rate was tolerable and that the conclusions could be generalised without reservation to the entire community.

Demographic profile of respondents

Table 2. The results of the demographic information of the respondents in

Age	Frequency	Percent	Cumulative Percent
Below 30 years	11	12.4	100.0
30-40 years	46	51.7	51.7
41-50 years	32	36.0	87.6
Total	89	100.0	
Department composition	Frequency	Percent	Cumulative Percent
Customer Services	39	43,8	43,8
Finance	16	18,0	61,8

Age	Frequency	Percent	Cumulative Percent
Human Resources	9	10,1	92,1
Information Technology	7	7,9	100,0
General	18	20,2	82,0
Total	89	100,0	
Work experience	Frequency	Percent	Cumulative Percent
0 to 5 years	18	20.2	20.2
6 to 10 years	64	71.9	100.0
11 to 20 years	7	7.9	28.1
Total	89	100.0	

Demographic information collected in this study includes gender, age, department, and work experience. Results show that the gender distribution was almost even, with males accounting for 50.6% of the sample and females accounting for 49.4% of the sample (Table 2). Furthermore, the dominant age group, accounting for 51.7% of the sample, was 30 to 40 years. Results also revealed that most respondents were from the customer service department, and most respondents had 6 to 10 years of work experience. From the demographic information it can thus be concluded that most respondents who participated in this study were well qualified and familiar with their organisational environment and their role. The researcher is therefore of the opinion that the sample was a good representation of the population and that respondents were well informed to participate in the study.

Risk Management Challenges

Questions that measure the influence of possible RM challenges are presented in Table 3.

Table 3. Risk Management Challenges (n = 89)

Questions	Median	SD	1	2	3	4	5
6.1: My organisation's mission goals override other considerations	4.0	0.8	4	4	6	75	0
			4.5%	4.5%	6.7%	84.3%	0.0%
6.2: In my organisation there is frequent leadership changes and vacant leadership positions	4.0	0.8	2	11	3	69	4
			2.2%	12.4%	3.4%	77.5%	4.5%
6.3: In my organisation, there are leaders who have knowledge of RM and business	4.0	0.4	0	1	3	80	5
			0.0%	1.1%	3.4%	89.9%	5.6%
6.4: In my organisation, there is separation of operating budgets from program budgets	4.0	0.6	1	2	3	72	11
			1.1%	2.2%	3.4%	80.9%	12.4%
6.5: In my organisation there is clear RM structures	4.0	1.0	1	14	2	56	16
			1.1%	15.7%	2.2%	62.9%	18.0%
6.6: In my organisation there is clear risk metrics	3.0	1.1	2	39	6	39	3
			2.2%	43.8%	6.7%	43.8%	3.4%

Questions	Median	SD	1	2	3	4	5
6.7: In my organisation there is simpler and well understood RM procedural requirements	4.0	0.9	1	21	4	60	3
			1.1%	23.6%	4.5%	67.4%	3.4%
6.8: There is a good risk culture and risk mind-set	2.0	0.9	0	54	6	29	0
			0.0%	60.7%	6.7%	32.6%	0.0%
6.9: RM is part of the organisation's strategic focus	4.0	0.5	0	5	1	80	3
			0.0%	5.6%	1.1%	89.9%	3.4%
6.10: In my organisation Ethical leadership and ethical governance remains important in day-to-day activities	4.0	0.4	0	2	5	80	2
			0.0%	2.2%	5.6%	89.9%	2.2%
6.11: RM plans are integrated into strategic planning processes.	4.0	0.4	0	2	4	80	3
			0.0%	2.2%	4.5%	89.9%	3.4%

According to Table 3, the majority of the respondents generally agree that in their organisation there are leaders who have knowledge of RM and business. The respondents tend to disagree that there is a good risk culture and risk mind-set within the organisation ($M = 2$, $SD = 0.9$), and they are neutral to the statement that in their organisation there are clear risk metrics ($M = 3$, $SD = 1.1$). As a result, a lack of risk culture and mindset poses a challenge for public sector organisations.

