A Disaggregated Analysis of Project Management Performance and Project Success in South Africa

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ABSTRACT

This study investigates the disaggregated effects of project management performance on project success in South Africa. Using a quantitative causal research design, the study collected primary data from 365 project managers registered with Project Management South Africa (PMSA) and analysed the responses using inferential statistical techniques. Correlation and regression results show that leadership, staff, policies and strategies, partnerships and resources, lifecycle processes, and KPIs each have significant positive effects on project success, indicating that project management performance meaningfully shapes project outcomes. By presenting empirical evidence from South Africa, a context rarely examined in the project management literature, this study contributes to the global evidence base while delivering practical insights for organisational development and change. The findings show that leadership capacity, staff engagement, strategic alignment, stakeholder collaboration, lifecycle-based processes, and KPI-driven evaluation can be leveraged to improve project success and support sustainable organisational transformation.

KEYWORDS: *Project management leadership; project management staff; project management policies and strategies; project management partnerships; project lifecycle management processes.*

JEL CLASSIFICATION: *M10; M12; M14.*

1. INTRODUCTION

Historically, the success of a project relates to the achievement of its objectives on time and on budget (Flyvbjerg, 2014). In many organisations, this evaluation criteria has remained the most popular (Kabeyi, 2019). However, in the case of a development project (that is, any project conducted for the aim of development), success entails providing additional benefits and fulfilling the expectations of beneficiaries, stakeholders, donors, and funding agencies, in addition to reaching the schedule and budget targets (Albert et al., 2017). As such, there are substantial advantages to completing a project successfully, including attracting investors and obtaining more clients (Davis, 2017; Ul Musawir et al., 2017). However, quantifying these measures of success is more challenging, and some of them can only be assessed years after a project is completed (William, 2019). Noteworthy is that the four-dimensional project success framework, introduced by Shenhar (2001), is regularly cited in project management studies that assess project success (Mir & Pinnington 2014; Pinto et al., 2022).

In order to assess the project development process and the performance of the completed project from the users' perspective, the evaluation of project management performance is crucial (Cicmil et al., 2009). By definition, project management performance is a collection of rules or

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guiding principles that serve as guidelines for regulating project success and are necessary to properly assess project success (Bayer, 2022). Thus, effective project management performance assessment tools are essential for ensuring the success of completed projects (Jitpaiboon et al., 2019). According to Demirkesen and Ozorhon (2017), building more strategic approaches to projects can be aided by measuring the performance of project management. Moreover, project managers can also be aware of the project staff and provide them with recognition for their efforts through project management performance. This encourages the project staff to be more engaged in the project, which leads to project success (Ali et al., 2020). The Project Management Performance Assessment (PMPA) model, proposed by Bryde (2003), outlines six factors for assessing project management performance. These include project management leadership, project management staff, project management policies and strategies, project management partnership and resources, project lifecycle management processes, and project management Key Performance Indicators (KPIs). According to Kerzner (2022:1-20) and Unegbu et al. (2022), there is a vital link between these project management performance factors and project success.

Project management leadership contributes to project success by providing appropriate direction and guidance for completing projects efficiently and effectively (Arfanaldy, 2025). On the other hand, project staff can work hard by contributing a variety of strategies to help the project succeed (Browne et al., 2016). In terms of project management partnerships and resources, it is important to incorporate stakeholders early in the process and induce partnership synergy, in which dynamic capabilities and implementation mechanisms are employed as resources to accomplish project success (Odabashian et al., 2019). Thus, more strategies can be established by acknowledging partnerships, implementing policies, and using resources effectively and efficiently, subsequently, contributing to the project's success (Bryson, 2018). Having a formal management system in place in an organisation for establishing, administering and updating KPIs, has a direct impact on team performance and project efficiency (Aftab et al., 2016). Moreover, it is a crucial lesson for business and project managers to invest in project lifecycle management processes and systems, so that these processes and systems can assist their organisations with planning for the future and long-term success (Mir & Pinnington, 2014). With this background, it is evident that project management performance and project success are independent, yet related concepts, and that a positive relationship between them is desired (Doloi, 2012). As a result, the objective of this study is to investigate the effect of project management performance on the success of projects in South Africa which remain unstudied.

The rationale for studying project management performance stems from one crucial fact: there is no single best approach to managing projects throughout the project lifecycle, and inadequate assessment of project management performance can have the same negative impact on project success as non-assessment (Reddy et al., 2024). The inadequate assessment of project management performance could lead to financial consequences that go far beyond the escalation of expenses on costs, which is a common cause of project failure. Aside from the immediate cost of having to pay for the failure or delays of projects, there is also a microeconomic loss since the delays limit the ability to complete other projects, resulting in income loss and an opportunity cost that cannot be recovered (Alsharef et al., 2021). Furthermore, as supported by Mir and Pinnington (2014), this research was motivated by the belief that, while many project management standards, tools and procedures exist in theory, the issue of how many of these are implemented in practice, as well as their implications on project results, remains unsolved.

