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The Effectiveness of Supply Chain Management in Enhancing Project Management Outcomes

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Abstract

Supply Chain Management (SCM) plays a critical role in improving the efficiency and effectiveness of project management across various industries. This paper explores the effectiveness of SCM on project management outcomes in local municipalities, focusing on key performance indicators such as cost reduction, time management, risk mitigation, and quality control. Effective SCM integration within project management frameworks minimizes delays, optimizes resource allocation, and improves overall project performance. This paper also examines case studies where efficient SCM has led to successful project completion and identifies challenges such as supply chain disruptions, vendor management issues, and compliance risks. The study employed a quantitative research design, targeting all professionals engaged in project management and supply chain management within the Thembisile Hani Local Municipality. Data collection considered factors such as organizational size, geographic location, and historical project performance. A stratified random sampling technique was used to ensure proportional representation across various professional categories, resulting in a sample of 56 participants for statistical analysis. Descriptive statistics, including frequencies and percentages, were used to summarize the data, while inferential analysis was conducted using Spearman's correlation to examine significant relationships between the constructs measured. The findings suggest that companies that prioritize robust SCM practices achieve better project outcomes in terms of cost efficiency, quality assurance, and stakeholder satisfaction. Additionally, integrating SCM principles into project management enhances operational efficiency and resilience, making it a vital component for achieving strategic project goals. The research highlights how the SCM strategies, such as just-in-time (JIT) delivery, and risk mitigation contribute to enhanced project execution. By streamlining supply chain processes, organizations can mitigate uncertainties, minimize waste, and improve collaboration among stakeholders. Future research should explore advanced digital technologies and sustainable SCM practices to further optimize project success.

Keywords: supply chain management, project management, key performance indicators, resource allocation, quality.

1. Introduction

Infrastructure development projects in local municipalities face multiple challenges, ranging from insufficient funds, budget constraints, political interference, maladministration and poor governance (Durdyev and Hosseini 2020). Latent conditions impede the municipality's ability to deliver projects effectively. The reasons for delays in public sector project delivery, according to the assessment of Thusi and Selepe (2023), there are labor shortages, unqualified workers, owner delays in evaluating and approving design papers, and project owner delays in progress payments. Nee, Beatrice and Yong (2022) reviewed the construction time performance of Malaysian public projects. Rather than project characteristics, the study discovered that delays are caused by variables related to excusable delays. With the use of factor analysis, Mahajan and Narkhede (2024) investigated the reasons for delays in construction projects and discovered poor site management, scope revisions, late payments to suppliers and contractors, and inadequate project planning. Gurgun, Koc and Kunkcu (2024) found that poor site management, inadequate planning, and a lack of materials were hindrances that deterred attaining

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effective project management delivery. The study aims to explore the effectiveness of the integration between supply chain and project management. With a focus on how effective resource allocation, supplier management, procurement, and logistics all contribute to project success, this study explores the integration of SCM practices within project management frameworks, emphasizing how efficient procurement, logistics, supplier management, and resource allocation contribute to the success of projects. Key findings from the research reveal that Thaba Chweu Local Municipality (THLM) lacks effective supply chain management procedures. The study's findings indicate that late payments to contractors and suppliers are the most significant cause that instigates project delays.

1.1. Research Problem

Despite the growing recognition of supply chain management (SCM) as a strategic tool for improving project performance, numerous organizations continue to experience cost overruns, schedule delays, resource shortages, and quality defects in project delivery. While SCM practices such as supplier integration, inventory control, logistics coordination, and information sharing are believed to enhance project outcomes, there is limited empirical evidence on how effectively these practices are implemented within project environments. Additionally, the dynamic and complex nature of modern projects, particularly those involving multiple stakeholders and geographically dispersed resources, increases the risk of supply chain disruptions, which can significantly undermine project success. As a result, it remains unclear to what extent effective supply chain management contributes to improved project management outcomes, and what specific SCM components most strongly influence measures such as timeliness, cost efficiency, quality performance, and risk mitigation. This gap in knowledge creates a need to investigate the effectiveness of SCM in enhancing overall project management performance across various industries.