Effectiveness of Risk Management Strategies

Descriptive statistics for questions that measure the effectiveness of RM strategies are presented in Table 4.

Table 4. Effectiveness of RM Strategies (n = 89)

Questions	Median	SD	1	2	3	4	5
7.1: My organisation has the ability to identify risk events effectively	4.0	0.7	0	10	2	74	3
			0.0%	11.2%	2.2%	83.1%	3.4%
7.2: My organisation has the ability to assess risk events effectively	4.0	0.9	0	22	4	58	5
			0.0%	24.7%	4.5%	65.2%	5.6%
7.3: My organisation has the ability to manage risks within its risk appetite	2.0	1.0	0	51	3	33	2
			0.0%	57.3%	3.4%	37.1%	2.2%
7.4: My organisation has the ability to manage risks within its risk tolerance level	2.0	0.9	0	55	7	26	1
			0.0%	61.8%	7.9%	29.2%	1.1%
7.5: RM strategies enhance my organisation's ability to achieve organisational objectives	4.0	0.9	0	24	5	57	3
			0.0%	27.0%	5.6%	64.0%	3.4%
7.6: RM enables my organisation to minimise unfavourable surprises and losses	2.0	1.0	0	50	2	35	2
			0.0%	56.2%	2.2%	39.3%	2.2%

Questions	Median	SD	1	2	3	4	5
7.7: My organisation has the ability to optimise the potential upside effects from the opportunities arising from the uncertainties	3.0	1.0	0	41	7	40	1
			0.0%	46.1%	7.9%	44.9%	1.1%
7.8: In my organisation we work together at every level to address RM challenges	4.0	0.8	0	13	6	68	2
			0.0%	14.6%	6.7%	76.4%	2.2%
7.9: In my organisation we have clearly documented RM policies and procedures	4.0	0.6	0	3	0	69	17
			0.0%	3.4%	0.0%	77.5%	19.1%
7.10: In my organisation we clearly understand what is expected of us in terms of RM	4.0	0.3	0	1	3	83	2
			0.0%	1.1%	3.4%	93.3%	2.2%

Respondents generally agreed that their organisation is able to identify risk events effectively.

The analysis also revealed that, though most respondents believe that their organisation is able to identify and assess risk events, respondents believe that the organisation is not able to manage risk within its risk appetite and risk tolerance level. Respondents also do not believe that RM in their organisation helps to minimise losses. The following section presents descriptive statistics for organisational performance.

Organisational Performance

Descriptive statistical analysis for statements relating to organisational performance is presented in Table 5.

Table 5. Organisational Performance (n = 89)

Questions	Median	SD	1	2	3	4	5
8.1: The organisation has greatly improved in the overall quality of services delivery in the last 2 years	2.0	1.0	12	55	7	12	3
			13.5%	61.8%	7.9%	13.5%	3.4%
8.2: Every member of the organisation is committed to maintaining high standard of work in every aspect of the organisation's operations	3.0	1.0	1	41	8	38	1
			1.1%	46.1%	9.0%	42.7%	1.1%
8.3: There is increase in the quality of services provided by the organisation to clients in the last 2 years	2.0	1.0	3	60	5	18	3
			3.4%	67.4%	5.6%	20.2%	3.4%
8.4: There is need to improve on the quality of services rendered by the organisation to the clients	4.0	0.8	0	13	6	67	3
			0.0%	14.6%	6.7%	75.3%	3.4%
8.5: There is an increase in production compared to the previous periods	2.0	0.9	0	63	6	17	3
			0.0%	70.8%	6.7%	19.1%	3.4%
	2.0	0.7	7	67	8	6	1

