



Work Engagement in the South African Public Sector: a Demographic Analysis

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Abstract

Work engagement has been recognised as a critical factor in enhancing organisational performance, especially within the public sector. Despite extensive research globally, work engagement within the South African public sector remains underexplored, especially from a demographic perspective. This study aims to explore the demographic factors that influence work engagement in the South African public sector, focusing on employees' age, gender, employment position, highest qualifications and duration of service at their current employer. The South African public sector plays a crucial role in national development, and understanding the factors that influence work engagement can lead to improved employee performance, productivity, and organisational commitment. By considering demographic variables, this research seeks to fill gaps in existing literature and inform human resource practices in the public sector. A quantitative research design was employed, utilising a survey-based method to collect data from public sector administrative employees. Demographic information was gathered alongside work engagement metrics, analysed using statistical techniques to identify correlations between demographic variables and work engagement levels. The results show that age is significantly related to work engagement, while no significant differences were found between work engagement and gender, highest qualification, or length of service with the current employer. The results suggest that tailored interventions and employee development programs are necessary to enhance work engagement among different demographic groups. Public sector managers can influence these insights to create a more inclusive and supportive work environment that nurtures higher engagement across diverse employee segments.

Keywords: *Work Engagement, South Africa, Public Sector, Demographics and Administrative Environment.*

1. Introduction and Background

The concept of work engagement has been extensively studied; however, there is paucity in research that examines the relationship between work engagement and biographical factors such as age, gender, and length of service, particularly in the public sector. In the work environment work engagement is evident when employees feel competent and confident in their job roles (Knight, Patterson & Dawson, 2019). It is defined as “a positive, fulfilling, work-related state of mind, typically marked by vigour, dedication, and absorption” (Xu, Liu & Tang, 2022). Managers who motivate, support, and actively engage their staff can reduce turnover, lower stress levels, and enhance employee commitment to the workplace (Robinson, 2020). Positive work engagement leads to improved employee well-being and performance, particularly in an principled environment, which makes it essential to foster engagement while preventing work overload (Robijn, Euwema, Schaufeli & Deprez, 2020). Work engagement is highly valued in high-performing employees and is linked to both employee well-being and effective teamwork (Robijn et al., 2020). Organisations must recognise the importance of empowering their workforce to maximise productivity and thrive in today’s competitive global market (Munawar, Yousaf, Ahmed, & Rehman, 2022). Management must create a work environment that encourages engagement, fosters loyalty, and promotes employee retention to prevent turnover and enhance the organization's reputation (Saks, 2017). High levels of engagement can boost focus, productivity, commitment, and creativity, ultimately preventing stress from arising (Patrick & Mukherjee, 2018).

2. Problem Statement

Despite the South African public sector’s critical role in delivering essential services, there are persistent concerns regarding low levels of employee engagement, motivation, and productivity. Work engagement is a positive, fulfilling state of mind characterised by vigour, dedication, and absorption, and is a key factor influencing performance and service delivery outcomes. However, evidence suggests that engagement levels vary significantly across demographic groups such as age, gender, education, tenure, and occupational level. These demographic differences are often overlooked in organisational research and policy design. The lack of a comprehensive demographic analysis limits the ability of public sector institutions to develop targeted strategies that foster engagement across diverse employee groups. Therefore, it is necessary to investigate how demographic factors influence work engagement in the South African public sector to inform inclusive human resource practices and improve overall institutional performance.

3. Research Purpose

Building on the above, the study aimed to assess whether there were statistically significant differences in work engagement based on:

- Age
- Gender
- Highest education qualification and
- Duration of service at current employer

4. Literature Review

4.1 Theoretical Framework

The theory of organisational behaviour in relation to work engagement in the public sector has two conspicuous central directions: it is orientated towards human resources and towards achieving organisational results (Nasilloyevich, 2020). In the public sector, the theory of organisational behaviour is used in management not only to reflect reality and explain it but also to influence the assumptions of employees in the organisation (Butts & Rich, 2018). Organisational behaviour theory contributes to understanding engagement with one's work, as well as the aspects that can motivate employees, strengthen work engagement, and assist organisations in creating a solid ethical relationship of trust with employees (Prabhu, 2020).

4.2 Determinants of work engagement

The purpose of work engagement is to foster a positive and fulfilling psychological state that enhances employee well-being, motivation, and overall performance. When employees are highly engaged, they exhibit greater vigour, dedication, and absorption in their work, which not only benefits their individual productivity but also improves organisational outcomes (Xu, Liu & Tang, 2022). Work engagement serves as a critical driver in reducing turnover, mitigating stress, and increasing employee commitment, especially in environments where motivation may be low (Robinson, 2020). Moreover, in a supportive work environment, engaged employees contribute to a culture of collaboration, innovation, and higher job satisfaction, ultimately improving the quality of service and organisational effectiveness (Saks, 2017).

Managers who engage, inspire, strengthen and connect with employees have the ability to reduce employee turnover and burnout and to increase the levels of work engagement (Robinson, 2020). Work engagement has positive consequences in terms of the well-being and performance of employees in a decent work environment; hence, work engagement should be stimulated and work overload prevented (Robijn et al., 2020). High levels of work engagement may encourage employees to become more absorbed, productive, committed and creative and will prevent the development of stress (Patrick & Mukherjee, 2018). When employees are not engaged in their work, it causes a disconnect between their effort and their organisational effectiveness, which significantly affects an organisation's financial performance (Saks, 2017). Work engagement and organisational commitment positively impact employees' levels of energy and enthusiasm, pride in their work, job performance, commitment and health (Jnaneswar & Ranjit, 2023).

