

Leadership Practices Supporting Workforce Engagement and Inclusion in Western Cape Construction Firms: A Principal Component Analysis

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Abstract

This study identifies leadership practices perceived to support workforce engagement and inclusion in construction project delivery in the Western Cape Province, South Africa. A quantitative questionnaire survey was administered to leaders in cidb Grade 6–9 general building firms, and 64 valid responses were analysed using descriptive statistics, Cronbach's alpha, and principal component analysis. The instrument's reliability was high ($\alpha = 0.910$). Five components were extracted, namely inclusive workplace support, employee empowerment, social support, participative leadership, and workplace clarity, explaining 57.094% of the total variance. The highest-ranked practices were enabling peer support (MV = 4.59) and leadership engagement and visibility (MV = 4.51). The study provides preliminary evidence on leadership-related practices associated with engagement and inclusion in Western Cape construction firms. However, because productivity was not directly measured and the study was limited to one province and a modest sample, the findings should be interpreted with caution.

Keywords: construction management, inclusion, leadership, project delivery, workforce engagement, and the Western Cape

1. Introduction

The construction industry is very important to a country's economic and infrastructure development (Atiku *et al.*, 2024; Osunsanmi *et al.*, 2018; Moyo *et al.*, 2021). The construction industry contributes significantly to job creation and GDP, but still faces several challenges, including low productivity, inefficiencies, and workforce diversity (Bailey *et al.*, 2017; Dithebe *et al.*, 2022). Empirical evidence from the study conducted by Osunsanmi *et al.* (2018) shows that the construction industry is an important sector for South Africa's economic growth and performance, as it employs more than 1.4 million people, lowering the unemployment rate.

According to Mahamid (2013), citing Chitkara (2004), the construction industry accounts for 6% to 9% of total GDP in several countries. According to recent research by Alaloul *et al.* (2021), the construction business is worth USD 1.7 trillion globally, with most nations accounting for 5-7% of total GDP. According to Tucker *et al.* (2015), construction projects in the Western Cape Province contribute significantly to urban development and meet the rising need for housing, infrastructure, and economic growth to achieve sustainable development goals. Despite these contributions, the construction industry faces several barriers to workforce

engagement and inclusiveness (Osunsanmi *et al.*, 2018). Cultural issues, organisational structure, limited chances for underrepresented groups, and ineffective leadership practices (Mishra, Boynton & Mishra, 2014). According to Cole *et al.* (2012), these issues frequently result in low morale, high turnover rates, and a lack of integration between individual and construction business goals, reducing workforce productivity (Alam *et al.*, 2024).

Inclusive leadership has become increasingly prevalent due to factors such as communication barriers, resistance to change from employees and management, unconscious bias, limited leadership competencies, and difficulties building trust among team members (Obeng *et al.*, 2024; Mishra *et al.*, 2014). As a result, inclusive leadership enables contractors to achieve success in construction projects. Furthermore, Shaik *et al.* (2020), Mahamid (2013), Moyo *et al.* (2021) and Chitkara (2004) reveal that the construction industry's capacity to achieve construction project delivery needs depends on developing a motivated and inclusive workforce to enhance productivity at the project level. According to Moyo *et al.* (2021), the construction industry is overlooked due to low productivity growth resulting from inadequate adoption of a diverse and inclusive workforce. Against this background, the research question for this study is as follows:

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- *What are the leadership practices influencing workforce engagement and inclusion to enhance team and individual productivity in construction project delivery?*

This study aims to provide evidence-based insights into how engagement and inclusion practices influence contractors' workforce productivity and to identify actionable practices to achieve productivity at the project level. This study contributes to the larger discussion on workforce productivity and sustainable development in the construction industry (Shaik *et al.*, 2020). The following sections include a literature review relevant to the study, the research methodology used to achieve the study's aims, the findings, the analysis and discussion of the results, conclusions and recommendations.