Questions	Median	SD	1	2	3	4	5
8.6: The organisation has achieved its strategic goals by more than 80% in the last 2 years			7.9%	75.3%	9.0%	6.7%	1.1%
8.7: In my organisation I can say there is operational effectiveness and business continuity.	2.0	0.9	2	66	4	15	2
			2.2%	74.2%	4.5%	16.9%	2.2%
8.8: My organisation is able to rapidly respond to the changing environment we operate in.	2.0	0.9	0	63	4	20	2
			0.0%	70.8%	4.5%	22.5%	2.2%
8.9: RM is incorporated into performance agreements of employees.	4.0	0.8	1	4	5	54	25
			1.1%	4.5%	5.6%	60.7%	28.1%
8.10: In my organisation there is accountability which pushes us to achieve better results and goals	4.0	0.4	0	2	3	78	6
			0.0%	2.2%	3.4%	87.6%	6.7%

Results reported in Table 5 show that most respondents generally disagreed with the statements about the organisational performance. Overall, results show that respondents believed that organisational performance was low.

Inferential Statistical Analysis

Inferential statistics is concerned with getting inferences centred on relations found in the sample and relations in the population (Bhandari, 2020).

Reliability Analysis of the Survey Questionnaire Dimensions

The reliability of the questionnaires was determined by calculating Cronbach's alpha index for each scale used. The Cronbach Alpha score, as a gauge of internal consistency and reliability, should have a value of 0.700 or higher (Pallant, 2020). The results are presented in Table 6.

Table 6. Cronbach's Alpha index and Spearman rank correlations findings with Study Variables

Study Variables	Cronbach's Alpha	No of Items	
Organisational Performance	0.900	8	
RM Challenges	0.760	5	
RM Strategies	0.810	5	
Spearman rank correlations Matrix of the Variables (n = 89)			
Study variable	OP	RMC	RMS
Organisational Performance (OP)	1.000		
RM Challenges (RMC)	0.016	1.000	
RM Strategies (RMS)	0.535**	0.085	1.000

***.* Correlation is significant at the 0.01 level (2-tailed).

The correlation amid the variables in this study is presented in a matrix format, where the names of the variables are presented in the left column and top row. A variable correlates with itself 100% ($r = 1.000$). The Spearman rank-order correlations calculation results are used as input for the hypotheses testing in the following section (Table 6).

Hypothesis testing

In this section, the results of the hypotheses tested are presented.

Relationships between Continuous Depended Variables

In this section, the results of the hypotheses tested to determine the relationships between the three continuously dependent variables are presented.

Hypothesis H1.1

Hypothesis H01.1 There is no relationship between RM Challenges (RMC) and Organisational Performance (OP)

The Spearman correlation (r) calculations, the following relationship can be derived: It was found that no correlation exists between RM Challenges (RMC) and Organisational Performance (OP) (r ($df = 88$; $p > 0.01$) = 0.016). Based on this finding, the alternative hypothesis is rejected and the null hypothesis H01.1 is accepted, which indicates that there is no relationship between RM Challenges and Organisational Performance as measured by the study.

Hypothesis H1.2

Hypothesis H01.2 There is no relationship between RM Strategies and Organisational Performance (OP)

The Spearman correlation (r) calculations, the following relationship can be derived: A significant, positive correlation exists between RM Strategies (RMS) and Organisational Performance (OP) (r ($df = 88$; $p < 0.01$) = 0.535). Based on this finding, the null hypothesis in H01.2 is rejected, and the alternative hypothesis is accepted, which indicate that there is a relationship between RM Strategies and Organisational Performance as measured by the study.

Gender mean score comparisons

The non-parametric Mann-Whitney U Test was used to conduct mean score comparisons between the independent variable gender and the three dependent variables of the study.