4.2.1 Ethical leadership

Employees who are motivated learn new skills and take advantage of possibilities and are involved with volunteer work and mentorship. On the other hand, disconnected workers are less industrious and less dedicated to their jobs (Karaferis *et al.*, 2022). Determinants of work engagement include ethical leadership, organisational communication, support, trust and work life balance (Schaufeli, 2021). Work engagement continues to thrive and is becoming a more significant component of an organisation's success, as well as a connection built on trust and ethics among management and employees and is most likely to add favourably to a satisfied workforce (Knight, Patterson & Dawson, 2019).

Through their own behaviour as well as their interpersonal interactions, ethical leaders display applicable conduct (Ahmad & Gao, 2018). Ethical leadership has an impact on organisational effectiveness and creates a productive work environment (Cheteni & Shindika, 2017). In

addition, ethical leaders offer psychological empowerment to employees, provide a sense of meaning to their work, allow them independence and control over their jobs, offer constructive feedback and indicate the impact of tasks or attainments of goals (Ahmad & Gao, 2018). To maintain credibility, leaders must engage in appropriate behaviour such as openness and honesty and treat all employees fairly (Cheteni & Shindika, 2017). Ethical leaders are those with moral fibre and a sense of justice and proportion and lead by example (Guo, 2022). Similarly, ethical leaders gain employee's trust by engaging in unambiguous ethics and by strengthening support and aligning organisational decisions with values (Cheteni & Shindika, 2017). The determinants of work engagement are discussed next.

4.2.2 Organisational communication

Organisational communication is the sending and receiving of messages among interrelated individuals and stakeholders within and outside a certain context, with the intention of achieving both personal and group objectives. The type of an organisation has a significant impact on the context and cultural aspects of organisational communication (Hutasuhut, Mesiono, Isa, Khurniawan & Suyatmika, 2023). Organisational communication encompasses everything from individual to mass communication and focuses on fostering connections with internal team members and relevant outside partners. Internal operational communication is done verbally, electronically, or in writing to implement the organisations' operational plans. External communication links to work purposes related to the general public (Kristina, 2020).

Administrative processes are fostered through the communication of suitable beliefs and standards and is vital for effective work engagement and to achieve organisational goals. An important component of communication in business is the governing value system of the organisation. Organisational communication is key in the work environment (Rajest *et al.*, 2022). Communication is an integral part of effective management practices within the workplace and the organisation's work atmosphere should be created to promote direct and honest discussion of ethical issues, taking action to solve them, and shielding employees from unfavourable effects (Cheteni & Shindika, 2017). Thus, knowing their staff members might be challenging for managers on an individual level, but, with good communication, managers can create a profile, relate, observe and assess employee's achievement within the organisation (Tuukkanen, Wolgsjö & Rusu, 2022). When good and effective organisational communication is not prioritised in the establishment it negatively affects labour relations. Organisational communication is the process through which organisations portray, convey, and construct the environment, culture, values, and objectives that define the organisation and its members (Reddy & Gupta, 2020:3793).

4.2.3 Organisational support

In the organisational environment employees are perceived as assets and seen as resources necessary for organisational success. However, to achieve competitive advantage and relevance, management must effectively and optimally provide sufficient organisational support to their employees (Olowodunoye & Owolabi, 2019). Regarding feeling appreciated and recognised, organisational support provides important insight into the interaction between employees and organisations. Therefore, management should be mindful of how a person contributes to the organisation and consider their necessities and expectations relating to personal development (Suárez-Albanchez *et al.*, 2022). Organisational support assists employees in shaping their identification within an organisation (Jamal, Anwar & Khan, 2022). Employees' tendency to reciprocate organisational treatment would depend on their degree of agreement and identification with the organisation's strategy and objectives. The expectation

of reciprocity is based on two principles: that individuals who have benefited should return the favour and those persons who have assisted individuals should not be hurt by others (Satardien, Jano & Mahembe, 2019).

Organisational support can be perceived as those benefits that an employee identifies to be enjoying in being a member of an organisation. Benefits may be in the form of financial and or moral benefits compared with the input from the employee to the organisation (Olowodunoye & Owolabi, 2019). Thus, organisational support is one of the strongest motivating variables in the lives of employees, such as innate incentives, when individual are satisfied with their core psychological needs of proficiency, self-sufficiency and feeling that one is in the right place, they feel inspired and driven. Employees form their own opinions on the organisation's support, which strengthens their desire to remain with the organisation (Engelbrecht & Samuel, 2019).

Perceived organisational support (POS) is defined as “the degree of employee’s belief in the value placed by the organisation on their inputs and how much the organisation cares about their well-being and the fulfillment of socio-emotional needs by the organisation” (Olowodunoye & Owolabi, 2019). POS is concerned with how much weight employees believe their contributions have and how much the company values their wellbeing while they are working (Engelbrecht & Samuel, 2019). Higher levels of employment are associated with POS performance, proactive and positive behavioural outcomes for both employees and the organisation (Maan, Abid, Butt, Ashfaq & Ahmed, 2020). Hereafter, within the organisation POS is influenced by a variety of aspects. The aspects include financial or tangible aspects (salary increase, subsidies and bonus) and non-financial aspects (praise and good comments). Employees do not only perceive an organisation to be supportive in terms of monetary value only (Kailin, 2019). admiration, acknowledgment, and accomplishment and disputes (Ibitomi et al., 2022).