1.2. Hypothesis

H_0 (Null Hypothesis):
There is no significant relationship between supply chain management effectiveness and project management outcomes.
H_1 (Alternative Hypothesis):
There is a significant positive relationship between supply chain management effectiveness and project management outcomes.

1.3. Research Question

To what extent does the effectiveness of supply chain management enhance project management outcomes in project-based organizations?

2. Literature Review

2.1. Background

From a corporate point of view, successful Project management is described by achieving a continuous stream of project objectives with consideration of time, cost, and quality at a desired performance level, while deploying resources efficiently and effectively, providing value to stakeholders (Kerzner, 2025). In the field of project management, Chen (2023) asserts that the supply chain is essential to the project's successful completion. A project's cost, schedule, and quality results can all be greatly impacted by how well its supply chain works. In implementing service delivery across the nation, municipalities are essential. According to Widjaja (2024), infrastructure projects are known to stimulate economic growth and social well-being. The Local Government: Municipal System Act 32 of 2000 mandates municipalities with the implementation of service delivery and developmental projects to improve the quality of life of residents and contribute to economic development (Mbedzi 2023). Nevertheless, implementing such projects does not come without challenges. It is against this backdrop that measures are sought to streamline operations to deliver quality output.

2.2. Supply Chain Management Challenges in Local Municipalities

In South African local municipalities, supply chain management (SCM) faces many obstacles that affect governance, financial efficiency, and service delivery. Sibanda, Zindi and Maramura (2020) pointed out several challenges in local municipalities, which include insufficient planning and forecasting, bureaucratic and inefficient processes, fraud and corruption. Other constraints highlighted by Maramura and Ruwanika (2023) are suppliers' challenges, poor governance and budget restraints, the effect of which often leads to the inability to meet developmental goals and compromised service delivery. The administration and completion of projects in the public sector, especially in municipalities, are fraught with difficulties (Barbier and Tengeh 2022). Among other things, the legal framework, political limitations, transparency concerns, and particular risk variables all have an impact on the project environment (Khodadad-Saryazdi 2023). Communities frequently express dissatisfaction with municipal projects, noting that many initiatives either fail to reach completion or do not deliver the intended outcomes. In numerous cases, projects are either indefinitely delayed or prematurely abandoned (Faku and Lukman 2025; Mamokhere 2025). These challenges are further compounded by inadequate project-management capacity, a shortage of qualified project managers, and insufficient monitoring mechanisms (Mnembe 2022). Vandersmissen and George (2024) regard planning in public sector organisations such as municipalities as more difficult because politicians usually have short-term

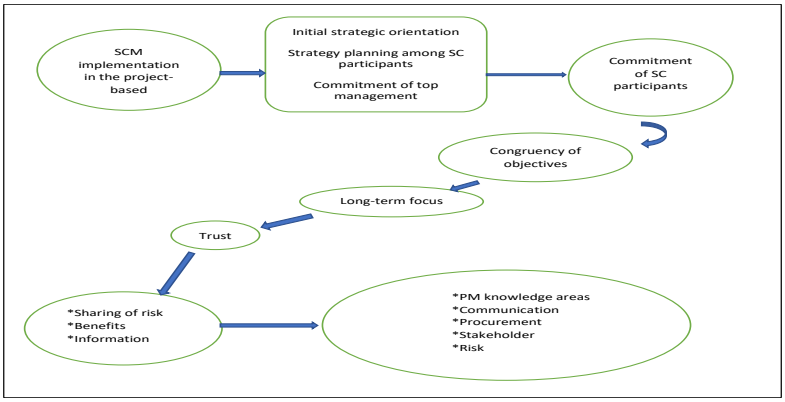
considerations, mainly because of the political cycle that is significantly shorter than the typical strategic planning cycle. In addition, politicians tend to reach for the low-hanging fruit to pacify constituents. This can result in the eluding of project governance as well as the polarization of policies that are in place.