This study has a significant contribution to existing literature for several reasons. Firstly, this study builds on the results of Mir and Pinnington (2014) who investigated the relationship between project management performance and project success in the United Arab Emirates

(UAE). In this context, by investigating the effect of project management on the success of South African projects, the results of the current study sheds light on whether the findings of Mir and Pinnington (2014) can be replicated across different geographical locations. Furthermore, research on the effect of project management performance on project success remains limited, especially in South Africa, where no study studies exist, to the author's knowledge. In addition, the disaggregated approach used to measure project management performance provides insight into which project management factors significantly influence the success of projects. Moreover, there is an increasing demand for project management skills in South Africa and the project management market is expected to soar to R1.1. billion by 2060 (Mboweni, 2021). Therefore, the results of this study are beneficial to South African organisations hiring project managers by demonstrating which project management skills are crucial and, thus required by their project managers.

2. LITERATURE REVIEW

2.1 Theoretical framework

The Iron Triangle was created as a framework to help project managers evaluate and balance the competing demands of cost, time and quality within their projects (Frederiksen et al., 2024). Time is based on whether the project was completed within the time estimated during the planning phase; cost focuses on whether the project was completed within the allocated budget; and quality refers to the value of the result at the end of the project (Kerzner, 2022). The Iron Triangle is a useful tool for project managers to use to determine the priorities and motivations of the various stakeholders, as well as how well the project is understood (Morris & Sember, 2008).

On the other hand, the Project Success Assessment Model, proposed by Shenhar (2001), suggests a comprehensive four-dimensional framework for assessing project success. The first dimension of the Shenhar (2001) model is project efficiency, which entails sticking to the project's budget, schedule and scope. This is the benchmark for project success because it demonstrates that no resources were misused during the project (Iyer & Banerjee, 2016). The impact on the customer is the second dimension – in particular, this dimension looks at whether customers are satisfied, whether the project was able to solve their problems, and whether the functional and technical specifications were met (Ika & Pinto, 2022). Furthermore, business success is another dimension of project success, which encourages the project to be commercially successful and gain a substantial market share (Cooper, 2019). The final dimension is preparing for the future, which implies that the project should establish new markets and develop new technology (Ciric Lalic et al., 2022). Due to its multi-dimensional coverage, previous studies have suggested applying the four-dimensional framework to assess project success (Shafi et al., 2021; Othman & Saad et al., 2024).

With regard to project management performance, the Project Management Performance Assessment (PMPA) model, which was introduced by Bryde (2003), provides a set of comparative characteristics that can be used to evaluate project management performance. The model suggests six criteria for evaluating project management performance: project management leadership, project management staff, project management policy and strategy, project management partnerships and resources, project lifecycle management processes, and project management KPIs. As a result, the PMPA model has proven to be useful in determining the relationships between operational factors used in project performance (Jong et al., 2019). According to Davis (2017), the PMPA model has a substantial influence on project management performance, with leadership having the greatest impact on project outcomes. The factors in the PMPA model are discussed in greater detail in Section 2.2.

In addition, there are several theories which can be used to link project management performance factors and project success including the Resource Advantage Theory (RAT), the Resource Dependency Theory (RDT), and the Theory of Constraints (TOC). The notion of RAT asserts that a project's completion is influenced by resource scarcity. On this basis, it can be deduced that project management partnerships and resources, as one of the project management performance factors, are likely to contribute positively to the success of the project (Kerzner, 2022). Moreover, the RDT may be a useful tool for exploring the nature and methods of competition and collaboration between projects in the context of a scarcity environment, given the potential importance of key resources as a source of competitive advantage for projects within an intra-organisational and inter-organisational environment (Cullen & Parker, 2015). This theory emphasises the significance of forming strong relationships and partnerships with various stakeholders as a project management performance aspect that contributes positively to project success. Further, the TOC can be used to assess project barriers and constraints and come up with a breakthrough solution. The TOC's application to project management is thus critical because managing key constraints can reduce delays, increasing the possibility of completing the project on schedule, on budget, and according to scope and quality standards (Parker et al., 2015).

2.2 Development of hypotheses

2.2.1 Project management leadership

Project management leadership is the process by which a project manager can direct, guide, and influence the project team's behaviour and work to achieve the project's goals (Kerzner, 2022). Leaders in projects ensure that the project management system facilitates the creation of open, two-way collaborations with customers and suppliers, as well as the development of a collaborative culture (Chakkol et al., 2018). Leaders play a key role in fostering an effective environment for the project team and its stakeholders. Since leaders tend to impose more control, proactive leaders, who can foresee issues and shape project direction, can achieve greater project success (Mir & Pinnington, 2014). This leads to the formulation of Hypothesis 1 below.