4.2.4 Organisational trust

Promoting employee’s trust in an organisation is the ideal goal of any employer (Yu, Mai, Tsai & Dai, 2018). In the age of the 4th industrial revolution, satisfying the higher order needs of employees is a priority and is primarily realised through establishing rapport and a strong relationship of trust amongst the employees and the organisation (Jena, Pradhan & Panigrahy, 2017). Due to changes in the social, economic and political climate, globalisation has made organisations introduce numerous changes more rapidly than ever, and employees are expected to adapt within a shorter period while integrating the change into their responsibilities to ensure organisational goal achievement and continuity (Sinambela, Darmawan & Mendrika, 2022). Employees' readiness to be open and susceptible to top management is referred to as organisational trust (Qin & Men, 2022). A party's readiness to be exposed to the activities of another party because they have faith in the party to take a certain action that is central to their relationship, or because they have no way of monitoring or controlling them, is another definition of organisational trust (Qin & Men, 2022).

The belief of employees and stakeholders, that the organisation is making an effort to fulfil their agreements, whether overt or covert is organisational trust. Trust promotes organisational relationships and is essential to forging enduring relationships with stakeholders and employees that add value, but is an essential component to strengthen internal relations (Gider, Akdere & Top, 2019). Trust may be considered as a sort of social capital that lowers transaction costs, fosters spontaneous interaction among members, and makes it easier to defend against organisational authority in the appropriate ways (Ozmen, 2018).

Managerial trust comprises being available, capable, reliable, discreet, honest, loyal, open, capable of keeping promises and receptive (Ozmen, 2018). Any barriers to lack of organisational trust could cause and encourage stress related illnesses, doubt with regard to organisational policies and systems, employee dignity and commitment (Rabelo, Holland & Cortina, 2019). Trust is significant in building a working relationship between the manager and employee, and has a significant impact on whether an employee will view the workplace favourably (Men, Qin & Jin, 2022). A lack of openness, unfairness, inconsistencies and unpredictable actions could diminish trust which will lead to employees feeling unsafe due to situations that are unclear and unpredictable (Margolis, 2019).

4.2.5 Work-life balance

Subsequent to changes in the workplace, the need for balance between an employee's work and personal life should be priority (Oludayo , Falola, Obianuju & Demilade, 2018). Employees regard work which is defined as a deliberate human activity that entails physical or mental labour and is not only done for fun but also for monetary or symbolic purposes. A work-life balance in organisations concerns employees' interaction with work related activities be it social or personal development (Oludayo *et al.*, 2018). This enables an organisation to create a productive work culture where signs of work-life conflict are minimised and effectively managed, likewise, work-life balance is attained where there are common benefits for employees and the organisation (Mesimo-Ogunsanya, 2017).

An individual having enough autonomy and control over one's schedule and place of employment to allow one to fulfil obligations both inside and outside of paid employment is referred to as work-life balance (Wilkinson, Tomlinson & Gardiner, 2018). Additionally, work-life balance increases autonomy and strengthen employees' perception they work for a fair company that values them. When their subordinates practice work-life balance, managers may be more likely to approve of or create informal agreements to help their staff balance their duties at work and at home (McDowall & Kinman, 2018). To employees this will be a sign that indicates that the company appreciates assisting employees in meeting their obligations (McDowall & Kinman, 2018). In the work environment, the amount of time spent working and when it is done are important factors that affect how long employees are exposed to various working circumstances as well as how much time is available for rest, pleasure, or other personal obligations (Brauner, Wohrmann, Frank & Michel, 2019). All employees should be concerned with the ability to balance work and personal life at different positions in the administrative environment. Employees who are single, have a young child or children with special needs and are experiencing problems with balancing work with personal lives are examples of work-life balance to be addressed (Wilkinson, Tomlinson & Gardiner, 2018). Work-life balance is a vital aspect of the lives of all employees in the public sector. Non-existence of work-life balance could cripple the financial standing of the organisation. On the contrary, the introduction of work-life policies could improve financial performance, competitive advantage and survival of the organisation (Wolor, Kurnianti, Zahra & Martono, 2020).

4.4 Work engagement challenges

Work engagement challenges may deny the employee off vigour, dedication, and absorption and may lead to lower performance, job dissatisfaction and counterproductivity across sectors (Borst, 2018). Employee neglect and the inability of having a thorough understanding of the idea of work engagement inside an organisation and the subsequent benefits, may pose a threat to an organisation (Muhamad *et al.*, 2023). Public sector managers must have an in-depth

understanding of factors that may impede work engagement and avoid operating with inaccurate assumptions of what they think employees prefer in order to be productive, otherwise this may result in organisational ineffectiveness (Knight, Patterson & Dawson, 2017). Because each public servant has a unique personality and may find it challenging to function in a variety of organisational situations, these personality differences may negatively affect how engaged they are at work. Public servants mentioned that senior management in the public sector do not communicate and are highly engaged with their own work and meeting their own job targets, whilst the subordinates are least involved or engaged with the organisation (Garg, Dar & Mishra, 2018). It is mentioned that the problem could be attributed to a lack of appropriate procedures for retaining employees and identifying the true drivers of job satisfaction that encourage employee engagement at lower levels (Sayeeswari & Krishnaraj, 2022:6721).

5. Research objectives

The primary objective of this study is to explore the demographic factors that influence work engagement in the South African public sector, focusing on employees' age, gender, highest qualifications and duration of service at their current employer.

The specific objectives of the study are to:

- Determine if there are significant differences relating to age and work engagement.
- Determine if there are significant differences relating to gender and work engagement.
- Determine if there are significant differences relating to highest qualification and work engagement.
- Determine if there are significant differences relating to duration of service and work engagement.

6. Hypotheses development

In this study, four research hypotheses were developed and investigated. The development of each of these hypotheses is discussed next.

H1: There are significant differences relating to age and work engagement.