2.3. Project Management Challenges in Local Municipalities

Project management in local municipalities in South Africa faces several unique challenges due to socio-economic, political, and operational factors. Notable key challenges encountered are a shortage of skilled personnel, political interference, corruption and mismanagement of funds, legislative and regulatory bottlenecks, and poor monitoring and evaluation (Munzhedzi and Phago 2020; Van der Waldt and Fourie 2022). One of the crippling challenges in project management is corruption and mismanagement. Mismanagement of funds, irregular procurement processes and tender fraud are rampant in several municipalities. Irregular expenditure in South African municipalities has been massive: at the end of the 2021/22 financial year, municipalities had a closing irregular-expenditure balance of c. R30.99 billion (Auditor-General of South Africa 2022). The misappropriation of funds leads to a negative impact on service delivery in that projects are abandoned or left incomplete. Budget constraints - Municipalities frequently encounter restricted budgets, which are further exacerbated by their dependence on national grants and irregular revenue collection. Legislative and regulatory bottlenecks - bureaucratic red tape and compliance with complex regulatory frameworks slow down project approvals and stall execution. These bottlenecks lead to cost escalations and delayed service delivery. Poor monitoring and evaluation - projects fail because of poor or inadequate monitoring systems that track and evaluate outcomes, leading to a lack of accountability and failure to identify areas warranting improvement.

2.4. Mitigating factors to enhance SCM effectiveness in Project Management

It is often known that supply chain management (SCM) and project management (PM) are closely related fields that, when properly coordinated, can greatly improve organizational effectiveness and produce superior results. Common features in both fields include planning, execution, monitoring, and controlling processes to achieve specific objectives (Tang 2021). Whereas SCM focuses on the flow of goods, information, and resources across a network to meet customer demand, PM is primarily concerned with the execution of temporary, goal-specific initiatives within defined constraints of time, cost, and scope. To maximize the contribution of the two disciplines, there should be careful planning and effective utilization of resources to optimize performance (Elisa, Nabella and Sari 2022). Both SCM and PM accentuate strategic planning and effective utilization of resources. The integration of SCM into PM enhances resource allocation, visibility and control. Consequently, linking supply chain management and project management is essential for operational synergy. It is widely accepted that this integration enhances efficiency, mitigates risks, supports innovation, and ultimately ensures successful project delivery in competitive and dynamic business environments. Strategic advantage can be achieved significantly by organizations that invest in bridging these two domains. The built industry, encompassing sectors like construction, architecture, engineering, and urban planning, is a cornerstone of economic development and societal progress. It involves the design, construction, and maintenance of infrastructure such as buildings, roads, bridges, and public spaces. The industry is highly dynamic, influenced by factors such as technological advancements, economic conditions, environmental sustainability, regulatory frameworks, and evolving customer needs. Diagram 1 below illustrates the Supply chain-project management value chain.



Source: Wei, Prybutok and Sauser (2021)

Diagram 1: Implementation of SCM and Contribution to the PM Body of Knowledge

The integration of SCM into PM enhances resource allocation, visibility and control. It is strongly suggested that there be an effective collaboration between supply chain managers and project managers to ensure that project schedules are synchronized with supply chain lead times. Concerning risk management, PM and SCM are both essential. Project timelines may be at risk due to supply chain disruptions such as supplier breakdowns or delays in procurement. Furthermore, innovation, particularly in areas such as just-in-time inventory, modular construction, and lean project management, is driven by the collaborative efforts between PM and SCM. Consequently, linking supply chain management and project management is essential for operational synergy. It is widely accepted that this integration enhances efficiency, mitigates risks, supports innovation, and ultimately ensures successful project delivery in competitive and dynamic business environments. Strategic advantage can be achieved significantly by organizations that invest in bridging these two domains. The built industry, encompassing sectors like construction, architecture, engineering, and urban planning, is a cornerstone of economic development and societal progress. It involves the design, construction, and maintenance of infrastructure such as buildings, roads, bridges, and public spaces. The industry is highly dynamic, influenced by factors such as technological advancements, economic conditions, environmental sustainability, regulatory frameworks, and evolving customer needs. The industry is shaped by various aspects such as:

***Advancement in technology*:** Innovations such as Building Information Modeling (BIM), prefabrication, and automation are revolutionizing design and construction processes, enhancing efficiency, precision, and collaboration across stakeholders.

***Green Building**:* The growing demand for sustainable and energy-efficient buildings has led to the adoption of eco-friendly materials and renewable energy systems. This shift is primarily driven by both environmental concerns and regulatory requirements aimed at reducing the carbon footprint of construction projects.