Hypothesis 1: There exists a positive relationship between project management leadership and project success.

2.2.2 Project management staff

Project management staff are an essential aspect of the project because project management operations, such as communications, scheduling and risk management, are handled by project management staff, that is, the members of the project team (Herath & Chong, 2021). Project success is ultimately dependent on the staff's availability and willingness to work on the project (Serrador & Pinto, 2015). Therefore, to carry out the project successfully and efficiently, it is frequently crucial for project managers to promote teamwork and team building among project staff (Aga, 2016). This leads to the formulation of the following hypothesis.

Hypothesis 2: There exists a positive relationship between project management staff and project success.

2.2.3 Project management policy and strategy

The adoption of project management growth in a controlled and systematic manner across an organisation is highlighted by project management policies and strategies, which ensures a relationship between the strategic, organisational, and tactical project levels (Albert et al., 2017). Thus, the project's performance is improved by increasing the number of innovative strategies and policies. It is crucial to have effective project management methodologies that are based on guidelines and procedures if project management goals are to be realized and to

be successful (Takagi & Varajão, 2021). Therefore, this leads to the formulation of Hypothesis 3:

Hypothesis 3: There exists a positive relationship between project management policies and strategies and project success.

2.2.4 Project management partnership and resources

Project management partnerships and resources connect the primary project participants into an alliance, fostering open communication and cooperative project performance, while also ensuring that the necessary resources are on hand to complete the project (Köhler et al., 2022). The strong partnership and availability of resources play an important role in ensuring that the project is a success. Furthermore, having sufficient resources increases project quality (Fewings & Henjewele, 2019). Accordingly, this leads to the formulation of the following hypothesis:

Hypothesis 4: There exists a positive relationship between project management partnership and resources and project success.

2.2.5 Project lifecycle management processes

Project lifecycle management processes entail implementing the processes required to manage the whole project's lifecycle, hence, assisting project management performance in meeting the project's objectives with minimum or no crises (Gachie, 2017). A well-monitored project lifecycle management process ensures that all the activities involved in the project will be achieved effectively, subsequently, leading to project success (Kamau & Mohamed, 2015). All aspects of the project lifecycle should, thus, be addressed by an effective project lifecycle management process (Kerzner, 2022). This leads to the formulation of Hypothesis 5:

Hypothesis 5: There exists a positive relationship between project lifecycle management processes and project success.

2.2.6 Project management KPIs

In project management, KPIs are measurement tools that show how well project teams meet specified targets (Cruz Villazón et al., 2020). The project management KPIs are often agreed upon at the project's early stages. They consider the project's primary role in the organisation and the policies that place project responsibilities in administrative divisions (Kerzner, 2022). KPIs are used to track project performance, both independently and inside the organisation, and they often indicate a project's unique output (Kerzner, 2022). KPIs set standards and goals by including the essential performance goals for every area of a project. Furthermore, KPIs are quantitative metrics that may be shared and analysed at any moment throughout the organisational divisions (Domínguez et al., 2019). This leads to the formulation of the following hypothesis:

Hypothesis 6: There exists a positive relationship between project management KPIs and project success.

3. DATA AND METHODOLOGY

3.1 Research design

A research design represents the basic outline of how the research will achieve its objectives and test its hypotheses. There are three common types of research designs, namely: quantitative, qualitative, and mixed design. Qualitative research employs observation or case studies to obtain a narrative, descriptive account of a setting or practice. On the other hand, quantitative research uses statistical or numerical data to systematically investigate various issues. Mixed methods research combines both quantitative and qualitative data. As such, this study uses a quantitative research design with the goal of assessing people's ideas and knowledge, as well

as providing answers to queries such as how many, how much, and how often. In other words, the quantitative research design is employed with a causal-comparative research type to focus on the cause-and-effect relationships.

3.2 Questionnaire design

The questionnaire method was used to collect primary data which is more reliable than secondary data. The decision to use a questionnaire as a data collection method was based on the following benefits: information can be collected from a large sample, confidentiality is maintained, time is saved because questions are presented in an online format, and there is no opportunity for interviewer bias (Prendergast & O'Meara, 2022). The online questionnaire was designed and distributed to the project managers through the Project Management South Africa (PMSA) organisation.

