Improving Programme Risk Management Practice in Southern Africa

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Abstract

Large southern African project-based programmes and region-specific implementation challenges require region-specific guidance to optimise programme success. Using an online survey, this mixed method study first quantitatively identified priority programme risk management challenges. The survey data indicated inadequate programme risk management skills as a critical regional challenge. As these skills systemically encompass other identified challenges, the subsequent study phase used a skills-based literature review and interviews with experienced programme risk management practitioners to explore skills improvement. This analysis produced a framework comprising structural, technical and personal enablers of programme risk management skills. The study adds both practical value and insight to an under-explored area critical to the southern African development agenda. It could be replicated in other similar regions, thereby adding value to the existing programme management knowledge base.

Introduction

Large and complex multi-project programmes are increasingly being employed worldwide to deliver strategic change. Accordingly, the significance of programme risk management as an integral part of managing such programmes is now generally accepted.[1] However, differences in regional business characteristics imply that successful approaches to programme risk management in one region may not necessarily work elsewhere.[2] Consequently, the increasing number of large and complex programmes in southern Africa require a region-specific understanding of the predicament facing programme managers to optimise programme success. Yet, in their early critical review of standard programme management approaches, Lycett, Rassau, and

Danson identified inadequate transfer of experienced-based programme management lessons in practice and academic research as a critical barrier to programme success.[3] They call for increased transfer of programme risk management knowledge to improve the efficiency and effectiveness of such programmes.[4]

Pellegrinelli also raises concerns about the adequacy and appropriateness of programme-related technical guidance advocated by professional bodies.[5] These authors advocate learning from the experiences of practitioners to improve programme management theory and practice.[6,7] However, despite such insights into the challenges of managing complex and risky organisational programmes, programme risk management remains an under-developed discipline in practice and academically.[8,9,10,11,12,13] This also holds for the southern Africa region. These issues underscore the need for research on experience-informed guidance on addressing regional programme risk management challenges. Therefore, the objectives of this two-phased mixed method study were: to quantitatively identify priority southern African programme risk management challenges; and to qualitatively explore how to address the critical challenges.

The study findings provide theory-based and practice-based insight into an under-explored area vital to the southern African development agenda. In addition, these findings could be used to improve programme risk management in other regions that face similar challenges, thereby adding value to the existing programme management knowledge base. The remainder of this paper is organised in various sections. The next section explains the academic study background, including definitions of key concepts and the findings of the initial research that underpinned the present study. Thereafter, the two-phased mixed method approach used in the study is explained. The study results are presented and discussed, and the paper concludes with practical implications and recommendations that could be used to address southern African programme risk management challenges.

Study background

This study built on the southern African model of programme risk management challenges published by Mulambya and Zaaiman[14] to explore how to address the challenges identified in the initial study. Relevant findings from the original study are summarised in this section.

Definition of concepts

Table 1 defines the programme-related and risk-related concepts used in this study. Although the terms programme and programme management may have multiple definitions,[15,16] the Project Management Institute's (PMI) widely accepted definitions for these two terms are used in this study. (See Table 1.)

Table 1: Definitions

Terminology	Definition
Programme	Related projects, subsidiary programmes and programme activities managed in a coordinated manner to obtain benefits not available from managing them individually.[17] Such programmes are intended to achieve organisational long-term strategic, rather than short-term tactical, objectives.
Programme management	Centralised and coordinated management of a programme to achieve its strategic objectives and benefits.[18]
Programme risk management	The management of possible risk events that may adversely impact achieving an organisation's programme management objectives.

The definitions provided in Table 1 highlight the strategic and holistic nature of programme management, in contrast to the typical short-term tactical delivery criteria associated with projects. These definitions indicate that programme management: (a) integrates individual projects into a programme to realise its strategic objectives and benefits; (b) is strategic in nature, whereas project management is tactical in character; (c) focuses on multiple projects and their systemic interdependencies, whereas project management emphasises implementing single projects. These differences mean that programme, and project, management should not be regarded as an extension or subsidiary of each other.[19,20,21,22] Traditional project management approaches are, therefore, inadequate for delivering programmes in complex and dynamic environments that require strategic project portfolios.[23,24,25]

Southern African programme risk management challenges

Based on the literature and interviews with practitioners in southern Africa, Mulambya and Zaaiman identified seven execution-specific programme risk management challenges relevant to southern Africa.[26] Table 2 provides a brief summary of these challenges.