Economic factors: Global economic instability, fluctuations in interest rates, and material costs directly impact the built industry. Thriving economies do stimulate growth in construction projects, while downturns often lead to reduced demand and tighter project budgets.

3. Research Methodology

This paper adopted a quantitative method approach. This study adopts a positivist research philosophy, which is grounded in the belief that reality is objective, measurable, and independent of human perception. Positivism assumes that social phenomena, such as supply chain management practices and project management outcomes, can be observed, quantified, and analysed using statistical techniques (Park, Konge & Artino, 2020). In the context of this study, the positivist stance enables the researcher to systematically examine the relationship between supply chain management effectiveness and project management performance using empirical data rather than subjective interpretations. Under this philosophy, the study relies on structured, numerical data collected from project-based organisations to test predetermined hypotheses about how specific supply chain management elements, such as supplier integration, logistics efficiency, information sharing, and inventory control, influence project outcomes, including cost, time, quality, and risk performance. The researcher maintains objectivity throughout the process, using standardized instruments such as questionnaires to minimise bias and ensure consistency across respondents.

The quantitative approach also supports the use of statistical analysis, such as correlation and regression techniques, to identify the strength and significance of relationships between variables. By adopting a positivist quantitative philosophy, the study aims to generate generalizable findings that can be applied across different project environments. This philosophical stance, therefore, ensures that the research produces reliable, replicable, and evidence-based insights into the effectiveness of supply chain management in enhancing project management outcomes.

3.1. Population and Sample

The population of interest comprises all professionals within the Thembisile Hani Local Municipality involved in project management and supply chain management. This includes, but is not limited to, project managers, procurement officers, finance officials, senior management, and other relevant stakeholders. Primary data was collected from a sample of 56 participants within the district.

3.2. Sample strategy

The paper adopted a stratified random sampling technique within each selected municipality to ensure proportional representation of different professional categories. A sufficient sample size was determined using a power analysis to ensure adequate statistical power for detecting significant relationships. This ensured the inclusion of individuals with diverse perspectives and in-depth knowledge. The sample size was guided by data saturation until no new significant information emerged.

3.3. Data Collection Instruments

For quantitative methodology, a structured questionnaire was developed based on a thorough

review of the literature on SCM and project management effectiveness. The questionnaire included key elements such as demographic information, Project performance, SCM implementation and overall project success. A (1-5) Likert scale was utilized to measure outcomes. The questionnaire was pilot tested with a small group of professionals to ensure clarity, validity, and ease of completion before final distribution. The questionnaire was administered online using Google Forms to facilitate data collection and analysis. The interview guide included open-ended questions designed to explore the following:

I. Perceptions of the role of SCM in project management;
II. Challenges and barriers to effective SCM implementation in the municipality;
III. Examples of successful and unsuccessful projects and the role of SCM in their outcomes;
IV. Suggestions for improving SCM practices to enhance project management outcomes, and
V. Impact of SCM on specific project aspects such as time, cost, quality, and stakeholder satisfaction.

With the help of current technology, interviews were conducted via video conferencing, considering logistical considerations. All interviews were audio-recorded with the participant's prior consent and transcribed verbatim for analysis.

3.4. Data Analysis Techniques

Quantitative data were examined using the Statistical Package for the Social Sciences (SPSS) version 30.0. The analysis in this study primarily employed both descriptive and inferential statistics. Demographic data were summarized using frequencies and percentages. Reliability of the items within each construct was assessed using Cronbach's alpha coefficient. Spearman's correlation analysis was then conducted to examine significant relationships between the measured constructs.

4. Findings and Discussion

Results from the study reveal that THLM lacks effective supply chain management procedures.

Key findings from the research reveal that SCM significantly impacts time, project cost, schedule, and quality.

The study's findings indicated that late payments to contractors and suppliers were the most significant cause of instigating project delays. There is a need for effective collaboration between SCM and PM teams for success. The main reason for project delivery delays, according to Shivambu and Thwala (2019), is suppliers' late payments. These results are consistent with those of a study on Kenyan local administrations (Barsemoi, Mwangagi and Asienyo 2014).

