

Local government project risk management maturity measurement model for leveraging effectiveness of local government project risk management

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Abstract

Project risk measurement is a critical driver of local government project implementation. It aids identification of the level of the effectiveness and maturity of project risk management to bolster the seamless process of local government project implementation. Unfortunately, empirical facts imply local government project risk measurement is not yet well developed to the extent of leveraging successful local government project implementation. As these explain why some local government projects are often marred by risks to only fail as others fail to get completed, this research evaluates the level of local government project risk measurement maturity in the South African local government. To accomplish that, the study used interpretivist research paradigm, exploratory research design and qualitative research method entailing the usage of content analysis. Content analysis was used to evaluate the existing information and data in the local government repositories about the process used for measuring and mitigating local government project risks as well as their associated limitations. Findings that were thematically analysed revealed the effectiveness of the process of risk identification and mitigation is often still marred by poor risk management culture, poor governance and lack of proactive initiatives to identify and mitigate all forms of risks. Failure to proactively identify and mitigate all risks was found to have caused late interventions that affect identification and mitigation of all risks in their early stages. Such risks were found to include poor governance, corruption and fraud that affect optimisation of the limited financial resources as well as supply chain risks, ecological and health and occupational risks. Given the fact that a model for measuring project risk measurement was also found to be a challenge, the study extracted and suggested the local government project risk management maturity measurement model (LoG-PRiMMM-Model) as one of the new insights and contribution of the study that can be replicated for leveraging project risk measurement and mitigation in the contemporary local government sphere

Keywords: Project Risk Management; Project Risk Measurement; Local Government; Performance; Service Delivery; Risk Mitigation.

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1. INTRODUCTION

Measuring the overall maturity of the local government project risk management is critical for leveraging the overall effectiveness of the local government project risk management. Project risk management maturity refers to the process of discerning the level of the development and effectiveness of the project risk management systems (Santos, Santos, Tavares & Varajao, 2020; Tadewald, 2014). It explores the depth to which risk identification and mitigation are inherently integrated in project conceptualisation and implementation. Measuring the maturity of the project risk management systems edifies the evaluation and elimination of the weaknesses that undermine the effectiveness of the local government project risk management. ^[1]

Improved effectiveness of project risk management approach is critical for leveraging the effective performance of the contemporary public sector organisations. ^[2] This is attributable to the fact that the local government sphere relies on the conceptualisation and implementation of an array of different socio-economic projects as the means for responding to the different socio-economic needs and demands of the population. ^[3]

In effect, an effective local government project risk management aids the identification and mitigation of risks that are arising from the implementation of different government projects. This enhances the minimisation of the wastage of financial resources to spur the overall improvement of the level of resource optimisation. ^[4]

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Improved level of resource optimisation creates enormous financial reserves that can be used for financing an array of different government projects to respond to the increasing array of different needs and demands of the population. It also edifies the development of efficient and effective internal control systems. This bolsters the efficiency and effectiveness of the process of activities' accomplishment to influence the achievement of the desired strategic project outcomes. ^[5,6,7,8,9,10]

However, that would require the development and application of a four steps' project risk identification and mitigation framework to aid risk identification, analysis, measurement and mitigation. ^[11] It would also require integration of an appropriate audit, procurement and performance management systems with the internal risk management systems. ^[12] The integration of an appropriate internal audit system would enhance frequent analysis and mitigation of wasteful expenditures as well as incidents such as corruption that may affect the optimisation of the limited financial resources to enhance the implementation of different local government projects. ^[13]

At the sametime, project risk management system which is intertwined with the system that aids procurement effectiveness is also critical for bolstering the minimisation of wastes that often arise from the flouting of the procurement processes. ^[14]

As this leverages the level of resource optimisation, the integration of project risk management with an effective performance management system is also critical for identifying and mitigating risks that are caused by the human resource related activities. All these may not only impact on the improved level of resource optimisation, but also operational efficiency and effectiveness to enhance the overall efficiency and effectiveness of the process for service delivery. ^[15]

However, despite the existence of comprehensive policy and legislations on risk management in the local government sphere, the rationale of this research is that it is justifiable and motivated by the fact that management of risks is still a major challenge that most of the contemporary local government managers still grapple with (Chiliza, Laing, Feeley & Borba, 2021; Irfan et al., 2021; Mochoari, 2021).