Table 2: Summary of programme risk management challenges

No.	Challenge	Description
1	Inadequate programme risk management strategy	Inadequate commitment and planning for institutionalising programme risk management in an organisation.[27,28]
2	Inadequate programme management standardisation	The terms programme and programme management are used in different ways in the literature and practice, leading to confusion about what programme management is. Consequently, lower-level programme management processes, such as programme risk management, are inadequately defined, leading to implementation issues.[29,30,31]
3	Inadequate programme complexity understanding (e.g. interdependencies)	Programme management interacts extensively with organisational strategic management processes and individual projects. Hence, programme risk does not simply equal the sum of individual project risks. Inadequate understanding of the resultant complexity hampers programme efficiency and effectiveness.[32,33]

No.	Challenge	Description
4	Inadequate programme risk management awareness	Poor familiarity with programme risk management, which may lead to incorrectly equating project and programme risk management or simply applying project risk management processes to project programmes.[34,35]
5	Inadequate programme risk management skills	A shortage of experienced programme risk management resources with suitable skills to carry out programme risk management tasks or activities.[36,37]
6	Inadequate programme risk management knowledge	Frameworks, processes, procedures and guidelines specifically developed for programme risk management are difficult to find.[38,39,40]
7	Inadequate programme risk management communication	Lack of accuracy, completeness or timeliness for programme risk reporting.[41,42]

Research methodology and data

The challenges listed in Table 2 formed the basis of the present follow-up study to explore priority areas for improving southern African programme risk management. This was done using a two-phased mixed method approach: to quantitatively identify the priority southern African programme risk management challenges; and to qualitatively explore how to address the most critical challenge.

Quantitative identification of priority programme risk management challenges

Quantitative data collection

An anonymous survey-based approach was used to identify the region's priority programme risk management challenges. The study population consisted of participants with programme management experience in different economic sectors in southern African countries, including Angola, Botswana, eSwatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe. As programme risk management is a niche management area, organisations employ small numbers of experienced managers who tend to work across these southern African countries. Therefore, the respondents' views represent a regional view rather than situational views related to specific southern African countries.

As no southern African programme-management-specific professional association currently exists, this research was conducted through a southern African project management professional association (hereafter, referred to as 'the association'). This association has an active membership of about 1 300 project management professionals, some of whom have programme risk management experience. The association provided access to potential participants with programme management expertise across the target region.

A non-probability convenience sampling approach[43] with voluntary participation was used in the study. The association's chief executive officer (CEO) emailed the survey web link to potential respondents. The link was left open for a month, with the CEO sending a reminder email to the target participants after two weeks. This resulted in a total of 42 survey responses. As the number of association members with programme risk management experience was unknown,

the actual response rate expected from the study target population could not be determined. However, the relatively small number of responses compared to the total membership of the project management association reflects the niche nature of programme risk management skills and the corresponding low prevalence of such skills in the sub-continent.

Table 3 provides an overview of the sectors in which the study participants are employed and the number of years of experience related to programme risk management that they reported. Most participants had more than five years of programme-management-related experience, with 45 per cent having more than 10 years of experience. The wide range of employment sectors represented also provided valuable information about the perceived status of programme risk management in southern Africa. The size of the study sample was sufficient for purposes of ranking to be used to identify programme risk management challenges that need to improve first.

Table 3: Demographic profile of participants of the study (n = 42)

Demographic characteristic	Demographic variable	Frequency	Percentage
Participant's employment sector	Oil and gas (petrochemical)	5	12
	Government and public services	8	19
	Capital projects and infrastructure	17	40
	Other	12	29
Total		**42**	**100**
Participant's programme-management-related experience in years	Less than or equal to 1 year	2	5
	More than 1 and less than or equal to 5 years	8	19
	More than 5 and less than or equal to 10 years	13	31
	More than 10 years	19	45
Total		**42**	**100**

Voluntary participation in the survey suggests that the respondents cared sufficiently about the purpose of the survey to take the time to participate. Although volunteer bias plays a role in the findings of any non-probability study,[44,45] willingness to participate in such a niche topic study provides confidence in the trustworthiness of the findings.