The questionnaire was structured in three sections. Section A was based on the descriptive and demographic details of the project managers and their organisations. This section was adapted from studies conducted by Ngarira (2019), and Mahlo and Spencer (2022). Section B focused on project management performance and asked the respondents to agree or disagree with the given statements within the context of the project management practices in their organisations. This section was adapted from the studies by Mir and Pinnington (2014), and Todorović et al. (2015). Section C, which was based on project success, was adapted from Mir and Pinnington (2014), Albert et al. (2017), and Ciric Lalic (2022). A 5-point Likert scale was used for Sections B and C, with 5 being graded strongly agree, 4 being graded agree, 3 being graded neutral, 2 being graded disagree, and 1 being graded strongly disagree.

3.3 Internal and external validity

To ensure the validity of the study, the researcher conducted a pilot study on the instruments for data collection before beginning the actual data collection process. Prior to distributing the finished questionnaire to a larger audience, corrections and revisions must be done to ensure that respondents properly grasp the questions (Ikart, 2019.). Five project managers participated in a pilot study to pre-test the research questionnaire. Following the pre-test, the questionnaire was changed in accordance with the project managers' recommendations. The pre-testing aided the researcher in clarifying the items that the respondents found confusing. Thereafter, the target sample was given a questionnaire that was free from mistakes and ambiguity.

3.4 Study sample

For this study, the population of interest consisted of project managers in South Africa. To reduce the number of participants in the study, the sample targeted project managers registered with the Project Management South Africa (PMSA) organisation. Thus, a non-probability, convenient sampling technique was used. Convenient sampling makes it simple to obtain information from participants and it is less costly and requires less time to collect data during the study process. The target of this study was 463 project managers based on the average sample sizes of similar studies; however, the researcher only received 356 responses from participants, resulting in a response rate of 77%, which is still considered reliable.

3.5 Data analysis

This study made use of the Statistical Package for Social Science (SPSS) version 29 to analyse the data gathered from the respondents. This study analysed its data, using two methods: descriptive statistics and inferential statistics, and the results are discussed in the next section.

4. RESULTS AND ANALYSIS

4.1 Summary of biographical data

Table 1 provides a summary of the biographical data of the participants. According to the results in Table 1, out of 356 respondents, 195 (54.78%) were males, 149 (41.85%) were females, and 12 (3.37%) respondents did not fall under male or female. The findings are consistent with the study by Pheng and Chuan (2006), who found that male project managers made up the majority of the workforce compared to female project managers. Looking at the age, the results found that out of 356 project managers, 155 (43.54%) were between the ages of 41-50. The lowest percentage is 10.96% within the age group between 18-30 years. Furthermore, based on the results on industries, most project managers (28.6%) work in other sectors, which include marketing, healthcare, hospitality, education, entertainment, and transportation.

The biographical data also reveal that the majority of the project managers have more than five years of experience accounting for 288 (81%) of the respondents. As a result, the participants are more experienced, so the results of this study should be more reliable (Ngarira, 2019). Moreover, the results show that most organisations that the project managers work for have more than 100 employees, accounting for 40%. This corresponds with the study by Oyewobi et al. (2016), which states that most organisations employ more than 100 employees in South Africa. Lastly, the results show that most projects have 101 and above project members at 40%, followed by 50–100 project members at 30%. This is in line with the study by Sankaran et al. (2020), which states that the higher the number of project members, the higher the chances of success, however, these project members must be encouraged to contribute their ideas to the project.

4.2 Descriptive statistics of the variables

Descriptive statistics for the variables employed in Sections B and C of the questionnaire (project management performance and project success, respectively) are presented in Table 2. According to the results in Table 2, project management leadership has the lowest mean (4.03) and standard deviation (0.033) among all project management performance variables while project lifecycle management processes have the highest mean value of 4.23 and a standard deviation of 0.683. This suggests that project managers agree that procedures necessary to oversee the entirety of the project lifecycle must be incorporated to achieve success, while project leadership has an important but reduced significance relative to other project management performance factors. In terms of project success, project efficiency has the lowest mean value of 4.16 while business success shows the highest mean score of 4.29 suggesting that commercial success is a key measure of project success. In terms of the kurtosis for each variable, it was discovered that the overall results for project success and project management performance were both less than zero, indicating a light tail. Furthermore, because all of the variables had positive skewness values, the study's responses were skewed to the right.