Such risks also affect the successful implementation of different local government projects (Lubin & Esty, 2010). The use of less broader and integrated project risk management framework also has affected the comprehensive identification and mitigation of all forms of risks such as fraud and corruption risk, supply chain risks, and governance and ethical risks. ^[16]

Certainly, a lot of studies have attempted to address the challenge of risk management in the local government sphere (Abepro, 2016). However, as most of the studies continue to focus only on the traditional

steps for risk management that encompass risk identification, analysis, measurement and mitigation, only little seems to have been done to explore the level of local government project risk management maturity.

Given the limited research on local government project risk management maturity analysis, the rationale and justification of this research is that it will offer new project risk management insights for measuring the level of project risk management maturity as a critical determinant for evaluating the strides that the local government has undertaken to improve its project risk management system. ^[17,18,19,20,21]

To achieve that, the entire research process is driven by its overriding purpose/motive which is to evaluate the effectiveness of project risk management in the South African local government. Such analysis offers critical new insights as reflected in the local government project risk management maturity measurement model (LoG-PRiMMM-Model) in Figure 1 that can be adopted for measuring the overall maturity of the local government project risk management. ^[22,23]

As this will aid analysis of project risk management maturity levels in local government projects, the core reasoning in the LoG-PRiMMM-Model is also well accentuated in different theories and literature as critical for leveraging the measurement of project risk management maturity level. ^[24,25,26]

2. LITERATURE REVIEW

Project risk management maturity refers to the extent to which an organisation is able to consistently identify and mitigate all risks to influence the achievement of the desired outcomes. It measures the overall understanding across different facets of the organisation about the importance to identify and mitigate risks. ^[27,28,29]

Project risk management maturity assesses the extent to which risk management processes are integrated across different operational processes. It also assesses the extent to which risk management is not only undertaken as a regulatory compliance improvement initiative, but also as an activity which is undertaken as part of the organisational culture. ^[30,31,32]

As risk identification and mitigation get recognised as part of the organisational culture, project risk management maturity also explores the extent to which proactive initiatives are consistently undertaken to bolster project's risk identification and mitigation capabilities (Malhotra & Dash, 2011; Santos, Santos, Tavares & Varajao, 2020). Project risk management maturity measures the extent to which complementary variables such as good governance, ethical leadership, frequent use of internal and external auditing and involvement of all the stakeholders are consistently considered as critical for bolstering project risk management capabilities. Even if managers are often

charged with the roles of directing and influencing the process of risk management, project risk management maturity still examines how risk management initiatives are consistently integrated in partner businesses such as suppliers, contractors and subcontractors (Lubin & Esty, 2010 as cited in Osei-Kyei & Chan, 2017). It explores the extent to which the employees in partner businesses such as suppliers, contractors and subcontractors are able to identify and mitigate all forms of risks that may affect project implementation (Canada Treasury Board Distribution Centre, 2018).

Project risk management maturity is also often influenced by the extent to which continuous improvement initiatives are undertaken to not only identify and use new risk identification and mitigation methodologies, but also to improve the competencies of the employees to apply the existing risk management methodologies. Ongel's (2009) organisational maturity risk management model reiterates risk management maturity to be determined by the capabilities to consistently plan and achieve targets, use more systematic risk management processes. [33,34,35,36]

However, this research is motivated by the fact that not much has been undertaken in the previous studies to develop and enrich the theories for measuring the government project risk management maturity. But Minsky's (2006) Risk Maturity Model (RMM) offer insights that can be used to further develop theories for measuring government project risk management maturity. [37,38,39]

3. Minsky's Risk Maturity Model (RMM)

To create value and utility in an organisation, Minsky's (2006) Risk Maturity Model (RMM) posits the development and evolution of the risk management framework to be influenced by a combination of twenty-five drivers for seven attributes. The seven attributes for measuring the maturity of risk management are ERM-based approach, ERM-process management, risk appetite management, root-cause discipline, risk uncovering, performance management, and business resiliency and sustainability (Minsky, 2006 as cited in Canada Treasury Board Distribution Centre, 2018). The ERM-based approach evaluates the extent to which risk management is recognised by the executives and integrated as part of the ERM system and corporate culture.