2. Literature Review

2.1. Leadership practices in construction

Leadership practices in the construction industry are essential for ensuring effective project delivery, workforce management, and contractors' business success (Kalambayi *et al.*, 2021). Furthermore, leadership practices increasing recognition in project management research underscore the significance of competencies such as leadership, results orientation, assertiveness, reliability, and efficiency, all linked to improved project delivery (Rehan, Thorpe & Heravi, 2024). Wu, Li and Fang (2017) highlight that construction leaders are responsible for coordinating diverse teams, managing resources, maintaining safety standards, and addressing project challenges in dynamic and often uncertain environments. Effective leadership practices include clear communication, employee empowerment, collaborative decision-making, conflict resolution, and the promotion of a positive safety culture (Rehan *et al.*, 2024). A research conducted by Kalambayi *et al.* (2021) reveals that these leadership practices directly impact employees' performance, productivity, and commitment and they can positively or negatively affect a team.

2.2. Workforce engagement in the construction industry

As workplace diversity evolves, many employees experience exclusion, and many feel they are not considered integral parts of the organisation (Goswami & Goswami, 2018). Worker engagement refers to employees' level of involvement and dedication to their organisation (Jerónimo *et al.*, 2022; Goswami & Goswami, 2018; Brooking, 2021; Ly, 2024). Thus, to increase employee engagement, the workplace needs to promote safety, meaningfulness, and availability (Jerónimo *et al.*, 2022). Among other individual employee behavioural phenomena, research has shown that proactive individual work engagement significantly affects both individual and organisational performance (Gupta and Sharma, 2016). Adaptability,

flexibility, and tailored responses to changing environments are essential qualities for organisations in a competitive environment (Uddin, Mahmood & Fan, 2018).

2.3. Inclusion in diverse construction workforces

An inclusive leader is characterised by participation, empowerment, open communication, collaboration, trust, and respect for diverse perspectives (Rehman, 2020). Ding, Ren and Lin (2024) add that leaders are able to realise teams' full potential by embracing diversity in all forms, including gender, race, age, and skill set. In a field where collaboration across disciplines is crucial, such as engineering, architecture, and labour, inclusive leadership ensures that all voices are heard and diverse viewpoints are integrated into problem-solving (Fu *et al.*, 2022). Khan *et al.* (2020) reveals that this strategy improves teamwork, resulting in better project outputs, fewer misunderstandings, and a stronger feeling of shared purpose.

2.3.1. The role of leadership in enhancing engagement and inclusion

Inclusive leadership plays a key role in improving employees' engagement and inclusion in the organisation during the delivery of a construction project (Goswami & Goswami, 2018). Furthermore, Rehman (2020) reveals that an inclusive leader offers employees an environment that causes them to feel appreciated, respected, and able to add value to the goals of the organisation. Rehman (2020) highlights that inclusive Leaders value and respect differences, embrace equity opportunities, and fairly treat all employees, irrespective of their backgrounds. However, research conducted by Tims *et al.* (2013) and Aragon and Kim (2021) also reveals that cultural biases, limited development opportunities for minority-represented workforce groups, and workforce disengagement are a few obstacles faced by contractors that require effective leadership practices. Furthermore, Ding, Ren and Lin (2024), Rehman (2020), and Moss (2019) add that construction leaders who embrace workforce diversity and inclusion programmes can drive and improve workforce morale and align workforce goals with project objectives, thereby enhancing workforce productivity. Therefore, leadership development programmes that promote diversity awareness enable contractors to maintain an inclusive and engaging workplace (Gerritsen, 2020; Jerónimo, Henriques & Carvalho, 2022; Nishii & Leroy, 2022). Cole *et al.* (2012) indicate that inclusive leaders enable trust, encourage collaboration, and establish a sense of psychological safety, which can lead to greater employee engagement, satisfaction, and performance. Consequently, leadership is a critical determinant of inclusion and engagement and helps create motivated and resilient employees.