Hypothesis H2.1

Hypothesis H0_{2.1} *The continuous dependent variable Organisational Performance mean rank scores are not identical per Gender category*

The non-parametric Mann-Whitney U Test shows there is not a statistically significant difference in Organisational Performance of gender groups where females (Mean rank = 34.97, $n = 44$) and males (Mean rank = 47.14, $n = 45$) with ($U = 976.000$, $z = -0.116$, $p = 0.908$). Based on this finding, the null-hypothesis H0_{2.1} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable Organisational Performance mean rank scores are identical per Gender category.

Hypothesis H2.2

Hypothesis H0_{2.2} *The continuous dependent variable RM Challenges mean rank scores are not identical per Gender category*

The non-parametric Mann-Whitney U Test shows there is not a statistically significant difference in RM Challenges of gender groups where females (Mean rank = 34.97, $n = 44$) and males (Mean rank = 47.14, $n = 45$) with ($U = 976.000$, $z = -0.116$, $p = 0.908$). Based on this finding, the null-hypothesis H0_{2.2} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable RM Challenges mean rank scores are identical per Gender category.

Hypothesis H2.3

Hypothesis H0_{2.3} *The continuous dependent variable RM Strategies mean rank scores are not identical per Gender category*

The non-parametric Mann-Whitney U Test shows there is not a statistically significant difference in RM Strategies of gender groups where females (Mean rank = 34.97, $n = 44$) and males (Mean rank = 47.14, $n = 45$) with ($U = 976.000$, $z = -0.116$, $p = 0.908$). Based on this finding, the null-hypothesis H0_{2.3} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable RM Strategies mean rank scores are identical per Gender category.

Age mean score comparisons

The non-parametric Kruskal-Wallis Test was used to conduct mean score comparisons between age and the dependent variables, Organisational Performance, RM Challenges and RM Strategies of the study to determine if there are substantial variances in categorical age mean scores. The results of the means rank scores comparison of the categories of age on the dependent variables Organisational Performance, RM Challenges and RM Strategies are reported.

Hypothesis H3.1

Hypothesis H0_{3.1} *The continuous dependent variable Organisational Performance mean rank scores are not identical per Age category*

The Kruskal-Wallis Test reveal that the distribution of Organisational Performance is the same across categories of age, as there is not a statistically significant difference ($Chi-Square = 0.748$, $n = 89$; $p = 0.688$) in categories of Age with Organisational Performance. Based on this finding, the null-hypothesis H0_{3.1} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable Organisational Performance mean rank scores are identical per Age category.

Hypothesis H3.2

Hypothesis H0_{3.2} *The continuous dependent variables RM Challenges mean rank scores are not identical per Age category*

The Kruskal-Wallis Test reveal that the distribution of RM Challenges is the same across categories of age as there is not a statistically significant difference ($Chi-Square = 1.946$, $n = 89$; $p = 0.378$) in categories of Age with RM Challenges. Based on this finding, the null-hypothesis H0_{3.2} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable RM Challenges mean rank scores are identical per Age category.

Hypothesis H3.3

Hypothesis H0_{3.3} *The continuous dependent variable RM Strategies mean rank scores are not identical per Age category*

The Kruskal-Wallis Test reveal that the distribution of RM Strategies is the same across categories of age as there is not a statistically significant difference ($Chi-Square = 0.493$, $n = 89$; $p = 0.378$) in categories of Age with RM Strategies. Based on this finding the null-hypothesis H0_{3.3} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable RM Strategies mean rank scores are identical per Age category.

Department mean score comparisons

The non-parametric Kruskal-Wallis Test was used to conduct mean score comparisons between Department and the dependent variables, Organisational Performance, RM Challenges and RM Strategies of the study to determine if there are substantial differences in categorical department mean scores. The results of the means rank scores comparison of the categories of department on the dependent variables Organisational Performance, RM Challenges and RM Strategies is reported .

Hypothesis H4.1

Hypothesis H0_{4.1} *The continuous dependent variables Organisational Performance mean rank scores are not identical per Department category*

The Kruskal-Wallis Test post hoc analysis using a Dunn's procedure with Bonferroni correction for multiple comparisons reveal that the distribution of Organisational Performance is not the same across categories of Department as there is a statistically significant difference ($n = 89$; $p = 0.001$) in categories of Department with Organisational Performance.