Study participants were asked to answer the following question:
To improve the execution of programme risk management in (southern African) organisations, I believe that we must start with improving … (select only one of the options below – options provided in alphabetical sequence):

1. Programme complexity understanding
2. Programme management standardisation
3. Programme risk management awareness

4. Programme risk management communication
5. Programme risk management knowledge
6. Programme risk management skills
7. Programme risk management strategy

Quantitative data analysis

The frequency of response for each challenge, expressed as a percentage, was used to rank the programme risk management challenges. (See Table 5 and Figure 1.) The formula used to calculate frequency percentages is $(n/N) \times 100$, where n is the frequency of responses for each challenge, and N is the total number of responses (42).

Qualitative exploration of how to improve the highest priority programme risk management challenge

In the second study phase, an inductive literature review was done. It led to the development of a deductive experience-based critical priority challenge improvement framework, which was based on an in-depth qualitative investigation into the highest-ranked programme risk management challenge identified in the first phase of the study. This framework was based on a narrative review of the literature relevant to the top priority challenge, combined with insight from 15 semi-structured interviews containing open-ended questions done with programme risk management practitioners in various employment sectors in southern African.

Qualitative data collection

Relevant academic literature and specialist documents were examined for general guidance on the requirements for improving the highest priority challenge. Academic documents were found using appropriate internet tools such as Google Scholar and using appropriate keywords related to the top challenge.

Thereafter, semi-structured interviews were done with experienced programme risk managers in southern Africa to explore how to solve the top challenge. These interviews lasted between 30 and 60 minutes. The interview questions explored possible ways to improve the main challenge. The questions posed are provided in the results and discussion section. Table 4 provides an overview of the employment sector profile of the 15 interviewees, each of whom had more than 10 years' programme management experience. These interviewees were drawn from organisational sectors in southern Africa similar to those represented in Phase 1 of the study. This allowed for sector-wide information on interventions suitable to the region to be collected. To ensure respondent anonymity, the interviewees are identified numerically in the results and discussion section.

Table 4: Employment sector profile of the 15 interviewees

Participant's employment sector	Frequency	Percentage
Oil and gas (petrochemical)	3	20
Government and public services	3	20
Capital projects and infrastructure	7	47
Other	2	13
Total	**15**	**100**

Qualitative data analysis

The selected articles, documents and transcribed study interview data were analysed reflexively using established manual qualitative data analysis techniques to identify themes related to approaches to solving the critical programme risk management challenge.[46,47] These themes are provided in Tables 6 and 7 as thematic codebooks, also called qualitative data analysis tables.

These literature-based themes provided a guide against which the thematic codes from the interview data were evaluated. For example, the analysis of the interview data resulted in an initial list of 184 top challenge-specific codes, which were mapped to related literature-based themes. Thus, findings from the interview data were continuously compared with the literature to determine which literature-based themes have also been experienced in southern Africa. Additional themes not found in the literature were added to the qualitative data analysis table provided in Table 7. Consistent southern African experience-based themes were found across the 15 interviews, which implies a shared experience across the employment sectors. Adequate data saturation levels were reached to satisfy the study aim.[48] Therefore, the researchers are confident that the interview sample provided a representative overview of the region's top programme risk management challenge.

Qualitative research methods, as employed here, explore the meaning of social phenomena through the collection, analysis and interpretation of textual data. However, the validity of qualitative research findings may be criticised due to its subjective nature and the absence of supporting quantitative data.[49,50,51] Such scepticism can be reduced by actively enhancing the rigour of a study. A reflexive research approach allows researchers to mitigate the risk of bias such as confirmation bias when interpreting research findings. Reflexive research is characterised by ongoing self-critique and self-appraisal by researchers.[52,53,54] The researchers actively employed reflexivity throughout this study to mitigate the risk of biased interpretation, thereby enhancing the credibility of the study findings.