Using the ERM-based approach, the inculcation of a culture of risk averseness is also often measured by how risk management measures are integrated across multiple processes, functions, business lines and roles (Chen & Lin, 2018). Such analysis is supplemented by the evaluation of how effectively the risk management measures are supported by effective communication mechanisms, investment in the appropriate technology, compliance, control, and risk management and reporting

(Dave, 2018). The effective application of the ERM-based approach is often accompanied by the evaluation of the entrenchment of ERM-process management.

ERM process management examines the degree of the integration of the critical risk management processes that include identification, assessment, evaluation, mitigation and monitoring into the critical key business processes such as procurement, manufacturing, inventory management and recruitment (Porter & van der Linde, 1995 as cited in Osei-Kyei & Chan, 2017).

The analysis of the ERM-process management is often accompanied by evaluation of the risk appetite management that measures the variance between the acceptable risk and risk tolerance to assess the risk appetite that the management considers to be acceptable (Okanga, 2017). As on the other hand, root-cause discipline explores the entrenchment of risk management culture through which an enterprise takes intense analysis of people, external environment, systems, processes and business relationships to identify and resolve the actual root causes of the operational risks (Tadewald, 2014).

Uncovering risks entails the evaluation of the extent to which the risk management department applies a combination of the available quantitative and qualitative data to identify and respond to all the identified risks and opportunities. Using a framework akin to Kaplan and Norton's (1992) Balanced Scorecard, the attribute of performance management often explores the extent to which strategy executions, financial plans and customer, internal business processes and learning and growth are exposed to risks or deviating from the plan and expectations (ManMohan & Seongha, 2007 as cited in Santos et al., 2020).

Business resiliency and sustainability of the risk management systems examine the degree to which risk management measures are consistently and sustainably ingrained beyond the critical technological platforms to cover risks linked to risks of vendor and distribution dependencies, supply chain disruptions, dramatic market pricing changes, cash flow volatility and business liquidity. To measure of the maturity of the management systems, Minsky's (2006) Risk Maturity Model (RMM) as cited in Canada Treasury Board Distribution Centre (2018), uses a scale of 5 to 1, with 5 indicating greater maturity to assess whether the attribute of ERM-based approached are effectively explained by the critical drivers such as executive support, risk ownership, assimilation into front-office practices, risk culture's accountability, communication and pervasiveness.

The RMM model also applies the same scale to measure the drivers of ERM-process management that include process repeatability, scalability, oversight,

reporting and application of qualitative and quantitative risk measurement mechanisms (Shenkir & Walker, 2007; Chen & Lin, 2018).

Whereas risk appetite management is measured by risk-reward tradeoffs, risk-reward-based resource allocation, and analysis of portfolio collections to balance risk, the drivers for root-cause discipline are often linked to linkage of risk management with performance indicators, flexibility and understanding of risk dependencies and consequences, and consideration of risk implications of different business relationships (Mabona & Shakantu, 2016).

Uncovering risks is evaluated by the assessment of the risk drivers associated with business areas' risk ownership, formalisation of risk indicators and measures, consistent reporting, and conversion of potentially adverse events into opportunities (Osei-Kyei & Chan, 2017). The drivers of performance management facilitates the exploring of whether risk information are integrated in the planning process, as well as goal communication, examination of the financial, customer, business process and learning (Johnson & Johnson, 2015).

As on the other hand, the maturity of business resilience and sustainability is discerned by evaluation of integration of operational risk in planning, analysis of the consequences of actions and inactions, and undertaking scenario based planning.

Through the utilisation of the seven attributes and the twenty-five risk drivers, Minsky's (2006) Risk Maturity Model (RMM) contributes enormously to value creation and utility in an organisation by eliminating duplications, connecting support functions with critical business processes, and elimination of defects and wastes. It also aids the identification and resolution of the root causes of operational deficiencies and scalability of the processes for better decision making exercises (Duarte, Brito, Serio & Martins, 2011 Irfan et al., 2021).