In the context of South African municipalities, a lack of sufficient supply chain skills and capabilities has also been identified as a key factor undermining service delivery (Ambe 2016). Together, these studies underscore the critical role of effective supply chain management and timely procurement practices in ensuring successful project implementation and public service delivery across different African contexts. Another significant discovery is that ineffective execution of some management tasks and responsibilities causes project completion delays, which impacts the municipality's ability to provide services. Findings reveal a greater need for technological improvements in the current systems to streamline supply chain processes and improve project success. The public sector in its current form faces a unique challenge in implementing SCM and PM due to regulatory constraints and bureaucratic processes. Results point to the municipality's capacity to complete projects on schedule due to critical factors, such as clear scope definition, effective communication, employee training, investing in emerging technology, allocating sufficient resources, and a work plan.

4.1. Descriptive Statistics of the Respondents

Table 1 displays the descriptive statistics of the study participants. Over half (66.1%) of the participants were women, while 33.9% were men. Many participants were general workers (35.7%), followed by supervisors (16.1%), artisans (17.9%), technicians (16.1%), and others (14.2%). Regarding educational qualifications, 48.2% of participants held a certificate as their highest level of education, 32.1% had a diploma, 16.1% had a degree, and just 3.6% had a master's degree. Additionally, the study found that 26.8% of participants had less than six years of work experience, 33.9% had 6 to 10 years, and 39.3% had 11 to 15 years of experience.

Table 1: Descriptive statistics of the respondents (n = 56)

Variable	Categories	Frequency	Percentage (%)
Gender	Male	19	33.9%
	Female	37	66.1%
Total		**56**	**100**
Job title	General workers	20	35.7%
	Supervisors	9	16.1%
	Artisans	10	17.9%
	Technicians	9	16.1%
	Other	8	14.2 %
Total		**56**	**100**
Academic qualification	Certificate	27	48.2%
	Diploma	18	32.1%
	Degree	9	16.1%
	Masters	2	3.6%
	PhD	-	-
Total		**56**	**100**
Length of service (years)	1 - 5	15	26.8%
	6 - 10	19	33.9%
	11 - 15	22	39.3%
	16+	-	-
Total		**56**	**100**

Source: Author's construction

4.2. Descriptive Statistics about the Supply Chain Management Procurement Strategies

4.2.1. Deliberate practices that delay project delivery in THLM

The degree to which respondents agree or disagree with the idea that THLM uses strategies to implement the MFMA Act of 2003 despite intentional activities that cause the municipality's project delivery to be delayed is shown in Table 2. A Likert scale with a range of 1 (strongly disagree) to 5 (strongly agree) and a mean score (MS) between 1.00 and 5.00 was used to measure the responses. Table 2 shows that respondents agreed that deliberate practices such as late payment of contractors and suppliers contribute to project delivery delays in THLM (MS > 3.40 to ≤ 4.20). Additionally, the respondents strongly disagree (MS > 1.80 to ≤ 2.60) that workers are competent in project delivery and possess sufficient supply chain management skills. 80% of the variables ranked 1 to 4 have an MS ranging > 1.80 ≤ 3.40, which indicates that the respondents strongly disagree with the following, namely that THLM complies with the MFMA of 2003 in implementing projects, THLM has effective supply chain management practices, payments to suppliers are made within 30 days, and employees have adequate supply chain management skills and competences.

4.2.2. Impact of late payments on project delivery

The MS for all the variables, specifically 100%, fall within the range (MS > 3.40 to 4.20), as can be shown in Table 3. This indicates that every respondent concurs that late payments have the following effects on project completion: they cause workers to go on strike (MS =

Table 2: Deliberate practices that delay project delivery in THLM

Contributor	Response (%) Strongly disagree……Strongly agree					MS	Rank
	1	**2**	**3**	**4**	**5**		
Late payments to contractors and suppliers contribute to project delays	0.0	12.5	0.0	44.6	42.9	3.95	1
THLM complies with the MFMA of 2003 in implementing projects	8.9	16.1	23.2	23.2	28.6	3.38	2
THLM has an effective supply chain management practices	1.8	35.7	28.6	32.1	1.8	2.98	3
Payments to suppliers are made within 30 days	1.8	39.3	28.6	28.6	1.8	2.92	4
Employees have an adequate supply chain management skills and competencies	35.7	33.9	17.9	10.7	1.8	2.28	5