2.4. Productivity in construction project delivery

Productivity in the construction business is a vital indicator that directly impacts project success, profitability, and industry growth (Shinde & Hedao, 2017). In the construction industry, productivity is commonly defined as the ratio of outputs (such as completed work) to inputs (such as labour, materials, and time) (Crawford & Vogl, 2006; Ghodrati *et al.*, 2018; Choudhry, 2017). Almamlook *et al.* (2020) reveal that high productivity in construction is critical for completing projects on time and within budget, which is especially vital in an industry defined by tight deadlines and financial constraints. However, the construction sector faces hurdles to achieving optimal productivity, such as project complexity, labour shortages, and the need for effective coordination among a wide range of stakeholders (Durdyev & Mbachu, 2011). According to Ghodrati *et al.* (2018), the experience and skill level of the workforce are important; a skilled and trained labour force is more productive and reduces errors and rework. An inclusive leader leads to effective resource management and project planning, which are also essential. Inadequate resource allocation or planning can result in cost overruns, delays, and disruptions that harm output (Assaad & El-Adaway, 2021). Moreover, external variables that can cause unpredictability and reduce efficiency, such as weather, regulations, and market swings, frequently affect building projects (Naoum, 2016). Because of these considerations, construction managers need to put plans in place that not only reduce risks but also optimise operations (Shinde & Hedao, 2017).

3. Research Methodology

3.1. Research design

This study adopted a quantitative research approach to assess inclusive leadership practices enabling contractors project success. Creswell and Creswell (2018) state that this method involves gathering numerical data through surveys, tests, or pre-existing datasets to lay the groundwork. This makes it possible for researchers to evaluate correlations between variables, analyse trends, and gauge the frequency of particular variables (Richey & Klein, 2014). 154 structured survey questionnaires were distributed to the respondents employed by contractors registered under cidb grades 6 to 9.

3.2. Population and sample size

This study focused on construction professionals involved in the delivery of construction projects. The selected population enabled the researchers to better understand the unique obstacles and challenges they face in promoting an inclusive workplace. A diverse range of leadership roles, such as construction managers, site agents, quantity surveyors, team leaders, and owners, ensures a thorough awareness of

perspectives across the construction hierarchy registered between grades 6 and 9. The population size for this study comprises 206 contractors registered between grades 6 and 9, with 90 contractors registered in grade 6, closely followed by 69 contractors registered in grade 7. While 25 and 22 contractors were registered under grades 8 and 9, respectively. This study adopted probability sampling using random sampling.

To achieve the objectives of this study Singh and Masuku (2014) equation was adopted ($n = \frac{N \cdot Z^2 \cdot p \cdot q}{e^2 \cdot (N-1) + Z^2 \cdot p \cdot q}$), where n is the sample size, N is the population size, Z is based on the desired confidence level (95%), e is the margin of error, p is the estimated proportion of an attribute that is present in the population, and q is $1-p$. Using this equation, the sample size for the study was determined as 154 contractors registered in cidb Grade 6 to 9.

3.3. Data collection

154 survey questionnaires were sent to contractors registered under cidb Grade 6 to 9. 98 survey questionnaires were sent out to participants via email. Twenty-eight (28) of the 98 were correctly filled out and returned. A total of fifty-six (56) survey questionnaires were physically given to contractors in the Western Cape Province. Thirty-six (36) of the fifty-six (56) survey questionnaires were answered accurately by the respondents. 64 surveys were correctly completed, resulting in a 41.6% response rate. According to Hwang *et al.* (2018), most construction-related studies consider a response rate of between 20 to 30% acceptable. A five-point Likert scale was adopted in this study, namely: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, and 5 = Always. Furthermore, the respondents were informed to note the unsure response, and the inclusion of an "Unsure" option enabled respondents to express uncertainty rather than being forced to select a never or always response that might not accurately reflect their views. According to Joshi *et al.* (2013) and Emerson (2017), Likert scale questions offer respondents a range of options to indicate their degree of agreement or disagreement with a particular statement, enabling researchers to quantify subjective opinions.

3.4. Data analysis

For quantitative results, descriptive and inferential statistics were used. Furthermore, the Likert-scale survey questionnaires were tested using Cronbach's alpha coefficient to assess the internal consistency of the quantitative items, with values ranging from 0 to 1.0; adequate reliability is 0.7 or greater (Cronbach, 1951). To ensure the reliability and validity of the results, Cronbach's alpha was used. The results show the reliability of the results with an average of 0.910, indicating the internal consistency of the results. Cronbach's alpha is a crucial statistic for evaluating the validity of scales and surveys in a variety of fields,