Results and discussion

Study Phase 1: Quantitative

Table 5 and Figure 1 provide the programme risk management challenge ranking based on the responses to the survey item. The two most selected options were programme risk management skills (26 per cent) and programme risk management awareness (24 per cent). However, the identified programme risk management challenges can be expected to be interdependent, with each challenge influencing the other, as shown in Figure 2. Programme risk management skills are required in each of the identified challenges. Based on this practitioner-informed finding, the rest of the study focused on the broader theme of addressing programme risk management skills. It is expected that a programme risk management skills-based framework would assist researchers and practitioners to investigate and address more specific skill sets. Therefore, the second phase of the study focused on a qualitative exploration of how programme risk management skills can be improved.

Table 5: Ranking of programme risk management challenges

No.	Challenge	Frequency	Percentage	Ranking
1	Programme complexity understanding	4	10	5
2	Programme management standardisation	1	2	7
3	Programme risk management awareness	10	24	2
4	Programme risk management communication	2	5	6
5	Programme risk management knowledge	6	14	4
6	Programme risk management skills	11	26	1
7	Programme risk management strategy	8	19	3

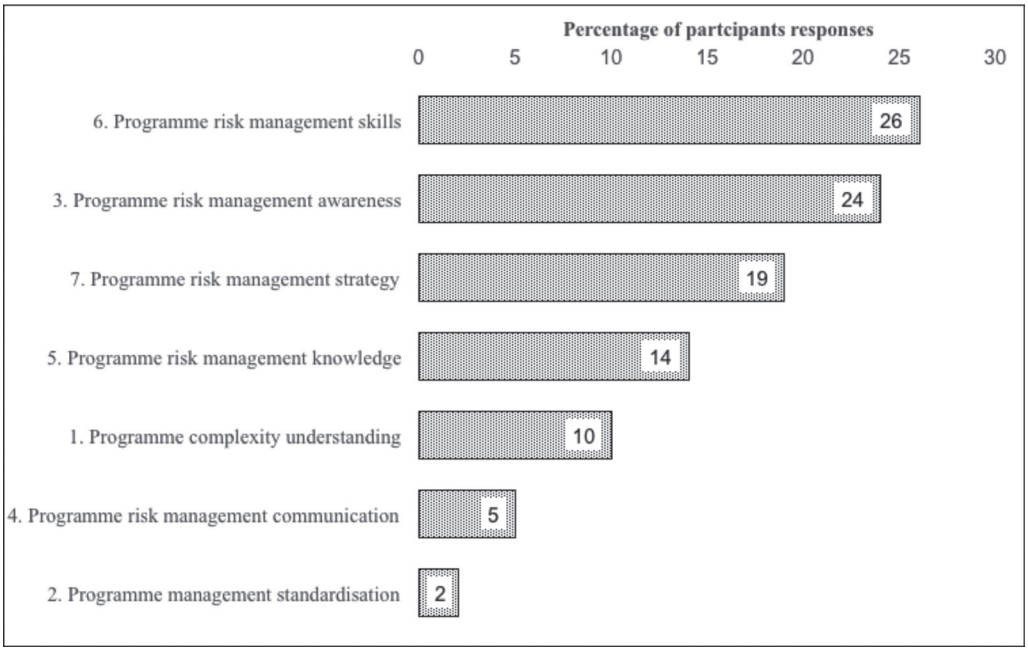

Figure 1: Ranking of programme risk management challenges

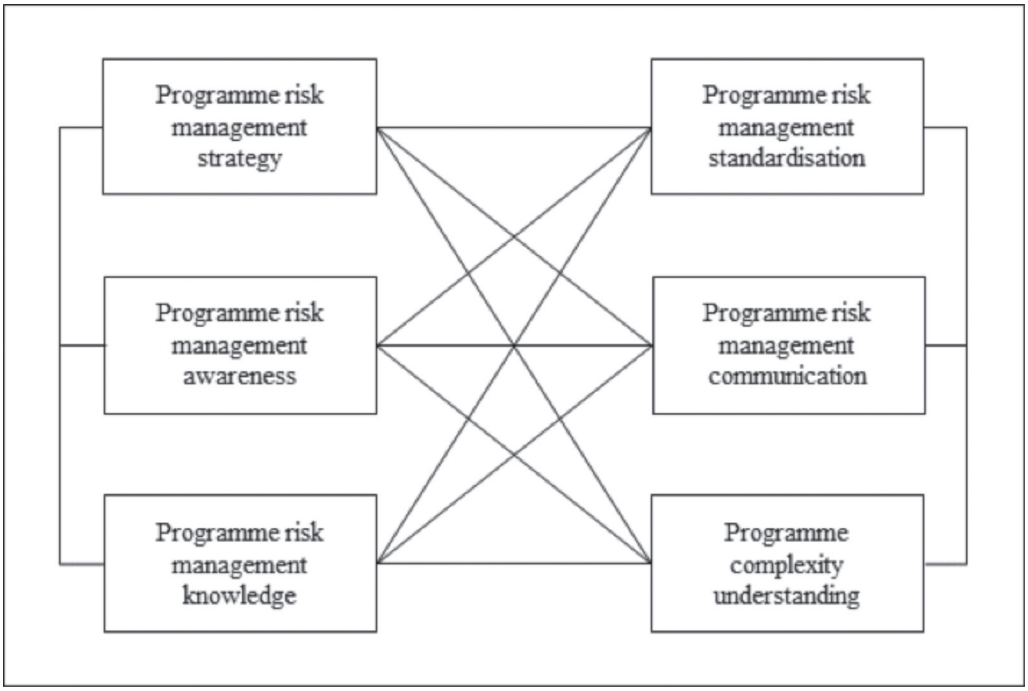

Figure 2: A systemic view of programme risk management skills sets

Study Phase 2: Qualitative

Although skills development has become an increasingly important policy issue internationally,[55,56] the definition of the term skill remains highly debatable.[57,58] For this study, skills were viewed as personal work-related competencies resulting from individual or group-based formal, non-formal and informal learning. Formal skills development leads to formal qualifications, whereas non-formal skills development refers to planned educational interventions not intended to lead to formal qualifications. Informal learning includes incidental learning during daily activities.[59] Skills can therefore be learnt, and would create a skilled workforce, which is important to a thriving economy.[60]