Source: Author's construction

Table 3: Impact of late payments on project delivery

Outcome	Response (%) Strongly disagree……. Strongly agree					MS	Rank
	1	**2**	**3**	**4**	**5**		
Workers strike on project site	0.0	0.0	14.3	39.3	46.4	4.07	1
The construction programme is prolonged	0.0	0.0	16.7	42.9	41.1	4.01	2
Skilled employees leave the project	5.4	3.6	12.5	46.4	32.1	3.78	3
Projects experience cost and time overruns	3.6	3.6	14.3	44.6	33.9	3.82	4
Contractor runs out of working capital (cash flow problems)	0.0	12.5	23.2	32.1	32.1	3.68	5

Source: Author's construction

4.07), extend the construction schedule (MS = 4.01), and cause expert personnel to depart the Project (MS = 3.78), leads to time and expense overruns (MS = 3.82) and causes the contractor to run out of working capital (causing cash flow issues) (MS = 3.68).

4.2.3. Measures for improving the performance of the supply chain management unit

Table 4 shows that 75% of the variables ranked 1–3 on measures for enhancing supply chain management unit performance to improve project delivery in THLM had MS values in the range > 3.40 ≤ 4.20. This suggests that most respondents believe that the following actions can improve THLM project delivery: adding more staff members (MS = 3.77), training the current staff members (MS = 3.88), and implementing the newest and most effective supply chain management procurement system (MS = 3.58). In contrast, 25% of the variables (ranked 4) have an MS that falls between >2.60 and ≤ 3.40. This indicates that the respondents were either indifferent to or disagreed with the concept that project delivery in THLM can be improved by using current employees in conjunction with improved planning and communication capabilities.

4.2.4. Management practices that delay project delivery in THLM.

The respondents' level of agreement or disagreement with management approaches that could defer project delivery in THLM is shown in Table 5. The responses were scored using a mean score (MS) that ranged from 1.00 to 5.00 and a Likert scale that went from 1

Table 4: Impact of late payments on project delivery

Measures/action	Response (%) Strongly disagree…….Strongly agree					MS	Rank
	1	**2**	**3**	**4**	**5**		
Propose training of the existing staff members	0.0	7.1	16.1	37.5	39.3	3.88	1
Increase the number of staff members	0.0	10.7	17.9	37.5	33.9	3.77	2
Introducing the latest most and efficient supply chain management procurement system	0.0	10.7	30.4	35.7	23.2	3.58	3
Utilise the existing staff members but strengthen proper planning and communication	12.5	30.4	17.9	35.7	3.6	2.91	4

Source: Author's construction

Table 5: Management practices that delay project delivery in THLM

Contributor	Response (%) Strongly disagree……Strongly agree					MS	Rank
	1	**2**	**3**	**4**	**5**		
Late approvals contribute to project delays	0.0	3.6	14.3	44.6	37.5	3.94	1
Late payments are made to contractors and suppliers	1.8	1.8	17.9	41.1	37.5	3.90	2
Senior management is always available when required	21.4	25.0	32.1	12.5	8.9	2.71	3
Changes in scope are approved within a reasonable time frame	33.9	30.4	21.4	7.1	7.1	2.39	4
Projects are approved within a reasonable time frame	39.3	39.3	19.6	1.8	0.0	2.08	5

Source: Author's construction

(strongly disagree) to 5 (strongly agree). Forty percent of the variables (ranked 1 and 2) have an MS between > 3.40 and ≤ 4.20, according to Table 5. According to this, the respondents concur that the following management practices cause project delivery delays at THLM: late approvals (MS = 3.94) and late payments to suppliers and contractors (MS = 3.90). The respondents also expressed either neutral disagreement (MS = 2.71) or disagreement that senior management is always available when needed, which causes THLM project delivery to be delayed. In addition, 40 percent of the variables (ranked 4 and 5) have MS values between > 1.80 and ≤ 2.60. This suggests that respondents disagree that senior management follows the following procedures to enhance project delivery: projects are approved within suitable time frames (MS = 2.08) and revisions to the project scope are approved within reasonable time limits (MS = 2.39).