Table 1. Summary of the biographical data

Gender	**Number of participants**	**Percentage of the total participants**
Male	195	54.78%
Female	149	41.85%
Other	12	3.37%
Age	**Number of participants**	**Percentage of the total participants**
18-30	39	10.96%
31-40	105	29.49%
41-50	155	43.54%

Gender	**Number of participants**	**Percentage of the total participants**
51-65	57	16.01%
Industries	**Number of participants**	**Percentage of the total participants**
Telecommunication	17	4.8%
Banking/Financial Services	34	9.5%
Construction	51	14.3%
Manufacturing	68	19%
Oil and Gas	84	23.8%
Other	102	38.6%
Experience	**Number of participants**	**Percentage of the total participants**
Less than 3 years	29	8%
3-5 years	39	11%
More than 5 years	288	81%
Number of Employees	**Number of participants**	**Percentage of the total participants**
1-10 employees	36	10%
11-50 employees	71	20%
50-100 Employees	107	30%
More than 100 Employees	142	40%
Number of Project Members	**Number of participants**	**Percentage of the total participants**
Less than 10 project members	36	10%
10-49 project members	71	20%
50-100 project members	107	30%
101 and above project members	142	40%

Source: Author's own.

Table 2. Descriptive statistics of each variable

Variable	**N**	**MEAN**	**STD. DEV.**	**SKEWNESS**	**KURTOSIS**
Project Management Leadership	356	4.03	0.033	2.69	-0.87
Project Management Staff	356	4.12	0.451	1.92	-0.32
Project Management Policy and Strategy	356	4.10	0.618	2.32	-0.64
Project Management Partnership and Resources	356	4.14	0.562	1.73	-0.35
Project Lifecycle Management Processes	356	4.23	0.683	1.77	-0.86
Project Management KPIs	356	4.19	0.663	2.91	-0.93
Project Management Performance	**356**	**4.14**	**0.5016**	**2.2233**	**-1.32**
Project Efficiency	356	4.16	0.699	2.84	-1.07
Impact on Customers	356	4.25	0.575	2.55	-1.23
Business Success	356	4.29	0.541	0.06	-0.03
Preparing for the Future	356	4.28	0.601	2.41	-0.68
Project Success	**356**	**4.25**	**0.604**	**1.97**	**-0.75**

4.3 Reliability

To assess the reliability of the questionnaire for this study, the researcher used Cronbach's alpha. For a newly developed construct, a reliability value of 0.70 or above is regarded as "acceptable" (Bannigan & Watson, 2009; Lakshmi & Mohideen, 2013; Adeniran, 2019). In this study, the Cronbach's alpha exceeded 0.70 for all variables[4]. Furthermore, an overall reliability score of 0.8668 for 39 items confirmed the high internal consistency and reliability of the variables used in the study.

4.4 Main results and analysis

4.4.1 Correlation analysis

According to Schober et al. (2018), the correlation coefficient looks at how different variables relate to one another. The matrix of correlation between project management performance and project success factors is presented in Table 3. Pearson's correlation results in Table 3 show significant, positive correlations between all the individual project management performance variables and the overall project management performance. Project management leadership has the lowest correlation with project management performance (0.49), thus indicating that an increase in project management leadership results in a moderate increase in project management performance. On the other hand, project management staff has the greatest correlation with project management performance (0.6592), indicating that by rewarding staff on the project, their performance can increase. As expected, all individual project success factors exhibit positive and significant correlations with overall project success, with impact on customers having the greatest correlation (0.7035).

The results also reveal significant, positive correlations between project management performance and project success. Interestingly, project lifecycle management has the highest correlation with overall project success (0.4296) indicating its significant impact on project success. Notably, the correlation between individual project management performance factors and overall project success varies from 0.2956 to 0.4296, suggesting low to moderate positive correlations. However, the correlation between overall project management performance and project success is 0.8482, indicating a strong correlation between these two factors. These results are discussed in greater detail in Section 4.4.3.

4.4.2 Regression analysis

Linear regression analysis was used to estimate the effect of the independent variables (which are the project management performance) on the dependent variable (overall project success), and the results are shown in Table 4. The results in Table 4 indicate that all the individual project management performance variables exhibit a positive effect on project success, and this effect is significant at a 1% level of significance. Project management leadership shows a p-value of 0.0011 and, interestingly, explains the least amount of variance in project success (8.48%) relative to other project management performance variables. This finding is consistent with the correlation results, which showed the lowest correlation between project management leadership and project success. In addition, when other project management performance variables are held constant, project success can rise by 0.2997 by providing training and rewards to project staff. In this regard, there is a positive relationship variance between project management staff and project success of more than 10% (13.88%).

[4] Unreported results available upon request.