H2: There are no significant differences relating to gender and work engagement.

H3: There are no significant differences relating to highest qualification and work engagement.

H4: There are no significant differences relating to duration of service and work engagement.

According to a 2019 study, there is a connection between age and work engagement (Hakanen, Ropponen, Schaufeli & De Witte, 2019). In affirmation, a study conducted in 2019, confirms that significant differences relating to gender and work engagement do exist (Tsaur, Hsu & Lin, 2019). Another study found significant differences between highest qualification and work engagement (Hakanen *et al.*, 2019). Further, Contrary to this study a study conducted in the Czech Republic shows that there is a significant relationship between duration of service and work engagement (Hinzmann, Rašticová & Šácha, 2019).

7. Research methods

Quantitative research methodology was applied. For the study purpose, existing questionnaires related to work engagement was adapted and used. To ensure maximum respondent participation, data were collected from the sample group via online questionnaires as well as paper-based questionnaires delivered to the respondents by a fieldworker. The statistical data gathered were then analysed and conclusions were drawn. Frequencies were used to show distribution of responses through descriptive methods.

7.1 Population

The inclusion criteria involved permanently employed employees in the public sector departments. The respondents comprised administrators, secretaries, executive secretaries and personal assistants. Managers such as directors, deputy directors, assistant directors, heads of department and supervisors also participated. Altogether, the study comprised $N1 = 15\,203$ administrators and $N2 = 2473$ managers.

7.2 Sampling

The study employed nonprobability convenience sampling to collect information from participants who were easily accessible to the researcher. Only permanent employees employed in the selected public sector national departments participated in this study. The study excluded employees who were employed temporarily and on a part-time basis. The sample was representative of the population. With the total population of $N1 = 15\,203$ administrators and $N2 = 2473$ managers, the researcher used the minimum sample size of $n1 = 375$ for administrators and $n2 = 333$ for managers, calculated according to Raosoft® calculator (Raosoft® Inc. USA), with a 5% margin of error and a 95% confidence interval ($p \geq 0.5$). The demographic profiling of the respondents is presented in Table 1.

8. Research approach and design

The quantitative approach was deemed the most suitable for this research, as it allows for the quantification and analysis of variables, as well as the assessment of relationships between different variables (Apuke, 2017). Research design is a map indicating how the study is carried out and the method used to empower the researcher in meeting the study objectives (Abutabenjeh & Jaradat, 2018).

8.1 Research instrument

To assess work engagement, the study utilised the Utrecht Work Engagement Scale, Short Version (UWES-9) as adapted from Schaufeli, Bakker and Salanova (2006). The instrument includes three theoretically grounded subdimensions: Vigour (3 items), Dedication (3 items) and Absorption (3 items) in the questionnaire. All items were scored on a four-point Likert scale ranging from 1 = strongly disagree to 4 = strongly agree. Consistent with standard UWES scoring procedures, subscale scores were computed by averaging the items within each dimension, while the overall work engagement score was calculated as the mean of all nine items. Cronbach's alpha coefficients were calculated for each of the three UWES-9 subscales to assess internal consistency. All subscales demonstrated acceptable reliability, with alpha values exceeding the recommended cutoff of 0.70. (Klok & Conners, 2019).

8.2 Data collection procedure

A survey research design was used for data collection. An online questionnaire was administered to gather consistent data from all participants in a sample from the South African public sector. The study included a total of 423 respondents, with 283 administrators $n1$ and 140 managers $n2$.

9 Validity and reliability

Validity refers to the extent to which the research findings accurately measure what the study aims to assess (Sürücü & Maslakçi, 2020b:296). The content validity of the survey was improved by having a subject matter expert in statistics review the questions (Rothmund et al., 2023:2). To ensure construct validity, a factor analysis was conducted. Prior to data collection,

a pilot study was carried out to confirm the instrument's content validity. The purpose of the pilot study was to assess the effectiveness of the research tool and identify any issues that could compromise the reliability and validity of the results (Ahmad & Ahmad, 2018). During the pilot study, 22 questionnaires were tested by administrators to ensure potential errors and obstacles were identified and corrected before the actual data collection began. Convenience sampling was used for the pilot study.

Reliability refers to the consistency of study findings, ensuring they can be replicated and produce the same results within the population being studied (Sürücü & Maslakçi, 2020a:2707). The reliability of the responses was confirmed by calculating internal consistency using Cronbach's alpha coefficient. This coefficient assesses the reliability of multiple items in a survey, ensuring they consistently measure the same characteristic. A Cronbach's alpha value of 0.7 or above is considered acceptable (Amirrudin, Nasution & Supahar, 2021).

10. Data analysis

Descriptive and inferential statistics were employed to examine the data and gain insights into the research variables. Numeric data responses were first plotted on the Microsoft Excel spreadsheet and later analysed by using Statistical Package for the Social Sciences (SPSS 28). Correlation analysis was applied to measure the relationships among the variables, and the value of the Pearson correlation coefficient was computed. For the purpose of this study, the one-way ANOVA conducted to determine whether work engagement differed significantly across demographic categories produced a statistically significant result $p = 0.023$). Because the p -value falls below the 0.05 significance level, this indicates that there are statistically significant differences between group means (Liu & Wang, 2021). However, the associated effect sizes were extremely small, suggesting that the magnitude of the differences between demographic groups was negligible. Post-hoc analysis using Tukey's HSD further showed that the statistically significant finding was driven by only minor differences between groups, while all other pairwise comparisons were non-significant. Examination of the 95% confidence intervals revealed narrow ranges centred around very small mean differences, reinforcing the conclusion that the observed statistical significance does not translate into meaningful practical differences among demographic groups.