Critical skills shortages are a worldwide concern and are not limited to any specific geographic region or field of expertise.[61,62,63] These shortages can be attributed to many causes, such as rapid advances in science and technology and intensified economic competition,[64] non-supportive legislation,[65,66] lack of investment in skills development,[67] and out-of-date education curricula.[68,69] Correspondingly, interventions aimed at nurturing skills have been employed in different parts of the world. For example, vocational education and training is widely acknowledged as a method to matching the skills required by employers with those offered by the workforce.[70,71] Other interventions have also been used to improve work-related skills, such as supportive legislation[72,73,74] and government, academic and industry collaboration[75,76]. However, little has been published on developing programme risk management skills, and especially not in southern Africa.

Skills-related themes

The general skill themes identified in the literature were classified into the four high-level thematic categories shown in Table 6. The researchers focused on training-based formal and non-formal learning, leaving the area of informal learning for future studies. Table 7 shows the corresponding interventions in the literature mapped to these thematic categories. Table 8 provides the corresponding programme risk management interventions for southern Africa derived from the interviews. Table 8 further indicates which interventions correspond to those found in the literature and the additional interventions from the interviews.

Table 6: Organisational skills improvement themes identified in the literature

No.	Thematic category	Description
1	Training	The process of acquiring programme management and programme risk management knowledge and subsequently developing required skills through planned educational interventions.
2	Skills	A skill is a competence belonging to an individual or a group of people who develop and exercise that skill in their workplace interactions.
3	Skills development target groups	Groups consisting of the individuals or groups who are the intended recipients of skills development action.
4	Structural skills enablers	Formal policies, legislation, regulations and systems that provide a framework-based environment to address skills challenges.

The semi-structured interviews were aimed at exploring southern Africa's requirements for developing programme risk management skills, based on the experiences of programme management practitioners in the region. The main interview questions were:

1. How should programme risk management skills be improved?
2. Why do you think that programme risk management skills should be improved as you suggest?