Such reasoning is consonant with the underpinning argument in Johnson and Johnson's (2015) Framework for Enterprise Risk Management as cited in Mochoari (2021), indicates that the risk identification, assessment, response and evaluation edify the identification and mitigation of mundane and adverse risks inherent in critical activities. It also enhances the identification and elimination of major strategic threats, operational deficiencies, compliance related issues and reporting obligations.

In the context of Johnson and Johnson's (2015) reasoning, these facilitate the improvement of operational efficiency to edify the extent to which an organisation is able deliver superior values. In contrast to the views in Minsky's (2006) Risk Maturity Model (RMM), Tadewald's (2014:19) Risk Management Capability Maturity Model (RM-CMM) for Complex

Product System (CoPS) offers a different perspective for measuring project risk management maturity.

4. METHODOLOGY

Methodology for accomplishing this research entailed usage of interpretivist research paradigm and exploratory research design integrated with qualitative research method (Snelgrove, 2014; Strauss & Corbin, 2015; Venkatesh, Brown & Sullivan, 2016; Walliman, 2016). The application of qualitative research method entailed usage of qualitative content analysis to evaluate the existing information and data in the local government repositories about the process used for measuring and mitigating local government project risks.

Content analysis examined the existing literature and information to assess the kinds of project risk management systems that are used for identifying and mitigating project risks in the South African local government. It also examined the extent to which such local government project risk management systems have influenced the successful implementation of local government projects, as well as how well-developed and mature are such local government project risk management systems.

Subsequently content analysis reviewed local government literature to identify the factors that are causing the poor development of the local government project risk management systems. The gathered data was thematically analysed to extract critical themes and subthemes on the approaches for project risk measurement as well as their limitations.

Given such findings and while also taking cognisance of the measures for enhancing validity and reliability as well as research ethical considerations, the study extracted the local government project risk management maturity measurement model (LoG-PRiMMM-Model) that can be replicated for leveraging project risk measurement and mitigation in the contemporary local government sphere. In that context, below are the details of the results of content analysis.

5. RESULTS

The essence for project risk identification and mitigation is strongly emphasised in Section 195 of the 1996 Constitution of the Republic of South Africa. To leverage the overall efficiency and effectiveness of public administration, Section 195 of the 1996 Constitution of the Republic of South Africa agitates for the need of public sector managers to uphold the values and principles for efficient, economic and effective utilisation of public resources towards the accomplishment of the desired public objectives and outcomes (Botha, Niekerk, Wentink & Coetzee et al., 2011).

It emphasises the need for accountability and

transparency as means for facilitating timely accessibility to accurate information. In these initiatives, Section 195 of the 1996 Constitution of the Republic of South Africa also strongly emphasises the need for planning as a mechanism for defining the course of activities that must be accomplished if public sector managers are to avoid wastes and influence the achievement of the desired strategic objectives and goals (Sutherns & Olivier, 2021).

Planning is recognised as of essence for aiding the clarification of the intentions of government, facilitating budgeting according to the identified priorities, and monitoring and evaluation as well as enforcement of accountability throughout the spheres of government. Embedded in these strategic plans, is the importance for the development and application of the appropriate internal control and risk management approach to influence the achievement of the desired outcomes (Chagutah, 2014; Chiliza, Laing, Feeley & Borba, 2021; Irfan, Khan, Hassan, Hassan, Habib, Khan & Khan, 2021; Mochoari, 2021).

However, even in the midst of the establishment of relevant risk management policies by most of the municipalities, the effectiveness of the process of risk identification and mitigation is often still marred by poor ethical culture, poor governance and lack of proactive initiatives to identify and mitigate all forms of risks. Failure to proactively identify and mitigate all risks has often caused late interventions (Okeyo, Lehmann & Schneider, 2021).

This affects the identification and mitigation of all risks in their early stages. All these challenges are further compounded by lack of awareness about the importance of risk management among the middle managers and lower level employees as compared to the senior managers. This affects the cascading of the best risk management practices at the lower levels to edify the integration of the importance of effective risk identification and mitigation as part of the daily processes of the accomplishment of different required activities (Cooperative Governance & Traditional Affairs, 2020).

In other words, as further compounded by lack of the appropriate code of conduct, this has also affected the emergence development of the appropriate risk management culture. Besides lack of involvement of the employees and relevant stakeholders in the design of risk management measures, the other challenges are linked to the lack of the existence of an integral risk management framework.