To provide a more comprehensive understanding of the influence of demographic characteristics, a multivariate analysis was conducted using an Ordinary Least Squares (OLS) regression model and, alternatively, a Generalised Linear Model (GLM). These models allowed the demographic variables to be evaluated simultaneously. Consistent with the ANOVA results, certain demographic predictors reached statistical significance, but their standardised coefficients were small and the overall explanatory power of the model remained low. These findings demonstrate that demographic variables exert limited predictive influence on work engagement. Taken together, the ANOVA, post-hoc tests, confidence intervals, and multivariate models consistently indicate that although statistically significant differences were detected, the practical effect of demographic characteristics on work engagement is minimal and not substantively meaningful (Liu & Wang, 2021).

11. Ethical considerations

The Faculty of Management Sciences Research Ethics Committee of Tshwane University of Technology gave permission to conduct the study (Ref #: FCRE2019/FR/12/002-MS [2]). The researcher stated on the informed consent form that information obtained during the course of this study would be kept strictly confidential; the identity of the respondents and the department would not be revealed while the study was being conducted or

when the results were reported. To ensure anonymity, the researcher mentioned on the informed consent form that responses were completely anonymous and that no one outside the study panel would be able to associate any response with the respondent's department in any recognisable way. The rights of the respondents were also made clear on the informed consent form, namely that participation in the study was entirely voluntary and that respondents had the right to withdraw at any stage without any penalty or future disadvantage. The researcher adhered to the ethical principles of the Faculty of Management Sciences Human Research Ethics Committee of Tshwane University of Technology.

12. Results

In order to summarise, organise and clarify large numbers of data, descriptive and inferential statistics and analysis were used (Kaliyadan & Kulkarni, 2019:82). For the purpose of illustrating observations in the study, descriptive statistics was presented via graphs and tables in order to demonstrate percentages and frequencies. The response rate of 59.75% indicates moderate participation; however, this introduces the possibility of nonresponse bias, as nonparticipants may differ in systematic ways from those who responded. Although the final sample of 423 remains reasonably large, the reduction from the targeted 708 respondents decreases statistical power, potentially limiting the detection of smaller effects. Therefore, while the dataset is suitable for analysis, both nonresponse bias and reduced power should be acknowledged as methodological limitations (Ali et al., 2021).

12.1 Demographic profile

Section A lists the biographical information and a demographic profile of respondents. The biographical information relates to the respondent's age group, gender, position of employment, highest educational level and duration spent working for the present employer. The frequency distribution of the demographic factors is shown in Table 1 and provides the response frequencies and percentages. Section C, listed the items of work engagement.

Table 1. Demographics profiling of respondents

VARIABLE	FREQUENCY (N)	PERCENTAGE (%)	CUMULATIVE (%)
1. Age			
22-29 years	59	13.9	13.9
30-39 years	127	30.0	44.0
40-49 years	159	37.6	81.6
50 years or older	78	18.4	100.0
Total	423	100	
2. Gender			
Male	161	38.2	38.2
Female	261	61.8	100.0
Missing	1	0.2	

VARIABLE	FREQUENCY (N)	PERCENTAGE (%)	CUMULATIVE (%)
Total	423	100	
3. Administrative position			
Administrator	190	73.1	73.1
Secretary	23	8.8	81.9
Executive secretary	26	10.0	91.9
Personal assistant	21	8.1	100.0
Total	260	100	
4. Manager position			
Manager	26	17.8	17.8
Director	22	15.1	32.9
Deputy director	40	27.4	60.3
Assistant director	41	28.1	88.4
Head of department	4	2.7	91.1
Supervisor	13	8.9	100
Other (Q3)	14	3.3	
Other (Q4)	3	0.7	
Total	423	100	
5. Highest education qualification			
Grade 12/Matric	20	4.8	4.8
Certificate (1-year qualification)	14	3.3	8.1
Diploma (3-year qualification/N6)	96	22.9	31.0
Bachelor's/Advance diploma/BTech	156	37.2	68.3
Honours degree/Postgraduate diploma	76	18.1	86.4
Master's degree/MTech	52	12.4	98.8
Doctoral degree/DTech	5	1.2	100
Other	4	0.9	

VARIABLE	FREQUENCY (N)	PERCENTAGE (%)	CUMULATIVE (%)
Total	423	100	
6. Duration of service at current employer			
Less than 1 year	21	5.0	5.0
1-4 years	79	18.7	23.6
5-9 years	93	22.0	45.6
10-19 years	162	38.3	83.9
20-29 years	57	13.5	97.4
30 years or more	11	2.5	100.0
Total	423	100	

12.1.1 Age distribution

The respondents had to indicate their age in four categories: 22 - 29 years, 30 - 39 years, 40 - 49 years and 50 years or older. 37.6% aged 40 to 49 years old, and of the responders, 30.0% between 30 - 39 years, 18.4% represented the 50 and older age bracket, and 13.9% between 22 - 29 years of age. The results indicate that most of the survey individuals who participated from the public sector were between the ages of 40 and 49. The results were aligned with a study conducted in 2021 about improving work engagement in the South African military, where the majority of respondents, according to the data, age groups were between 30 - 39 and 40 - 49 (Shabane, 2021). The same comparisons were drawn from a study conducted in 2019 about corporate social responsibility of casinos in Gauteng, where the majority of active participants of the respondents were found within the age groups of 30 - 39 and 40 - 49 (Shai, 2019).