4.2.5. Reliability Statistics

To assess the reliability of the items, the researchers employed Cronbach's alpha coefficient (α). Reliability refers to the internal consistency of the construct(s) and their stability (Nunnally & Bernstein, 1994). The Cronbach's alpha value ranges from 0 to 1, and according to Bagozzi and Yi (1998), an α value greater than 0.6 indicates data consistency and reliability for analysis. In this study, the value of α was greater than 0.7 in each section, indicating that all the items agreed with each other (Table 6).

4.2.6. Spearman correlation analysis

The Spearman correlation analysis revealed significant positive relationships among the factors contributing to project delivery delays in the Thembisile Hani Local Municipality (THLM). There is a strong positive correlation (r = 0.65, p-value = 0.001) between deliberate practices that delay project delivery and management practices that contribute to delays, indicating that inefficient management often coincides with intentional behaviors that impede project progress. A moderate positive correlation (r = 0.50, p-value = 0.012) was observed between deliberate delaying practices and the impact of late payments, suggesting that projects affected by deliberate delays are also more likely to experience financial-related disruptions. Furthermore, management practices that delay project delivery are strongly associated with the impact of late payments (r = 0.70, p-value < 0.001), demonstrating that poor management exacerbates the negative effects of financial delays on project completion. Overall, these results highlight that project delays in THLM are multifaceted and interrelated, with management inefficiencies, deliberate behaviors, and late payments collectively contributing to challenges in timely project delivery.

5. Discussion

This section discusses the findings from the information gathered from respondents regarding the influence of SCM on project management results in Thembisile Hani Local Municipality. Assuring the timely procurement and receipt of all project inputs is the goal of an effective and efficient supply chain management, which helps to prevent delays in project completion. Nonetheless, the key data results mostly show that THLM lacks effective supply chain management procedures. Many respondents said that the MFMA Act of 2003 is not being implemented correctly, according to the results of the question that aimed to determine the extent to which THLM employs strategies.

The study's findings indicated that late payments to contractors and suppliers were the most significant cause of instigating project delays. Project execution in THLM is impacted by late payments in numerous ways. These include the depletion of working capital by contractors, strikes by workers on building sites, an extended construction schedule, a high rate of skilled personnel turnover, and time and cost overruns. Skills in supply chain management and adherence to the MFMA were the least ranked variables in this study. The top reason for project delivery delays, according to Shivambu and Thwala's (2019) study, is suppliers' late payments. These results are consistent with those of a study on Kenyan local administrations (Barsemoi, Mwangagi and Asienyo 2014). The authors discovered that the least common reason for delays in supply chain management was a lack of capabilities. The authors discovered that the least common reason for delays in supply chain management was a lack of skills.

Table 6: Spearman correlation analysis

Analysis	Spearman's rho correction (r)	p-value
Deliberate practices that delay project delivery in THLM - Management practices that delay project delivery in THLM	0.65	0.001
Deliberate practices that delay project delivery in THLM - Impact of late payments on project delivery	0.50	0.012
Management practices that delay project delivery in THLM - Impact of late payments on project delivery	0.70	<0.001

Source: Author's construction

The findings also show that many respondents did not agree with the claim that workers possess sufficient supply chain management competencies, knowledge, and abilities. The poor performance of procurement departments can largely be attributed to incompetent staff. The study of Hoque (2022) establishes that one of the main issues affecting service delivery in South African municipalities is the lack of necessary supply chain skills and capabilities. Another significant discovery is that ineffective execution of some management tasks and responsibilities causes project completion delays, which impacts the municipality's ability to provide services. The municipality's senior managers' availability is one such issue. Project delays would result from the lack of timely approval of documentation, including payment certificates, way leaves, overtime drawings, and variation orders. Apart from the absence of management, one of the management issues that contributed to project delivery delays in THLM was the client's delayed document approval. Most respondents stated that delays are mostly caused by the client's delayed approval of papers. Numerous researchers agree with these conclusions. The time it takes to get a new customer or consultant approval could cause the building project to be delayed.