claims Taber (2018). Regarding inferential statistics, this study employed PCA to reduce the large number of variables into a smaller set. Pallant (2020) argues that PCA combines similar variables into factors, reduces the dimensionality of the data, and facilitates researchers' understanding of underlying patterns. PCA includes evaluating the data's suitability for factor analysis by assessing correlations among variables to determine whether they are sufficiently related (Pallant, 2020). This study adopted a factor loading threshold of 0.30 in the PCA, as loadings of 0.30 and above are generally considered practically significant and indicate a meaningful relationship between the variable and the extracted component (Pallant, 2020). Direct Oblimin rotation was applied as the extracted components were expected to be correlated, which is consistent with the theoretical relationships between leadership, engagement, and successful construction project delivery in the Western Cape Province. In this study, components were named based on the conceptual similarity and thematic meaning of variables with high factor loadings (≥ 0.30) on each extracted component, ensuring that each label accurately reflects the underlying construct represented by the grouped variables as recommended by Pallant (2020). The Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity test are two commonly used metrics (Shrestha, 2021).

4. Results

4.1. Demographic profile of the respondents

This study indicated the demographic information of respondents with evidence showing that most respondents, 51.6% (33), have a degree, followed by 25.0% (16) of respondents with a diploma qualification. Additionally, 10.7%, 7.8%, and 4.7% of respondents had master's, matric, and other qualifications, respectively. This shows that most contractors' management in operation are qualified to work in the construction sector, and the majority of respondents hold tertiary qualifications. Regarding occupation, 34.4% (22) of respondents are construction managers, followed by team leaders at 29.6% (19). Furthermore, additional participants, including directors, quantity surveyors, and others, accounted for 36.0% of respondents. This suggests that construction managers or team leaders (site agents and foremen) oversee workforce productivity in construction project implementation. According to the findings, 64.0% of the respondents were construction managers and team leaders. The results show that 37.5% (24) of respondents have been in their current positions for 6 to 5 years, 29.7% (19) have been in their current positions for 11 to 15 years, 18.8% have been in their current positions for 1 to 5 years, and just 14.1% have been in their current positions for more than 15 years. These respondents have work experience in the construction industry. The results indicate that 45.3% (29) of respondents were aged between 46 and 55, and 29.6%

(19) were aged between 36 and 55. 17.2% of them were in the 26–35 age range. 6.3% of respondents were above the age of 55, while only 1.6% were between the ages of 18 and 25 years. The data show that most responders were over 40 years old. Regarding respondents' gender, the results highlight that both genders are represented among the 64 respondents, with 67.2% (43) identifying as male and 32.8% (21) as female. Regarding the race of respondents, the findings show that 37.5% were of the coloured race, 31.3% were black or African, and 26.6% were White. Furthermore, only 4.7% of respondents were Indians. Table 2 shows that 31.3% of the contractors were listed in Grade 7, 26.6% of the enterprises were listed in Grade 8, 25.0% of the contractors were listed in Grade 6, and only 17.2% (11) of the enterprises were in grade 9. The majority of active contractors were in grades 7 and 8, with 57.9% of respondents working for contractors.

4.2. Ranking of leadership practices supporting workforce engagement and inclusion

This section presents leadership practices enabling workforce engagement and inclusion in the construction industry of the Western Cape Province. The results show that leadership enable peer support, and this is highest, with a mean value (MV) of 4.59. Furthermore, the results indicate that leadership engagement and visibility are ranked second with MV= 4.51 as the leadership practice supporting workforce engagement and inclusion. The third most ranked employee engagement and inclusion leadership practice was exposing employees to skills for addressing conflicts, together with promoting a sense of ownership among employees, as well as the accessibility of physical and digital tools/ resources to all employees to promote inclusion and these practices were supported by MV=4.47 as leadership practices supporting workforce engagement and inclusion. It is evident that accessibility of physical and digital tools/ resources to all employees to promote inclusion, STD = 0.642, is the third most ranked practice, followed by exposing employees to skills for addressing conflicts with STD = 0.835, and promoting a sense of ownership among employees with STD = 0.854. The least-ranked employee engagement and inclusion was prioritising employees' well-being, with MV = 3.91. Overall, these leadership practices support workforce engagement and inclusion by contractors operating in the Western Cape Province.