12.1.2 Gender distribution

The 38.2% of the respondents were males compared with the 61.8% females. The gender category shows that women made up the majority of the study's respondents. The results compare well with the results of a study carried out in 2021 that showed that in most quantitative studies, females participated more than their male counterparts (Lindqvist, Sendén & Renström, 2021). Furthermore, a study conducted in 2019, demonstrated that 54% of females and 46% males participated in most quantitative studies conducted in South Africa, specifically in the Gauteng province (Shai, 2019).

12.1.3 Administrative positions

The respondents had to indicate the administrative position in which they worked. Administrative positions illustrate that most of the responders were administrators at 73.1%, followed by those occupying the position of executive secretary at 10.0%. 8.8% accounted for the respondents occupying the position of a secretary and personal assistant represented 8.1%. The results perceive that the managers in the South African public sector receive support from administrators, contrary to an investigation that was carried out in the United Kingdom that

demonstrated that the public sector managers receive insufficient support from administrators (Cregård & Corin, 2019).

12.1.4 Managers positions

The respondents had to indicate the managerial position they occupied. The highest category of 28.1% were respondents occupying the position of assistant director, succeeded by 27.4% representing deputy directors. A total of 17.8% of respondents accounted for managers, followed by 15.1% that occupied the director portfolio, 8.9% was supervisors and 2.7% represented the head of departments. The results were aligned to a study conducted in 2019 in Nigeria, which indicates that the public sector was putting more efforts on career development of the young workforce by grooming, mentoring and examining their behavioural patterns and values in preparation for higher management positions (Egbuta & Akinlabi, 2019).

12.1.5 Highest education qualification

The respondents indicated their highest educational qualification. It is significant to note that the vast majority of respondents indicates that 91.9% possessed a diploma, degree, or postgraduate degree. Respondents with Grade 12/Matric (4.8%) and those with a Certificate (3.3%) represented a minority. It was concluded that the majority of respondents who completed the questionnaire had tertiary qualifications and understood the objectives of the questionnaire and the research. This could prove that the public sector was taking corrective measures and has assumed the role of seriously considering qualifications when employing staff. The improvement can be compared to the results demonstrated by a study conducted in the public sector in 2020 which showed a lower percentage of 74.3% in terms of respondents possessing a diploma, degree, or postgraduate degree (Mokoena, 2020).

12.1.6 Duration of service at the current employer

The respondents had to indicate their years of service at the current employer. Of interest to note was that 54.3% (38.3%+13.5%+2.5%) of the respondents had ten or more years of employment. A figure of 45.7% (5%+18.7%+22.0%) of the respondents were employed for nine or less years. The inclusion criteria did not depend on the number of years in service, but on the fact that only permanent employees in the selected public sector national departments participated in this study. The study excluded employees who were employed temporarily and on a part time basis. This was an indication that the majority of experienced employees remain in the employ of the public sector for an extended period, most of the time more than a decade. In contrast was a study conducted in 2021 indicating that the employees in the 21st century are changing and continually adjusting, with the older generation gradually going on retirement and the younger groups getting employed in the public sector and beginning their professional careers (Muzondiwa, 2021).

A reliability analysis was performed on the work engagement factors. Results indicate that the first factor was clearly dominant, with only 7 % explained by the second factor. The factors were not clearly separated with no common theme being evident, therefore it was suggested that work engagement be used as a single factor. Table 2 illustrates that work engagement had a satisfactory Cronbach's alpha of 0.932 (Sinaga, Gaol & Ichsan, 2021).

Table 2. *Reliability analysis of work engagement factor*

CRONBACH'S ALPHA	CRONBACH'S ALPHA BASED ON STANDARDISED ITEMS	N OF ITEMS
0.932	0.933	18

Table 3 demonstrates that the inter-Item correlations' mean value was 0.434. and within an acceptable range of between the levels of 0.1 and 0.5, meaning that the result was reliable (Clark & Watson, 1995; Abubakar, Wimmer, Bereznicki, Dwan, Black, Bezabhe & Peterson, 2020).

Table 3. *Summary of inter-item correlations of work engagement factor*

	MEAN	MINIMUM	MAXIMUM	RANGE	MAXIMUM/ MINIMUM	VARIANCE	N OF ITEMS
Inter-Item Correlations	0.434	0.206	0.875	0.669	4.253	0.014	18

Table 4 depicts the total statistical analysis of work engagement.

Table 4. *Summary of Item-total statistics analysis of work engagement*

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	SQUARED MULTIPLE CORRELATION	CRONBACH'S ALPHA IF ITEM DELETED
1. At my job, I feel active.	48.50	61.786	0.623	0.550	0.928
2. I find the work that I do full of meaning.	48.45	60.933	0.722	0.808	0.926
3. I find the work that I do full of purpose.	48.43	61.532	0.682	0.803	0.927
4. Time flies when I am working.	48.51	60.783	0.676	0.514	0.927
5. At my job, I feel energised.	48.70	60.205	0.698	0.613	0.926
6. I am enthusiastic about my job.	48.51	59.796	0.778	0.676	0.925
7. When I am working, I forget everything else around me.	48.78	61.529	0.558	0.399	0.930
8. My job inspires me.	48.64	59.009	0.783	0.691	0.924
9. When I get up in the morning, I feel like going to work.	48.83	59.258	0.676	0.571	0.927

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	SQUARED MULTIPLE CORRELATION	CRONBACH'S ALPHA IF ITEM DELETED
10. I feel happy when I am working intensely.	48.60	61.331	0.631	0.469	0.928
11. I am proud of the work that I do.	48.43	60.700	0.700	0.569	0.926
12. I am immersed (absorbed) in my work.	48.69	60.724	0.691	0.551	0.927
13. I can continue working for very long periods at a time.	48.67	59.925	0.693	0.527	0.926
14. To me, my job is challenging.	48.88	61.589	0.495	0.328	0.931
15. I get carried away when I am working.	48.83	61.782	0.559	0.406	0.930
16. At my job, I feel mentally and physically resilient.	48.73	61.798	0.592	0.439	0.929
17. It is difficult to detach myself from my job.	49.04	62.844	0.447	0.281	0.932
18. At my work, I always persevere, even when things do not go well.	48.46	63.422	0.439	0.325	0.932

Table 4 shows the adjusted item-total score relationships fluctuated between a high of 0.783 to a low of 0.439. Table 4 shows the adjusted item-total score relationships and implies that one item was in relation to the results on all other scale items (Maroufizadeh, Riazi, Lotfollahi, Samani & Amini, 2019).