Table 7: Expected intervention themes on how to address skills challenges based on a review of general skills-related literature

No.	Thematic category	Theme no.	Theme or intervention construct	Theme description
1	Training	1	Training: definition	The process of acquiring knowledge, typically in an institutional environment and subsequently developing the skills required for the job at hand.[77,78]
		2	Training type: vocational	Vocational training provides job-specific technical training and hands-on instructions leading to certification upon successful completion.[79,80]
		3	Training type: on-site and distance	Training may occur in on-site and distance formats for organisational stakeholders who may not always be physically present at a training venue, e.g. via postal correspondence or online courses.[81,82]
2	Skills	5	Personal skills	The skills needed to interact with others in an organisation and accomplish tasks such as communication, negotiation, customer/supplier relationships, problem-solving and team working.[83,84]
		6	Technical or professional skills	The abilities needed to perform subject-specific or field-related tasks or duties that may include engagement with technology.[85,86]
3	Skills development target groups	7	Attracting and developing young talent	Promoting careers and critical skills among young people and developing strategies that generate a sustainable supply or pipeline of young talent in those careers.[87,88]
		8	Skills development among mature and other employees	Upskilling or reskilling more mature workers already active in the workforce with specific vocational programmes.[89,90]
4	Structural skills enablers	9	Legislation	Using legislation as a catalyst for change to address skills gaps in a post-education system.[91,92]
		10	Immigration policy	Using immigration policy to address skills shortages. If well-managed, this could provide a skilled labour force, while developing a pool of home-grown skills for future industry requirements.[93,94]
		11	Accrediting or certifying bodies	Accreditation and certification organisations must: (a) include skill-specific education and skill acquisition as part of their requirements for post-qualification accreditation and certification; (b) verify that certified members have the requisite training.[95,96]
		12	Government, academia and industry partnerships or collaborations	Government, education and industry need to work together in addressing the skills challenge.[97,98]

Table 8: Interview-based programme risk-management-specific themes mapped to organisational skills improvement themes identified in the literature

No.	Thematic category	Theme no.*	Theme	Description	Examples of interview quotes	Quote source
1	**Training**	1 (N)	Improving policymakers' programme management and programme risk management knowledge	Providing education and training to policymakers, such as public sector officials and corporate executives, e.g. increase programme management knowledge among policymakers.	"Decision makers in southern Africa do not understand programme management."	Interviewee 2
		2 (L)	Introducing programme management and programme risk management in education curricula	Introducing programme management (and programme risk management) in the curriculum of institutions of higher learning.	"I have never seen a course like that. I travelled abroad to gain that knowledge and training."	Interviewee 3
		3 (L)	Education and training (in programme management and programme risk management)	Acquiring programme management and programme risk management knowledge, typically in an institutional environment and subsequently developing the skills required for the job at hand, e.g. using online or elearning platforms.	"Online training is also a good way of creating capacity in the organisation."	Interviewee 10
2	**Skills**			**Personal skills**		
		4 (L)	Communication skills	Communicating or reporting programme risk management in a manner that is accurate, comprehensive, timely, clear and useful, e.g. using language and terms that are understood by stakeholders.	"Risk managers do not simplify the risk management process and language for everyone to understand."	Interviewee 7
		5 (N)	Strategic thinking	An entity's or person's capacity for thinking conceptually and systematically to allow for achieving the programme's strategic objectives, e.g. understanding the big picture (programme purpose).	"It is the person who has the capability to integrate complex ideas, and someone who can think and operate at process, strategic, operational and tactical levels."	Interviewee 5