Table 3. Pearson's correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Project Management Leadership (1)	1											
Project Management Staff (2)	0.3013 (0.000)	1										
Project Management Policy and Strategy (3)	0.2636 (0.000)	0.46 (0.000)	1									
Project Management Partnership and Resources (4)	0.243 (0.000)	0.3302 (0.000)	0.4081 (0.000)	1								
Project Lifecycle Management Processes (5)	0.3449 (0.000)	0.5422 (0.000)	0.4341 (0.000)	0.3948 (0.000)	1							
Project Management KPIs (6)	0.2218 (0.000)	0.4949 (0.000)	0.3947 (0.000)	0.3001 (0.000)	0.5512 (0.000)	1						
Project Management Performance (7)	0.49 (0.000)	0.6592 (0.000)	0.5995 (0.000)	0.4936 (0.000)	0.6198 (0.000)	0.5842 (0.000)	1					
Project Efficiency (8)	0.2684 (0.000)	0.4153 (0.000)	0.2791 (0.000)	0.3482 (0.000)	0.4108 (0.000)	0.4113 (0.000)	0.4274 (0.000)	1				
Impact on Customers (9)	0.2136 (0.000)	0.2286 (0.000)	0.2868 (0.000)	0.2843 (0.000)	0.2849 (0.000)	0.281 (0.000)	0.3439 (0.000)	0.4224 (0.000)	1			
Business Success (10)	0.2549 (0.000)	0.1988 (0.000)	0.3094 (0.000)	0.3205 (0.000)	0.3772 (0.000)	0.3165 (0.000)	0.3232 (0.000)	0.4475 (0.000)	0.4352 (0.000)	1		
Preparing for the Future (11)	0.2199 (0.000)	0.3262 (0.000)	0.3348 (0.000)	0.3601 (0.000)	0.442 (0.000)	0.3753 (0.000)	0.4492 (0.000)	0.5411 (0.000)	0.457 (0.000)	0.5124 (0.000)	1	
Project Success (12)	0.2956 (0.000)	0.3726 (0.000)	0.3581 (0.000)	0.3865 (0.000)	0.4296 (0.000)	0.4223 (0.000)	0.8482 (0.000)	0.678 (0.000)	0.7035 (0.000)	0.65 (0.000)	0.6742 (0.000)	1

Note: The values in parentheses () represent the p-values associated with each correlation coefficient.

Source: Author's own.

Project management policies and strategies rules demonstrate a positive effect on project success with a coefficient of 0.2981. According to this relationship, putting in place efficient policies and strategies can increase project success by 0.2981. Once more, project management partnerships and resources have a positive impact on project success. This relationship (with a coefficient of 0.3539) shows that, when all other factors are held constant, project success may be attained with strong partnerships and sufficient resources. Moreover, among other project management performance variables, project success variance is most effectively explained by project lifecycle management processes (18.23%). This finding is in line with the correlation data, which indicated that project lifecycle management processes and project success had the strongest association (0.4296). Project management KPIs are associated with a coefficient value of 0.3279, which is also statistically significant at 1%, as demonstrated by the p-value of 0.0079. The adjusted R-squared of 0.176 indicates a positive variance between project management KPIs and project success.

In addition, Table 4 shows the overall effect of project management performance on project success. Given the p-value of 0.0066, this effect is significant at the 1% level of significance and shows a positive relationship between project management performance and project success. Remarkably, compared to individual project management performance variables, overall project management performance reflects the highest amount of variance in project success (29.19%). This conclusion is in line with the correlation data, which indicated that project management performance and project success had the strongest association (value of 0.8482).

4.4.3 Discussion of key results

The results of the correlation and regression analyses are collectively examined in order to accept or reject the proposed hypotheses. In terms of Hypothesis 1, the Pearson correlation coefficient show that there is a significant positive correlation between project management leadership and project success (0.2956). Furthermore, the regression results indicate that leadership has a positive effect on project success with a coefficient of 0.2793 that has a p-value of 0.0011. Together, these results indicate that project management leadership has a positive effect on project success and, thus, Hypothesis 1 can be accepted. This finding is consistent with the findings of Rehan, et al. (2024), who also found that project management leadership has a significant, positive effect on project success.

In terms of Hypothesis 2, the regression results show that, with a coefficient of 0.2997 and a p-value of 0.0036, project management staff had a positive effect and according to the Pearson correlation coefficient, there is a strong positive relationship between project management staff and project success (0.3726), which collectively support Hypothesis 2. Therefore, these findings show that project management staff contributes to project success. This is in line with the study by Aga et al. (2016) who suggest that it is frequently essential for project managers to foster a sense of teamwork and team building among the project staff to complete the project successfully and efficiently.

Hypothesis 3 is based on the effect of project management policies and strategies on project success. Regression results indicate that project management policies and strategies had a positive effect on project success, and this is significant at 1% with a p-value of 0.0032 and a coefficient of 0.2981. The results also indicate that project management policies and strategies are correlated with the value of 0.3587. Therefore, this hypothesis is accepted, based on the results found. The results are in line with the study conducted by Cogin et al. (2016), which state that project management policies and strategies must be considered if the project's objectives are to be met.