13. T-Test ANOVA analysis

The t-test and ANOVA intend to observe whether group means vary from one another. Where two groups are compared the t-test was used, however, where more than two groups were compared ANOVA can be used (Kang, 2021). In other words, the t-test is a method that establishes whether two samples were statistically diverse from each other, although ANOVA determines whether three or more samples were statistically different from each other. Both methods look at the difference in means distributions across groups, yet the methods used to determine the statistical implication was different (Mishra, Singh, Pandey, Mishra & Pandey, 2019).

Demographically, different groups in relation to gender and age were compared in terms of perceptions using t-tests and ANOVAs to establish if there were demographic differences. The results of gender are demonstrated in Tables 5 – 6.

Table 5. *Gender*

GROUP STATISTICS					
STATE YOUR GENDER		N	MEAN	STD. DEVIATION	STD. ERROR MEAN
Work engagement	Male	161	2.8626	0.42858	0.03378
	Female	259	2.8628	0.47574	0.02956

Table 6. Independent samples t-test: Gender

INDEPENDENT SAMPLE TEST											
		LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS							
		F	SIG.	T	DF	SIGNIFICANCE		MEAN DIFFERENCE	STD. ERROR DIFFERENCE	95% CONFIDENCE INTERVAL OF THE DIFFERENCE	
						ONE-SIDED P	TWO-SIDED P			LOWER	UPPER
Work engagement	Equal variances assumed	2.616	0.107	-0.003	418	0.499	0.997	-0.00016	0.04599	-0.09056	0.09024
	Equal variances not assumed			-0.004	365.859	0.499	0.997	-0.00016	0.04489	-0.08843	0.08811
	Equal variances not assumed			-0.948	346.775	0.172	0.344	-0.02607	0.02750	-0.08016	0.02803

The mean scores and standard deviations of the components were displayed in Tables 5 and 6 where male and female perceptions were compared using an independent sample t-test. The Tables depicted that there were no significant differences between genders since Sig values were all >0.05.

Table 7 displays the correlations between qualification and length of service.

Table 7. *Correlations of qualifications and length of service with factors*

			STATE YOUR HIGHEST QUALIFICATION	HOW LONG YOU HAVE BEEN WORKING IN YOUR CURRENT DEPARTMENT	WORK ENGAGE- MENT
Spearman's rho	State your highest qualification	Correlation Coefficient	--		
		Sig. (2-tailed)			
	How long have you been working in your current department?	Correlation Coefficient	-0.005	--	
		Sig. (2-tailed)	0.914		
	Work engagement	Correlation Coefficient	0.030	-0.016	--
		Sig. (2-tailed)	0.535	0.750	
		Sig. (2-tailed)	0.668	0.628	0.000

** Correlation is significant at the 0.01 level (2-tailed).

Table 7 demonstrates that neither highest qualification nor length of service correlates significantly with any of the factors, all the Sig values were above 0.05. Therefore, it was evident that there were no existing correlations. Factors highlighted in dark grey were not relevant for this analysis, the focus was only on highest qualification and length of service.

Tables 8 - 10 illustrates the results pertaining to age.

Table 8. Descriptive statistics: mean score for the age groups

DESCRIPTIVES									
		N	MEAN	STD. DEVIATION	STD. ERROR	95% CONFIDENCE INTERVAL FOR MEAN		MINIMUM	MAXIMUM
						LOWER BOUND	UPPER BOUND		
Work engagement	22 - 29 years	59	2.8450	0.47763	0.06218	2.7206	2.9695	1.00	4.00
	30 - 39 years	126	2.8238	0.50018	0.04456	2.7356	2.9120	1.33	3.94
	40 - 49 years	158	2.8820	0.43340	0.03448	2.8139	2.9501	1.56	3.94
	50 + years	78	2.9088	0.42385	0.04799	2.8133	3.0044	1.11	3.94
	Total	421	2.8644	0.45841	0.02234	2.8205	2.9083	1.00	4.00

Table 9. One-way ANOVA per age groups

ANOVA						
		SUM SQUARES	OF DF	MEAN SQUARE	F	SIG.
Work engagement	Between Groups	1.283	3	0.428	3.199	0.023
	Within Groups	55.994	419	0.134		
	Total	57.276	422			

Tables 8 - 9 depict the results of the t-test and ANOVA for age groups. The one-way ANOVA test was applied to compare age groups on work engagement to establish whether there was a considerable age difference. The results in Table 9 does not shows a significant difference ($p < 0.05$) between age and work engagement (0.023). The results suggest that age does have a important role in the observation of the importance of work engagement.

The effect size for ANOVA results are depicted in Table 10.