- The respondents of the Customer Service Department reported a lower performance score than those from the Finance Department.
- The respondents of the Customer Service Department reported a lower performance score than those from the General Department.

Based on this finding the alternative hypothesis is rejected and the null hypothesis H0_{4.1} is accepted that stated that Organisational Performance mean rank scores are not identical per Departmental category.

4.6.4.2 Hypothesis H4.2

Hypothesis H0_{4.2} *The continuous dependent variables RM Challenges mean rank scores are not identical per Department category*

Based on this finding the null-hypothesis H0_{4.2} is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable RM Challenges mean rank scores are identical per department category.

4.6.4.3 Hypothesis H4.3

Hypothesis H0_{4.3} *The continuous dependent variable RM Strategies mean rank scores are not identical per Department category*

Based on this findings, the null hypothesis H0_{4.3} is rejected, and the alternative hypothesis is accepted, which indicate that the continuous dependent variable RM Strategies means rank scores are identical per department category.

4.6.5 Work Experience mean score comparisons

The non-parametric Kruskal-Wallis Test was used to conduct mean score comparisons between work experience and the dependent variables of the study, Organisational Performance, RM Challenges and RM Strategies of the study to determine if there are significant differences in categorical work experience mean scores. The results of the means rank score comparison of the categories of work experience on the dependent variables Organisational Performance, RM Challenges and RM Strategies are reported .

Hypothesis H5.1

Hypothesis H0_{5.1} *The continuous dependent variables Organisational Performance mean rank scores are not identical per Work Experience category*

The Kruskal-Wallis Test post hoc analysis reveals that there is there is a statistically significant difference ($n = 89$; $p = 0.000$) in categories of Work Experience with Organisational Performance.

The respondents of the 6 to 10 years work experience reported a lower Organisational Performance score than those respondents with 11 to 20 years work experience.

Based on this finding the alternative hypothesis is rejected and the null hypothesis H0_{5.1} is accepted that stated that Organisational Performance mean rank scores are not identical per Work Experience category.

Hypothesis H5.2

Hypothesis H0_{5.2} *The continuous dependent variables RM Challenges mean rank scores are not identical per Work Experience category*

Based on this finding, the null-hypothesis $H_{0.2}$ is rejected, and the alternative hypothesis is accepted that indicated that the continuous dependent variable RM Challenges mean rank scores are identical per Work Experience category.

Hypothesis H5.3

Hypothesis $H_{0.3}$ *The continuous dependent variable RM Strategies mean rank scores are not identical per Work Experience category*

The Kruskal-Wallis Test post hoc analysis using a Dunn's procedure with Bonferroni correction for multiple comparisons reveal that the distribution of RM Strategies is not the same across categories of Work Experience as *there is a statistically significant difference* ($n = 89$; $p = 0.000$) in categories of Work Experience with RM Strategies. Based on these findings, the alternative hypothesis is rejected and the null hypothesis $H_{0.3}$ is accepted that stated that RM Strategies mean rank scores are not identical per Work Experience category.

Summary of Hypotheses findings

Inferential statistics were conducted to test the hypotheses formulated in this study. Table 7 provides a summary of the hypotheses:

1
2

Table 7. Summary of hypotheses

Alternative Hypotheses	Decision	Test statistic	Null Hypotheses	Decision
H1.1: There is a relationship between RM Challenges and Organisational Performance	Rejected	$r = 0.016; p > .05$	H0 _{1.1} There is no relationship between RM Challenges (RMC) and Organisational Performance (OP)	Supported
H1.2: There is relationship between RM Strategies and Organisational Performance	Supported	$r = 0.535; p < .001$	H0 _{1.2} There is no relationship between RM Strategies and Organisational Performance (OP)	Rejected
H2.1: The continuous dependent variable Organisational Performance mean rank scores are identical per Gender category	Supported	$U = 976.000; p > .05$	H0 _{2.1} The continuous dependent variable Organisational Performance mean rank scores are not identical per Gender category	Rejected
H2.2: The continuous dependent variable RM Challenges mean rank scores are identical per Gender category	Supported	$U = 976.000; p > .05$	H0 _{2.2} The continuous dependent variable RM Challenges mean rank scores are not identical per Gender category	Rejected
H2.3: The continuous dependent variable RM Strategies mean rank scores are identical per Gender category	Supported	$U = 976.000; p > .05$	H0 _{2.3} The continuous dependent variable RM Strategies mean rank scores are not identical per Gender category	Rejected
H3.1: The continuous dependent variable Organisational Performance mean rank scores are identical per Age category	Supported	$\text{Chi-Square} = 0.748; p > .05$	H0 _{3.1} The continuous dependent variable Organisational Performance mean rank scores are not identical per Age category	Rejected
H3.2: The continuous dependent variables RM Challenges mean rank scores are identical per Age category	Supported	$\text{Chi-Square} = 1.946; p > .05$	H0 _{3.2} The continuous dependent variables RM Challenges mean rank scores are not identical per Age category	Rejected
H3.3: The continuous dependent variable RM Strategies mean rank scores are identical per Age category	Supported	$\text{Chi-Square} = 0.493; p > .05$	H0 _{3.3} The continuous dependent variable RM Strategies mean rank scores are not identical per Age category	Rejected

Alternative Hypotheses	Decision	Test statistic	Null Hypotheses	Decision
H4.1: The continuous dependent variables Organisational Performance mean rank scores are identical per Department category	Rejected	Chi-Square = 19.636; $p < .05$	H0 _{4.1} The continuous dependent variables Organisational Performance mean rank scores are not identical per Department category	Supported
H4.2: The continuous dependent variables RM Challenges mean rank scores are identical per Department category	Supported	Chi-Square = 4.725; $p > .05$	H0 _{4.2} The continuous dependent variables RM Challenges mean rank scores are not identical per Department category	Rejected
H4.3: The continuous dependent variable RM Strategies mean rank scores are identical per Department category	Supported	Chi-Square = 6.858; $p > .05$	H0 _{4.3} The continuous dependent variable RM Strategies mean rank scores are not identical per Department category	Rejected
H5.1: The continuous dependent variables Organisational Performance mean rank scores are identical per Work Experience category	Rejected	Chi-Square = 17.076; $p < .05$	H0 _{5.1} The continuous dependent variables Organisational Performance mean rank scores are not identical per Work Experience category	Supported
H5.2: The continuous dependent variables RM Challenges mean rank scores are identical per Work Experience category	Supported	Chi-Square = 3.486; $p > .05$	H0 _{5.2} The continuous dependent variables RM Challenges mean rank scores are not identical per Work Experience category	Rejected
H5.3: The continuous dependent variable RM Strategies mean rank scores are identical per Work Experience category	Rejected	Chi-Square = 7.455; $p < .05$	H0 _{5.3} The continuous dependent variable RM Strategies mean rank scores are not identical per Work Experience category	Supported

Based on the findings of the Table 7 the following can be derived:

- There is A significant, positive correlation exists between RM Strategies (RMS) and Organisational Performance (OP). Meaning if there is an improvement in RM Strategies, then Organisational Performance will improve and vice versa.
- The Kruskal-Wallis Test post hoc analysis revealed that Organisational Performance levels differ statistically significantly between the Departmental categories Customer Services and Finance. This means that the respondents of the Customer Service Department reported lower performance scores than those respondents from the Finance Department.
- The Kruskal-Wallis Test post hoc analysis revealed that Organisational Performance levels differ statistically significantly between the Work Experience categories 6 to 10 years work experience and 0 to 5 years work experience. This means that the respondents of the 6 to 10 years work experience reported lower organisational performance scores than those respondents with 0 to 5 years work experience.
- The Kruskal-Wallis Test post hoc analysis revealed that RM Strategies levels differ statistically significantly between the Work Experience categories 6 to 10 years and 11 to 20 years. This means that the respondents of the 6 to 10 years work experience reported lower RM Strategies scores than those respondents with 11 to 20 years work experience.