No.	Thematic category	Theme no.*	Theme	Description	Examples of interview quotes	Quote source
		6 (N)	Knowledge-sharing culture	Employees of an organisation having the desired and shared values, attitudes, beliefs and understanding about programme risk management knowledge-sharing, e.g. cross-cultural pollination.	"Those individuals that had the skills are gone. And those who have, do not want to share it for fear of creating competition for themselves."	Interviewee 1
				Technical skills		
		7 (N)	Requirement for generalists rather than specialists	A person with extensive knowledge on a variety of subjects about the organisation. Ideally this person should have worked in the organisation for some time, e.g. a generalist who is an all-rounder rather than a specialist.	"I strongly feel that a good risk manager is more of a generalist than a specialist."	Interviewee 6
		8 (N)	Programme risk management execution	Programme risk management should be implemented and practised properly, e.g. integrating risk management processes into programme management.	"How do you institutionalise programme risk management so that it becomes part of the organisation?"	Interviewee 10
		9 (N)	Programme benefits realisation	Identifying, defining and tracking the realisation of programme benefits, e.g. creating an understanding of programme benefits.	"You need to give them the necessary understanding of the benefits of managing a programme instead of individual projects."	Interviewee 2
		10 (N)	Value of risk management	Understanding the value added by risk management to programme management within the organisational context, e.g. the rationale for programme risk management.	"Risk management is looked upon as a product and as a report to tick the governance box, not as a capability that will save an organisation out of trouble."	Interviewee 6
		11 (N)	Understanding the business	Having adequate knowledge of the business. Risk management should be an integral part of the everyday running of the business and risk managers should understand the business, e.g. have in-depth understanding of the programme management environment.	"I discovered that some of our risk managers themselves lacked an in-depth understanding of the business."	Interviewee 9

No.	Thematic category	Theme no.*	Theme	Description	Examples of interview quotes	Quote source
		12 (N)	Risk management capability	Risk management should evolve over time from being a process to a capability, thereby enabling the organisation to perform risk management tasks at a certain performance level, e.g. programme risk management capability.	"Risk management must be transformed from a process to a capability. A capability then becomes a competitive advantage."	Interviewee 6
		13 (N)	Risk aggregation	Adding up individual project risks in order to obtain an integrated bigger picture perspective, e.g. aggregating project risks in relation to programme objectives.	"We did take risk reviews and updated the risk register at project level and then rolled to programme level."	Interviewee 8
		14 (N)	Interdependency and interface management	Programme managers interact extensively with organisational strategic management and individual projects. Programme risk management should manage these interfaces, e.g. the interdependencies between projects in a programme as well as bottom-up (from projects to programme) and top-down (from programme to projects) risk assessment.	"Understanding how one project affects another project is important in these scenarios."	Interviewee 14
		15 (N)	Programme management and programme risk management maturity level	Improving programme risk management maturity so that programme risk management can attain the level of maturity achieved by project risk management.	"External experience (international) revealed a more mature programme management environment compared to southern Africa."	Interviewee 8
3	**Skills development target groups**	16 (N)	Stakeholder roles and responsibilities	Clearly defined positions that people will occupy in the programme and the tasks or duties that those positions will perform on the programme, e.g. roles and responsibilities of project and programme risk management.	"There are risks which affect every project in the programme. The question is who deals with those risks?"	Interviewee 3

No.	Thematic category	Theme no.*	Theme	Description	Examples of interview quotes	Quote source
		17 (L)	Attracting young talent	Promoting careers and skills where there are gaps among young talent and developing strategies that generate a sustainable supply or pipeline of young people in those careers, e.g. experience-based training or training-on-the-job.	"I have much more faith in the new generation to whom mathematics, calculus, quantitative methods and stochastic thinking comes much more naturally than to old people."	Interviewee 3
4	**Structural skills enablers**	18 (N)	People, processes and procedures	Inadequate guidelines, procedures, frameworks, metrics and tools employed in programme risk management, e.g. programme risk management systems, processes, procedures and tools.	"Because if you do not have the right resources, technology and skills, your organisation will fail."	Interviewee 6
		19 (N)	Specification of programme, programme management and programme risk management	The terms programme and programme management are used in different ways, leading to confusion about what the two terms mean.	"Stop confusing programmes with mega projects or stop viewing programmes as simply large or extended projects."	Interviewee 3
		20 (L)	Skills migration	The movement of skilled persons from one region to other geographic regions, e.g. programme risk management experts from other regions into southern Africa.	"I think we have lost people; people emigrated."	Interviewee 6
		21 (N)	Need for programme management in southern Africa	Creating awareness of the need for programme management in southern Africa. This may be done through, e.g. establishing more active programmes in the region and determining the need for governmental intervention. This is a macro-economic issue.	"I think it is a macro-economic policy that southern Africa needs to develop."; "Real major projects are so complex that you have to apply the programme approach."	Interviewee 1
		22 (L)	Government, academic and industry partnerships	The requirement for government, education and industry to work together in addressing the skills challenge.	"Collaboration between government, academia and industry."	Interviewee 1

*Note: The thematic codes from the literature are indicated by (L). New codes based on interviews are indicated by (N).