Table 10. Effect size for ANOVA

ANOVA EFFECT SIZES ^{A,B}				
		POINT ESTIMATE	95% CONFIDENCE INTERVAL	
			LOWER	UPPER
Work engagement	Eta-squared	0.005	0.000	0.019
	Epsilon-squared	-0.002	-0.007	0.012
	Omega-squared Fixed-effect	-0.002	-0.007	0.012
	Omega-squared Random-effect	-0.001	-0.002	0.004
	Omega-squared Fixed-effect	0.014	-0.007	0.042

A. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

B. Negative but less biased estimates are retained, not rounded to zero.

To interpret and quantify the estimated Eta squared effect sizes for ANOVA, the study has adopted Cohen's D effect sizes illustrated as 0.20 for small, 0.50 for medium, and 0.80 for large respectively (Brydges, 2019:1). These results demonstrate that the effect of the mentioned scales on age was not powerful.

14. Descriptive statistics (mean score for the age groups)

According to Table 8, Ages differed significantly from **work engagement**. For ages 22 – 29 the mean was 2.8450; ages 30 - 39 the mean was 2.8238; ages 40 – 49 the mean was 2.8820 and for ages 50+ the mean was 2.9088. Ages 50+ had a significantly higher mean more than the other three age groups, and suggested that this age group was more likely to have a positive awareness of the role of work engagement. The effect size was 0.005.

15. Discussion of findings

Numerous studies have been conducted worldwide in relation to work engagement, but in most of them, the focus was not on examining the relationship of this variable with age, gender, highest education qualification and duration of service specifically in the public sector (Ozdoba et al., 2022). The bulk of the research was related to other sectors globally, with limited attention directed to the public sector. Later in 2025, in the South African public sector context, one similar study could be found to benchmark against this research (Naiyananont & Smuthranond, 2017). The study examined the relationship between ordinal demographic

factors such as age, years of service, and educational qualifications and both work engagement (WE) and performance management systems (PMS) within national departments, and found that demographic groupings were not significantly linked to levels of work engagement (Maake, 2025). Contrary to the results of this study which indicates that age is significantly associated with work engagement, whereas no significant differences were observed between work engagement and gender, highest qualification, or length of service with the current employer.

16. Practical Implications

The results indicate that age shows a measurable relationship with work engagement, whereas gender, years of service, and educational qualifications do not demonstrate any meaningful influence. Although the effect of age is statistically detectable, the very small effect size suggests that demographic variables are generally weak predictors of engagement; therefore, claims about their impact should be tempered. In practical terms, while age, or tenure-related initiatives may offer limited value, greater emphasis should be placed on factors with stronger and more consistent effects, such as leadership support, organisational culture, job resources, and career development opportunities, which are more likely to enhance engagement across all employee groups.

Early-career employees (≤ 35 years) may benefit from mentorship programs, structured onboarding, and skills development workshops to enhance engagement and career growth. Mid-career employees (36–50 years) can be supported through leadership development, recognition programs, and cross-functional project opportunities, while late-career employees (> 50 years) may require flexible work arrangements, phased retirement options, and knowledge-sharing initiatives to leverage their experience. Implementation should include regular age-segmented surveys, tailored communication and feedback channels, and performance management practices that reflect the distinct needs of each career stage.

To strengthen the study's validity, potential common-method bias should be addressed by incorporating multi-source data, temporally separating predictor and outcome measurements, and ensuring anonymity and confidentiality in surveys. Missing data should be handled transparently using appropriate imputation methods, such as mean substitution or multiple imputation, and sensitivity analyses should be conducted to confirm that results are robust. Together, these measures provide actionable, age-sensitive strategies to enhance engagement while maintaining methodological rigor (Butts & Rich, 2018).

17. Limitations of the study

The study was conducted within the South African public sector, which may have unique cultural, economic, and organisational contexts. The findings are not applicable to other countries or sectors with different work environments, even though the concept of work engagement is broadly relevant. Since the study used a survey-based method to collect data at a single point in time, it is cross-sectional in nature. This limits the ability to draw conclusions about causal relationships between demographic factors and work engagement. Longitudinal studies could provide a better understanding of how these relationships evolve over time.

18. Recommendations

The findings from this study may be used to provide strategic direction and guidance for enhancing work engagement in the public sector. Given the absence of significant differences related to gender, highest qualification and duration of service in the study, public sector organisations should ensure that their work engagement programs are inclusive and do not unintentionally favour one demographic group over another. It is important to create a supportive environment where all employees feel valued and engaged, regardless of gender, education, or length of service.

19. Future research

In future research, a comparative study should be conducted in South Africa to benchmark successful strategies for the management of work engagement in administrative environments. Future research should also explore other factors that may influence work engagement, such as organizational culture, leadership styles, and work environment. Understanding the full range of variables that contribute to work engagement will help organisations develop more effective strategies for enhancing employee performance. While the current study used a quantitative approach, incorporating qualitative research methods, such as interviews or focus groups, could provide richer insights into how demographic factors influence work engagement. Employees may offer valuable perspectives on the specific barriers or motivators that affect their engagement at work.

20. Conclusion

The purpose of this article was to determine, whether there were statistically significant differences between work engagement based on age, gender, highest education qualification and duration of service at current employer. The results indicate that age is strongly associated with work engagement, while no significant differences were observed in work engagement based on gender, highest qualification, or length of service with the current employer.

The study highlights that age plays a significant role in influencing work engagement, suggesting that different age groups may have distinct levels of engagement in the workplace. However, the findings also indicate that other demographic factors, such as gender, highest qualification, and length of service with the current employer, do not have a significant impact on work engagement. These results emphasise the importance of considering age-specific strategies to enhance employee engagement, while also suggesting that other demographic variables may not need to be prioritised when designing work engagement programs, but can be improved. Further research could explore other factors that may contribute to work engagement, offering a more comprehensive understanding of the dynamics in the public sector.

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