Table 4. Results of the linear regressions

Independent variable	Dependent variable	R	R-Squared	Adjusted R-Squared	Std. Error	F-stat.	Coefficient	P-value
Constant	Project Success	0.8482	0.3039	0.2919	0.4336	105.902	2.1091	0.0050
Overall Project Management Performance							0.5132	0.0066
Constant	Project Success	0.2956	0.0874	0.0848	0.4929	33.8854	3.017	0.0086
Project Management Leadership							0.2793	0.0011
Constant	Project Success	0.3726	0.1388	0.1364	0.4788	57.058	2.9876	0.0011
Project Management Staff							0.2997	0.0036
Constant	Project Success	0.3587	0.1282	0.1258	0.4817	52.0631	2.9723	0.0042
Project Management Policy and Strategy							0.2981	0.0032
Constant	Project Success	0.3865	0.1494	0.147	0.4759	62.1558	2.7295	0.0073
Project Management Partnership and Resources							0.3539	0.0039
Constant	Project Success	0.4296	0.1846	0.1823	0.4659	80.1392	2.8248	0.0001
Project Management Lifecycle							0.3241	0.0021
Constant	Project Success	0.4223	0.1783	0.176	0.4677	76.8143	2.8203	0.0077
Project Management KPIs							0.3279	0.0079

Source: Author's own.

In terms of Hypothesis 4, project management partnerships and resources had a positive impact on project success in the regression analysis, with a coefficient of 0.3539 that is significant at a 1% level of significance. Moreover, there is a positive correlation between project management partnerships, resources, and project success. Zaman (2020) also suggest that, by having good partnerships, all parties can work together as a cohesive team to achieve project success.

Furthermore, Sudhakar (2016) found that having enough resources at the right time and at the right cost can enhance project success.

Hypothesis 5 relates to the effect of project lifecycle management processes on project success. Project lifecycle management processes show the greatest correlation with project success at a value of 0.4296. Furthermore, the project lifecycle management processes also show the highest positive relationship variance of 18.23% with project success. This corresponds with the study by Mir and Pinnington (2014) that also discovered that project management lifecycle management processes have a statistically positive relationship with project success.

Hypothesis 6 is based on the effect of project management KPIs on project success. The results indicate that project management KPIs are positive and statistically significant with project success by showing the correlation of 0.4223. The results are significant at 1% level based on the p value of 0.0079 and the coefficient value of 0.3279. The results are consistent with the Cruz Villazón et al. (2020) study, which found that key performance indicators (KPIs) are unique assessment tools that reveal how successfully project teams complete their work.

In addition, the results indicate a positive and statistically significant relationship between overall project management performance and overall project success, which is significant at the 1% level. This is shown by the p-value of 0.0066 and the high coefficient value of 0.5132. This shows that the probability of project success can be considerably boosted by managing project management performance. However, the adjusted R-squared suggests that 70.81% of the variance in project success cannot be explained by project management performance, and this should not be overlooked as these additional factors have a big impact on the success of the project. According to Radjawane et al. (2023), elements including good communication, risk management, and technology aspects affect a project's success. Therefore, more research into these aspects of unexplained variance is also necessary, but it is not within the scope of this study.

4.5 Further analysis

Further analysis was done to provide insight into how each project management performance variable influences the different components of project success, and the results are presented in Table 5. Interestingly, all the project management variables have a positive and significant effect with all the project success variables, because the coefficients are all positive and the p-values are less than 0.05. Notably, the project success variable that showed the highest coefficient value was project efficiency while the lowest coefficient level was shown by business success. The highest-ranked coefficient of project management leadership was project efficiency at a statistically significant level of 1%, which means that by having good project leadership, project efficiency can increase by 0.3446. The results are consistent with the study by Zheng et al. (2023), which demonstrates a beneficial relationship between project efficiency and leadership. Project management policy and strategy show the least, yet statistically significant, relationship with project efficiency.

Table 5. Regression results with the different project success variables

Independent variable	Dependent Variable	R	R-Squared	Adjusted R-Squared	Std. error	Coefficient	P value
Project Management Leadership	Project Efficiency	0.2684	0.072	0.0694	0.597	0.3447	0.0002
Project Management Staff	Project Efficiency	0.4153	0.1725	0.1701	0.637	0.4539	0.0002
Project Management Policy and Strategy	Project Efficiency	0.2791	0.0779	0.0753	0.672	0.3157	0.0085