5. Discussion of results and implications

This section presents key findings from the study, focusing on the findings from the respondents' demographic profiles, the literature review, and the primary study.

Demographic information collected in this study includes gender, age, department, and work experience. Results show that the gender distribution was almost even, with males accounting for 50.6% of the sample and females accounting for 49.4% of the sample. Furthermore, the dominant age group, accounting for 51.7% of the sample, was 30 to 40 years. Results also revealed that most respondents were from the customer service department, and most respondents had 6 to 10 years of work experience.

To achieve this objective (To identify the RM challenges faced by public organisations), a descriptive statistical analysis was conducted. The results revealed that one of the challenges to RM faced by public the public sector organisation is the lack of clear risk metrics as well as a good risk culture and mindset. This result is consistent and collaborate with Crous (2017) and Topping et al. (2020), who note that the public sector confronts several challenges when it comes to RM. The lack of an adequate risk culture and metrics within the public sector was a major challenge affecting the RM of public organisations.

Regarding research objective 2 which was to evaluate the effectiveness of RM strategies on the performance of public sector organisations. To achieve this objective, a correlation analysis was conducted, and the results revealed that RM strategies positively correlate with organisational performance. Thus, effective RM strategies are expected to result in high organisational performance. This result is consistent with Amoah and Pretorius (2019), who studied the impact of RM on organisational performance and found a positive correlation between RM and firm performance. The importance of effective RM strategies was also emphasised by Dabari and Saidin (2015), who found that the sequences of weak performances suffered by financial institutions in Nigeria are attached to RM failures. Further, the result is also consistent with Ihinegbu's (2021) finding that effective RM strategies positively influence organisational performance.

There are several ways in which effective RM strategies positively influence organisational performance. For example, Florio and Leoni (2017) highlight that through effective risk assessment, organisations can prevent poor decision-making, complacency, and inadvertent exposure to any potential disruption. In addition, Hopkin (2018) notes that effective RM can improve the frameworks and tools used to perform key RM functions in a consistent manner, thereby eliminating redundant processes and increasing efficiency by allocating the right number of resources to reduce risk in Figure 1.