According to factor analysis, the results reveal a KMO score of 0.796, which exceeds the minimum of 0.60. Watkins (2021) claims that a KMO score of less than 0.6 indicates insufficient sampling and requires corrective action. A significance level of 0.001, which is less than $p < 0.005$, and Bartlett's test of sphericity was 226.547. Table 1 shows the eigenvalues of a square matrix with five (5) recovered components: 2.382, 1.826, 1.376, 1.269, and 1.140. The results demonstrate

Table 1: Component Matrix^a on leadership practices supporting workforce engagement and inclusion

	Component				
	1	2	3	4	5
Component 1: Inclusive workplace support					
Cultural awareness training	.740				
A fair hiring process that promotes a sense of belonging	.710				
Provide a support service for personal and professional challenges faced by employees	.709				
Component 2: Employee empowerment					
Promoting a sense of ownership among employees		.682			
Accessibility of physical and digital tools/ resources to all employees to promote inclusion		.609			
Promoting transparent decision-making to foster employees' trust		.562			
Regular check-in meetings with employees		.462			
Component 3: Social support					
Encouraging employees to participate in community engagement			.802		
Enable peer support			.454		
Component 4: Participative leadership					
Leadership engagement and visibility				.697	
Involve employees in decision-making				.602	
Exposing employees to skills for addressing conflicts				.357	
Component 5: Workplace clarity					
Prioritise employee's well-being					.685
Clear employee role and expectations					.437
<i>Eigen value</i>	2.382	1.826	1.376	1.269	1.140
<i>Proportion of variance (%)</i>	17.017	13.045	9.831	9.061	8.140
<i>Cumulative variance (%)</i>	17.017	30.062	39.893	48.954	57.094
Extraction Method: Principal Component Analysis.					
a. 5 components extracted.					

that leadership practices supporting workforce engagement and inclusion adopted by respondents accounted for 17.017% of the variation, followed by the second component at 13.045%, the third component at 9.831%, the fourth component at 9.061%, and the fifth component at 8.140%. The total extracted components account for 57.094% of the variance, making them especially essential for varied and inclusive workforce productivity in the Western Cape Province. Table 1 demonstrates that all variables have values greater than 0.30, with those less than 0.30 suppressed. In addition, leadership practices that support workforce engagement and inclusion have been discovered. The variable that represents component 1 coverage is 'inclusive workplace support', component 2 was on 'employee empowerment', component 3 was on 'social support', component 4 was on 'participative leadership', and component 5 was on 'workplace clarity'.

5. Discussion of findings

Component 1 (*Inclusive workplace support*) emerged as the most significant leadership practice influencing workforce engagement and inclusion, thereby

enhancing team and individual productivity. It was characterised by three key practices: cultural awareness training (0.740), a fair hiring process that promotes a sense of belonging (0.710) and providing a support service for personal and professional challenges faced by employees (0.709). This component is supported by Tabassi *et al.* (2016), who concluded that inclusive workplace support adopted by contractors should incorporate interactive exercises, such as role-playing and scenario discussions, to ensure that employees can apply principles in real-world scenarios and to ensure the understanding of an inclusive workforce in the construction industry that promotes productivity in construction project delivery. Thus, employees' continuous learning opportunities, feedback mechanisms, and leadership involvement are critical for establishing a sustainable culture of inclusion (Wu *et al.*, 2016).

Component 2 (*Employee empowerment*) encompasses four key features: promoting a sense of ownership among employees (0.682), accessibility of physical and digital tools/ resources to all employees to promote inclusion (0.609), promoting transparent decision-making to foster employees' trust (0.562), and regular

check-in meetings with employees (0.462). This component aligns with the descriptive findings. Promoting employee ownership is a fundamental leadership practice that influences workforce engagement and productivity during construction project delivery (Wiefek *et al.*, 2019). Azila-Gbetteor *et al.* (2024) and Mishra *et al.* (2014) add that employees who feel personally responsible for the success of their jobs and the entire project are more motivated to work at greater levels, take initiative, and actively participate in problem-solving. Moreover, Waller (2020) finds that in the construction industry, where teamwork and project completion are most important, developing ownership can lead to greater accountability, higher job quality, and less supervision. Hence, construction leaders may foster a sense of ownership among employees by including them in decision-making, giving meaningful responsibilities, recognising individual and team achievements, and offering chances for professional development (Shaik *et al.*, 2020).