The implications are latent in the fact that as some of the risks are identified and mitigated, some of the other risks are often not identified and mitigated (Chiliza, Laing, Feeley & Borba, 2021). These risks refer to issues of poor governance, corruption and fraud that affect optimisation of the limited financial resources.

In addition to financial risks, supply chain risks, health and occupational risks, fraud characterised by ghost workers, ghost beneficiaries, fraudulent subsistence and travel claims are noted to be the most common in different local government institutions.

Even though relevant units have been developed to deal with fraud and corruption risks, a challenge still arises from the under-capacity of the municipalities to identify and tackle all forms of fraud and corruption risks (Doherty, Gilson & Shung-King, 2018; okanga & Drotskie, 2015).

This is further substantiated in the fact that even if attempts are undertaken by some of the local government institutions to identify and mitigate all forms of risks, the approach to the implementation of risk management strategies were strongly emphasis on regulatory compliance rather than institutionalisation of risks tends to affect the effectiveness of risk management in the local government sphere (Mochoari, 2021).

This is further exacerbated by the fact that only limited efforts seem undertaken to integrate risk management plans with the planning process. All these render measuring the overall maturity of the local government project risk management critical for discerning the inherent weaknesses as well as the remedial improvement measures that can be adopted to bolster the overall effectiveness of local government project risk management (Jacobsen & Hasumi, 2014). It is therefore against that backdrop that this research offers the local government project risk management maturity measurement model (LoG-PRiMMM-Model) that can be replicated for leveraging project risk mitigation in the contemporary local government sphere.

6. MANAGERIAL IMPLICATIONS

Managerial implications of this research are that the research findings suggest measurement of local government project risk management maturity is critical for leveraging the successful implementation of local government projects. It entrenches a culture of project risk management to aid early identification and mitigation of risks before they turn grave to reverse.

However, given the complexities and low development of project risk management in the local government sphere, this research seeks to address that by contributing a new theory in Figure 1 that will not only deal with such complexities, but also contribute to enriching the existing knowledge of local government project risk management.

To achieve that the new theory/contribution as reflected in the LoG-PRiMMM-Model in Figure 1 posits that the use of an integrated project risk management approach that would leverage effective project risk identification and mitigation in the South African local government is influenced by certain fundamental

pillars.

Such pillars include local government project risk management, project risk management process and measurement of local government project risk management maturity. The fundamental pillars for local government project risk management create the foundation that bolsters the effectiveness of project risk management in the South African local government.

This is because local government project risk management aids the integration of risk management in strategic planning, involvement of employees, contractors and subcontractors in risk identification and mitigation, good governance, ethical leadership, organisational culture, establishment of a risk management policy, and the integration of risk management in monitoring and evaluation.

It also requires the integration of risk management in all critical processes for project implementation. It creates the basis for the application of the strategic project risk management process that would require project risk identification, analysis, measurement, response, and monitoring and evaluation. However, as

such a process is being accomplished; measuring the local government project risk management maturity can be accomplished by evaluating whether it is vulnerable, reactive, compliant, proactive or resilient stage.

Vulnerable stage would signify high levels of risks that affect project implementation. Reactive stage implies project risk identification and mitigation are reactionary after the occurrence of risks. Compliant stage suggests project risk management measures are undertaken just for improving regulatory compliance.

Proactive stage would mean that interventions are undertaken to identify and mitigate risks before they occur. Resilient stage would imply that sound risk management systems are consistently put in place to withstand all forms of risks. All these would leverage resource optimisation, successful project implementation, local government's operational efficiency and the improvement of the performance of the local government sphere.



Figure 1: Local Government Project Risk Management Maturity Measurement Model (LoG-PRiMMM-Model)

7. CONCLUSION

Given the level of complexities explaining poor project risk management in the local government sphere, findings suggest its project risk management maturity level to oscillate between the vulnerable, reactive and compliance stages. To leverage local government project risk measurement maturity level to the resilient stage, it is suggested that local government must consider embracing the Local Government Project Risk Management Maturity Measurement Model (LoG-PRiMMM-Model) in Figure 1. However, future research can still explore how project risk management culture can be further entrenched in local government project risk management.

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