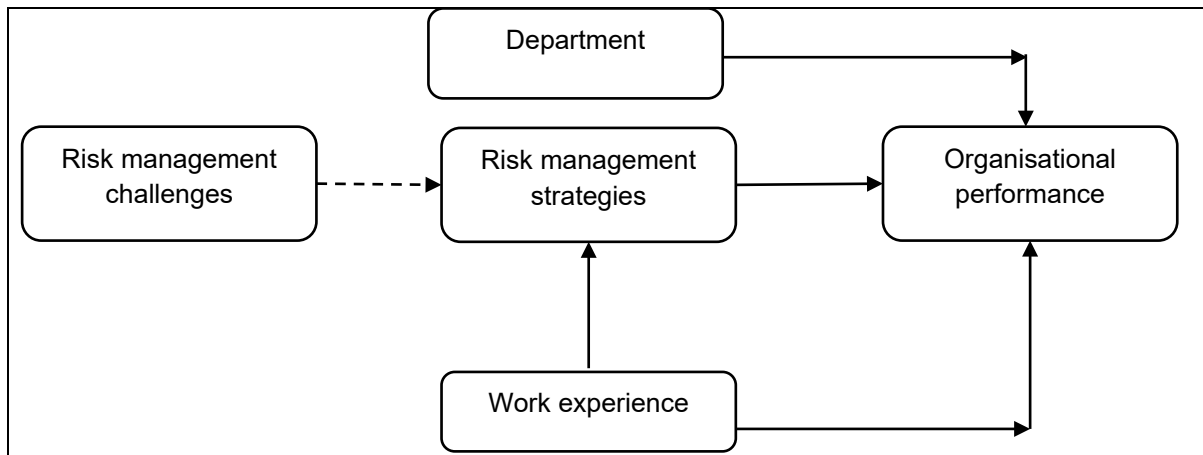


Figure 1. a risk management framework to support organisational performance Source: Authors

The empirical hypothesised framework demonstrates that risk management strategies is the heart of the organisations. Additionally, risk management challenges are not significantly associated with risk management strategies. However, can be mitigated through risk management strategies (dashed line in figure 1). Work experience and department structure are significant contributors to operational performance, so risk management must customise approaches across these dimensions.

5.1 Practical and theoretical implications

In view of the findings concerning management should drive a strong risk culture which is important because, in the end, people are what enable successful RM. A risk-aware culture fosters a common knowledge of risk while also supporting the organisation's strategy, operating model, operating processes, and competitive advantage. To establish a strong risk culture, the organisation should first assess its existing risk culture and the sustainability of its RM activities. These aspects, in turn, begin with an examination of the organisation's risk appetite. Organisations evaluate their risk appetite to determine how much operational and financial risk they are willing to bear to innovate and accomplish their objectives. Organisations with a strong risk culture may create suitable RM strategies and policies. A strong risk culture gives organisations the language to articulate acceptable levels of risk. The accountability for RM and decision-making is therefore strengthened, which drives the success of the ERM programme. Additionally, individual interests and attitudes that coincide with organisational values, risk appetite, tolerance, and strategic objectives typically suggest a risk-aware organisation. A shared sense of purpose, ethics, and attitude across individuals and organisations helps to reduce risk and improve decision-making.

5.2 Limitations and recommendations for future research

The study faced a number of confines due to the lack of literature on the effectiveness of RM strategies. Therefore, this limits comparisons with other case studies around the world. The study may encounter some respondents who may reflect bias in their responses or be reluctant to answer certain questions (Leedy & Ormrod, 2016). The study was conducted using a single research method that suppressed triangulation to improve accuracy. The use of statistics lacks an interpretation of the numerical data obtained. Although this study makes a valuable contribution to the literature on example driving a risk management culture the sample size drawn (n=89) could be a limiting and therefore may have difficulty generalising to other public sector organisations. Nonetheless, the researchers believes that the sample was a good representation of the population. Finally, employee involvement may greatly boost the risk culture. Employees, for example, might assist in identifying particular risks and participating in the development of rigorous protocols, policies to govern activities, and communication channels to communicate risk information.

6. Conclusion

This study aimed to investigate the organisational risk model by examining the impact of RM in enhancing the organisational performance of a public sector organisation. There is little empirical evidence on how RM strategies affect organisational performance in the public sector, according to this study. Most risk and RM studies concentrated on the private sector, particularly the financial and banking sectors. Therefore, there is a gap in the literature concerning RM in the public sector. As such, this study contributes to the body of knowledge on RM in the public sector. In this study, a quantitative methodology was employed. Using simple random sampling, data was collected using questionnaires, targeting a sample of 150 employees from a public sector organisation in South Africa. A final sample of 89 employees was used in this study. The study's findings revealed that one of the

challenges to RM faced by public organisations is the lack of clear risk metrics as well as a good risk culture and mindset. Further, it was revealed that RM strategies positively correlate with organisational performance in the public sector. This implies that effective RM is key to improving the performance of public sector organisations. Based on these results, it was recommended that the organisation should promote an effective risk culture and risk mindset. The study is beneficial to future researchers and academics. In addition, this study is significant for the management of public organisations in general and the management of the researched organisation in particular.

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