Component 3 (*Social support*) accounts for 9.831% of the total variance. It comprises two key features: encouraging employees to participate in community engagement (0.802) and enabling peer support (0.454). According to Wu, Li and Fang (2017), contractors who incorporate social support into their businesses promote a sense of purpose and responsibility for both the workplace and the larger community by applying skills gained by the workforce during project delivery to impact communities. In addition, Loosemore and Lim (2018) highlight that contractors are able to improve employee morale and teamwork by promoting volunteer programmes, sponsoring company-sponsored events, and rewarding community involvement. Thus, Loosemore and Lim (2018) conclude that this approach involves not only increasing neighbourhood links but also improving the company's brand and fostering a culture of social responsibility.

Component 4 (*Participative leadership*) is characterised by two key features: leadership engagement and visibility (0.697), involving employees in decision-making (0.602), and exposing employees to skills for addressing conflicts (0.357). According to Wu *et al.* (2017), participative leadership is crucial for developing a motivated, cohesive workforce, particularly in the construction industry. Additionally, Yunpeng and Zaman (2024) reveal that when construction leaders are actively involved and visible on-site, they foster trust, express commitment, and create a culture in which the construction workforce feels appreciated and heard. This finding aligns with the descriptive findings, with a mean value of 4.51. Additionally, the descriptive findings show that enabling peer support is one of the most significant leadership practices for enhancing workforce engagement and inclusion to enhance project delivery,

with a mean value of 4.59 and this practice was ranked first. Wittenhagen *et al.* (2024) claim that implementing peer support in construction teams enhances workforce collaboration, skill sharing, and mutual encouragement, thereby improving both individual and team performance, contributing to workforce productivity and project success. Furthermore, Goswami and Goswami (2018) add that daily meetings, friend systems, and mentorship programmes enable the workforce to feel supported and valued, resulting in increased morale and workforce productivity, which improves project success.

Component 5 (*Workplace clarity*) accounts for 8.140% of the total variance in the study and comprises two practices: prioritising employee well-being (0.685) and clear employee roles and expectations (0.437). This component is consistent with Kowalski and Loretto (2017), who reveal that prioritising employee well-being is critical for contractors to improve workforce engagement and inclusion and an engaged and loyal team that focuses on productivity. Furthermore, organisations demonstrate their commitment to their employees' overall health and safety by providing mental health support, flexible working arrangements, and promoting work-life balance to improve workforce commitment in project delivery (Søvold *et al.*, 2021).

6. Conclusion and Further Research

For more than a decade, workforce engagement and inclusion have emerged as concerns within the construction industry, particularly in the Western Cape Province. Leadership practices adopted by contractors in the Western Cape Province play a crucial role in enhancing workforce engagement and inclusion. This study aims to assess leadership practices that support workforce engagement and inclusion to enhance successful project delivery. The findings from this study reveal the following components of responsible leadership practices supporting workforce engagement and inclusion: inclusive workplace support, employee empowerment, social support, participative leadership, and workplace clarity. In conclusion, contractors who promote peer support foster camaraderie and trust, helping employees feel valued and supported by their colleagues, thereby improving productivity in construction project delivery. Also, a cultural awareness training equips employees with the skills to understand and appreciate diverse backgrounds, creating a more inclusive workplace. Encouraging a sense of ownership and community engagement inspires employees to take pride in their work and contribute positively both to the company and the community. As a result, leadership engagement, visibility, and prioritising employee well-being demonstrate a genuine commitment to employees' health and happiness, improving morale, strengthening loyalty across the organisation, and boosting workforce

productivity. Thus, this study recommends that construction leaders develop a focus on employee well-being through supportive policies and health initiatives to demonstrate the organisation's commitment to a healthy work-life balance, which can lead to improved job satisfaction, retention, and workforce productivity that leads to sustainable business performance in the construction industry of the Western Cape Province. Future research should extend this study to a broader

geographical scope within South Africa and across different sectors of the built environment to enhance the generalisability of the findings. Additionally, further studies could employ qualitative or mixed-method approaches to gain deeper insights into how leadership engagement, employee well-being, and participative practices influence workforce productivity and organisational performance.

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