Independent variable	Dependent Variable	R	R-Squared	Adjusted R-Squared	Std. error	Coefficient	P value
Project Management Partnership and Resources	Project Efficiency	0.3482	0.1212	0.1187	0.656	0.4330	0.0001
Project Management Lifecycle Management Processes	Project Efficiency	0.4108	0.1687	0.1664	0.638	0.4208	0.0063
Project Management KPIs	Project Efficiency	0.4113	0.1691	0.1668	0.638	0.4339	0.0057
Project Management Performance	**Project Efficiency**	**0.4274**	**0.1827**	**0.1803**	**0.633**	**0.6209**	**0.0003**
Project Management Leadership	Impact on the Customers	0.2136	0.0456	0.0429	0.563	0.2257	0.0004
Project Management Staff	Impact on the Customers	0.2286	0.0522	0.0496	0.561	0.2055	0.0001
Project Management Policy and Strategy	Impact on the Customers	0.2868	0.0822	0.0797	0.552	0.2669	0.0003
Project Management Partnership and Resources	Impact on the Customers	0.2843	0.0808	0.0782	0.552	0.290	0.0004
Project Management Lifecycle Management Processes	Impact on the Customers	0.2849	0.0811	0.0786	0.552	0.2401	0.0004
Project Management KPIs	Impact on the Customers	0.282	0.0789	0.0763	0.552	0.2439	0.0069
Project Management Performance	**Impact on the Customers**	**0.3439**	**0.1182**	**0.1157**	**0.541**	**0.4110**	**0.0002**
Project Management Leadership	Business Success	0.2549	0.0649	0.0623	0.524	0.2531	0.0001
Project Management Staff	Business Success	0.1988	0.0395	0.0367	0.531	0.1680	0.0001
Project Management Policy and Strategy	Business Success	0.3094	0.0957	0.0931	0.515	0.2706	0.0024
Project Management Partnership and Resources	Business Success	0.3205	0.1027	0.1002	0.513	0.3083	0.0059
Project Management Lifecycle Management Processes	Business Success	0.3772	0.1423	0.1398	0.502	0.2989	0.0001
Project Management KPIs	Business Success	0.3165	0.1001	0.0976	0.514	0.2582	0.0001
Project Management Performance	**Business Success**	**0.3232**	**0.1044**	**0.1019**	**0.513**	**0.3632**	**0.0004**
Project Management Leadership	Preparing for the Future	0.2199	0.0488	0.0456	0.587	0.2426	0.0002
Project Management Staff	Preparing for the Future	0.3262	0.1064	0.1039	0.569	0.3062	0.0002
Project Management Policy and Strategy	Preparing for the Future	0.3348	0.112	0.1095	0.567	0.3252	0.0004

Independent variable	Dependent Variable	R	R-Squared	Adjusted R-Squared	Std. error	Coefficient	P value
Project Management Partnership and Resources	Preparing for the Future	0.3601	0.1296	0.1271	0.561	0.3847	0.0002
Project Management Lifecycle Management Processes	Preparing for the Future	0.442	0.1953	0.1931	0.540	0.389	0.0001
Project Management KPIs	Preparing for the Future	0.3753	0.1408	0.1384	0.558	0.3401	0.0002
Project Management Performance	**Preparing for the Future**	**0.4492**	**0.2017**	**0.1995**	**0.537**	**0.5606**	**0.0004**

Source: Author's own.

5. CONCLUSIONS

The objective of the study was to investigate the impact of project management on project success in South Africa. The study aimed to provide insights into the factors influencing project success and help project managers improve their success rates. The quantitative research design was a causal-comparative research type, focusing on cause-and-effect relationships between various project management performance factors and project success. The study involved South African project managers registered with Project Management South Africa (PMSA). The study's findings indicate that there is a positive relationship between project management performance and project success, and these relationships are significant at both a disaggregated and aggregated level. Therefore, to guarantee project success, project managers must constantly place a greater focus on the project management performance variables. However, future studies can consider other factors, such as inherent risks, that also influence project success. This will ensure that alternative sources of project success are clearly understood and applied in project organisations for project success to be achieved. This will also add to the body of knowledge, given the limited scope of project management research, particularly in emerging and African countries.

To conclude, the current study carries important implications for the field of organisation development (OD) and change by highlighting that project success is strongly influenced by a set of interrelated project management performance factors, specifically, leadership, staff, policies and strategies, partnerships and resources, lifecycle processes, and KPIs. These findings reinforce OD's core principle that sustainable change depends on the alignment of people, processes, and strategy. Practically, the results suggest that OD practitioners can improve organisational effectiveness by strengthening leadership capabilities, fostering teamwork and staff engagement, aligning project policies with broader strategy, optimising stakeholder partnerships and resources, embedding lifecycle-based change processes, and using KPIs to measure and guide transformation efforts. By providing empirical evidence from the South African context, the study also extends the applicability of OD frameworks to emerging economies, offering actionable insights for organisations seeking to implement structured, measurable, and contextually relevant approaches to managing change and achieving long-term success.

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