The responders also pointed out a crucial finding that indicates organisational practices are a significant contributor to project delivery delays. According to the respondents, the municipality's capacity to complete projects on schedule can be influenced by critical factors, such as clear scope definition, effective communication, employee training, investing in emerging technology, allocating sufficient resources, and properly planning work activities. The respondents felt that the municipality's feedback system was insufficient. Therefore, poor organisational practices could defer the completion of a project.

6. Conclusion and further research

Evidence from this study has revealed that several obstacles cause the THLM organization project delivery to be delayed. Problems with supply chain and procurement management are one example of such a dilemma. The analysis discovered that certain organisational practices are to blame for the project delivery delays. When employees lack the necessary skills or knowledge of the supply chain and other organisational processes, management and project implementation become inefficient, which delays project completion. It was also discovered that late supplier payments impeded project progress and resulted in time and expense overruns. According to the findings, the municipality typically takes a long time to approve projects, process project documentation, and process payments, which causes delays in project delivery. Political meddling or management's inability to approve documents are the usual causes of delays. Politicians are sometimes unwilling to accept the proposals of planners, as such proposals will not further their political interests. As a result, projects take a long time to complete due to permission delays. During the implementation phase, projects typically undergo scope modifications, which cause delays in project completion. The community may occasionally cause changes in scope, which can cause worries and necessitate some project additions. Additionally, it takes a long time for scope adjustments to be accepted, and during that time, project activity would have been put on hold to accommodate the changes. As a result, scope adjustments lead projects to take longer to finish. Organisational procedures were found to negatively affect the efficient completion of projects. Planning, communication, staff training, and hiring and choosing staff are a few of these. Ineffective implementation of these organisational procedures has a detrimental impact on project management. Consequently, inadequate planning, poor communication, a lack of training, and the hiring of inexperienced or under-qualified staff are frequently the reasons behind project completion delays.

Considering the findings of the study, the following recommendations and possible directions for further research were developed. Enhancing employees' abilities is essential for THLM management to ensure that they have the knowledge and abilities needed to carry out infrastructure projects successfully. Since the organisation is a system that interacts to create desired outcomes, the project management team should receive training on effective project management, and the remaining staff members should be adequately knowledgeable in their respective roles. Additionally, the municipality should encourage and foster an organisational culture of learning in which staff members participate in ongoing education through information sharing and training. To guarantee that every project has a precisely defined scope, it is advised that the project design stage be carried out completely. According to the study's findings, modifications to the project's scope cause delays in its completion since the contractor must halt work while awaiting clearance of the revisions. Increased project expenses could also result from scope adjustments. Therefore, before execution, the project design team should thoroughly investigate the project's requirements. To prevent scope modifications during project implementation, meaningful consultations should be held with both project sponsors and contractors.

Community consultations are also essential. Insufficient stakeholder participation can result in community interference during project execution and demands for scope expansions, both of which can severely affect the project's development. Thus, it is essential to make sure that all scope-related concerns are taken care of during the project design phase to prevent scope modifications later. Enhancing

communication and project planning is essential for THLM. Effective project planning guarantees the development of the right scope, timeline, and critical routes, all of which contribute to the project's seamless operation. To prevent poor budgeting, which can halt a project's development when resources run out, planning should also include a detailed study of the resources needed to complete the project. All stakeholders, including community representatives, should be involved in the planning process to ensure that all project requirements are met. For activities to be coordinated, there should be good communication throughout the project's lifecycle in addition to appropriate planning. To guarantee the efficient exchange of information, the municipality should set up efficient communication systems. This includes creating a feedback mechanism that will notify stakeholders about the project's progress and potential obstacles during implementation.

Enhancing the organization's supply chain and procurement management procedures is also recommended for management since they are essential to the accomplishment of project delivery. Supply chain management requires qualified personnel, allocating sufficient resources to the function, and automating all processes to guarantee effectiveness. Staff members involved in supply chain management should receive training on the MFMA 2003's provisions. Putting monitoring and accountability procedures into place to guarantee that transactions are completed quickly will help prevent delays in paying contractors and other suppliers. To gain a better understanding of municipal project management and the general issues that impact project delivery in the organisations, more research on the same subject can be done, concentrating on several municipalities in the province.

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