A southern African skills framework for programme risk management

Table 8 shows that the interview-based interventions specific to programme risk management mapped neatly onto the interventions derived from the skills-based literature. The interview data added programme risk-specific information to the general skills development information, covering all four literature-based thematic categories: training, specific skills, skills development target groups, and structural skills enablers. The thematic data analysis tables (Table 7 and Table 8) show that training and structural definition-based non-training interventions are required to address programme risk management skills challenges in southern Africa. This ability to map the interview information to the literature-based interventions boosts confidence in the trustworthiness and credibility of the findings.[99]

A notable finding was that interviewees expressed the need to understand and explore the meaning of the terms programme, programme management and programme risk management, rather than only focusing on discussing ways to address skills challenges. This uncertainty about the meaning of these terms was unexpected, as all the interviewees reported that they had more than 10 years' experience in programme management. However, this uncertainty reflects the currently undefined nature of the terms programme and programme management in practice.[100,101,102,103,104,105] Multiple meanings attributed to the terms programme and programme management lead to confusion about what each term means.[106,107,108,109,110]

This finding indicates the need for an in-depth investigation into issues related to programme management standardisation to allow for general agreement on what these terms mean in practice. Defining the terms programme, programme management and programme risk management was identified as a structural skill enabler in the present study, as shown in Table 9. We, therefore, recommend that organisations develop a skills specification framework for programme risk management that specifically includes organisation-specific definitions of these terms, which would allow programme management stakeholders to improve programme risk management in their organisations. Table 9 provides an outline of such a skills specification framework, which is derived from the main thematic categories described in Table 6 to Table 8, namely, structural skills enablers, technical skills and personal skills. The skills development target groups theme will inform approaches to, and the content of, planned interventions.

As outlined earlier, addressing challenges related to programme risk management skills requires training and non-training interventions. In addition to technical and personal skills that could be developed through training, this framework indicates the structural enablers required to facilitate the transfer of these skills. Therefore, this framework may serve as a valuable guide to addressing the challenges related to programme risk management skills.

Table 9: Outline of a programme risk management skills framework

Thematic category	Description	Characteristics (themes)
Structural skills enablers	Formal policies, legislation, regulations and systems that provide a framework-based environment to address skills challenges	• People, processes, procedures and tools • Specification of the concepts programme and programme management
Skills	Technical	• Requirement for generalists rather than specialists • Programme risk management execution • Programme benefits realisation • Value of risk management • Business understanding • Risk management capability • Risk aggregation • Interdependency and interface management • Programme risk management maturity level
Skills	Personal	• Communication skills • Strategic thinking • Knowledge-sharing culture

Conclusions, recommendations and policy implications

This study: ranked the challenges related to programme risk management in southern Africa; and explored ways to address these challenges to improve programme management practice in southern Africa by focusing on improving programme risk management skills in the region. The resulting literature-based and interview-based skills improvement interventions and the skills framework for programme risk management provide information that organisations could use to plan interventions to enhance their programme risk management activities in southern Africa. These findings are further expected to be of value to other regions, as the inadequate application of programme risk management is not only a southern African issue. The study contributes a practical view of programme risk management skills to the academic literature and a structure on which to base further research on the topic. This study provides theoretical and practical insight into a field that is important in terms of the African development agenda, as current knowledge is inadequate to support the implementation of large project-based programmes.

Addressing these challenges requires more than just training-based interventions. The framework presented in this study provides a structure on which organisations can fashion their approach to programme risk management. Hence, this enquiry provided a unique and practical picture of what is required to strengthen programme risk management, thereby allowing for more effective execution of programme risk management.

Declaration of interest

The authors declare that there was no conflict of interest.

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