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Does age affect job and organisational engagement and employee performance in Zimbabwe's health sector?

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Orientation: The ageing healthcare workforce has been an issue of concern in the health sector over the recent years. This unique demographic challenge poses numerous challenges like knowledge loss and possible skill shortages.

Research purpose: This analysis seeks to examine the association between job engagement (JE), organisational engagement (OE) and employee performance (EP) of healthcare workers in Manicaland Province in Zimbabwe. Further, it assesses the moderating role of age on the association between JE and EP and OE and EP.

Motivation for the study: There is restricted research on the relationship between JE, OE and EP, as well as on the moderating role of age on the association between JE and EP and OE and EP of healthcare workers.

Research approach/design and method: The study's approach is quantitative. Employing the Utrecht Work Engagement Scale-17, Job and Organisation Scales and Individual Work Performance Questionnaire, the data were collected from 235 healthcare workers. Structural equation modelling was implemented to examine the relationships of interest.

Main findings: Job engagement positively impacts OE, and JE positively influences EP. The positive impact of OE on EP is insignificant. Age has an insignificant moderating effect on the relationship between JE and EP and OE and EP.

Practical/managerial implications: Healthcare institutions and policymakers should enforce robust intervention strategies that support JE, OE and EP.

Contribution/value-add: This research immensely contributes to the existing literature on the relationship between JE, OE and EP.

Keywords: age; job engagement; organisational engagement; employee performance; structural equation modelling; Zimbabwe; health sector.

Introduction

A five-generation workforce is now a reality. There are five generations in the workplace, that is, traditionalists, baby boomers, Generation X, millennials and Generation Z (George et al., 2024; McKee-Ryan, 2021). According to McKee-Ryan (2021), Generation Z comprises the newest cohort to enter the workforce, and they are not content to be the Millennials' younger siblings. The workforce is comprised of those born between 1997 and 2012. It is imperative to note that Generation Z's identity is shaped by being the first generation to come into a post-September 11 world, by the effects of the Great Recession on their parents' and families' economic well-being, by the proliferation of technology and social media (George et al., 2024), by the spectre of school shootings and violence and by the current period of reckoning with past and present racial injustice.

The defining moment for this generation, however, is entering adulthood during or in the wake of a global pandemic that significantly changed both education and industry (Vehkalahti et al., 2021). The confluence of this new generation of career entrants, the dramatically shifting job forms and careers (e.g. contingent work and the gig economy) (McKee-Ryan, 2021), and the post-COVID landscape of work provides a rich and compelling research agenda for management and human resource management as Generation Z enters the

workplace and progresses through their careers. These classes cover everybody between the ages of 16 years and 75 years. Interestingly, the baby boomers' generation, born 20 years after World War II, are now reaching retirement age. Hence, we are witnessing an international crisis of global ageing. One of the main challenges countries face is dealing with ageism in their workforces. This profound challenge is not unique to the health sector but has a significant workforce effect because it is a service sector that depends profoundly on person-power instead of technology (Graham & Duffield, 2010). Most countries face a shortage of healthcare workers because of ageing (Vicarelli & Pavolini, 2015). The upsurge in the partaking of ageing employees pushes institutions to address the age-linked rise in chronic health conditions and impairments, resulting in amplified disability rates and condensed workability (Galanaki et al., 2019; Rinsky-Halivni et al., 2022).

The Zimbabwean health sector is not spared from this challenge of an ageing workforce. In Zimbabwe, this problem is magnified by the pressing challenge of migration of health workers to greener pastures because of economic and political meltdowns resulting in meagre salaries and poor working conditions (Chikanda, 2024). The author further articulated that Zimbabwe is facing a severe shortage of health workers. The situation has deteriorated to the extent that the density of health workers in the country currently falls below the World Health Organization minimum threshold needed to ensure adequate coverage of the country's primary healthcare needs (Chikanda, 2024).

Employee age is connected to job engagement (JE), organisational engagement (OE) and employee performance (EP). Galanaki et al. (2019) postulated that ageing demographics had become one of the most pressing contextual factors that challenge global Human Resources Management (HRM) policies and practices. This is unsurprising because age-related needs and preferences affect younger and older employees' responses to HRM policies (Stirpe et al., 2018). Employees of different ages reciprocate differently to HRM policies and practices because their perception of what has the highest utility evolves over their lifespan. For instance, some studies found that older workers may experience more positive outcomes in their jobs because of their more incredible experience, wisdom and emotional maturity (Hall et al., 2018; Veth et al., 2019), while others discovered that older workers may experience more negative outcomes because of age-related declines in physical and cognitive abilities (Pahos & Galanaki, 2020; Jones & Smith, 2020).

The country's health sector faces a plethora of challenges such as a shortage of skilled professionals and healthcare staff, high demographic maldistribution, skills imbalance, poor retention, brain drain and low productivity of healthcare workers (Chirenje et al., 2019). It is in this light that assessing the connection between JE, OE and EP is vital. Engagement is a crucial driver of business success (Maryati & Astuti, 2022), involving JE and OE. Job engagement is described as the individual's role within the company, the part they play and how motivated and committed they are to this role and its position within the business hierarchy (Abu Khalaf et al., 2019). On the other hand, OE refers to the employee's emotional commitment to the organisation and its goals (Chen & Zhang, 2019). Job engagement focusses solely on the individual, while OE casts a broader net and requires commitment and dedication to the cause and the chance to see the bigger picture (Burnett & Lisk, 2019). This indicates that JE and OE are intertwined. Saks et al. (2022) discovered that organisation engagement and JE are correlated. Expressly, several studies have indicated that organisation engagement and JE are positively correlated ("Miracle" Qi et al., 2018; Suhartanto & Brien, 2018). Further, existing literature has indicated that both JE and OE have a positive influence on EP (Anitha, 2014; Rabuana & Yanuar, 2023).

Employee performance is described as sociable actions, behaviour and outcomes that employees engage in or bring about that are linked with and contribute to organisational goals (Blaique et al., 2022). Thus, it is behaviour consistent with role expectations and contributes to organisational performance. These definitions indicate that EP has behavioural and outcome aspects (Chang & Chen, 2018). Conceptually, EP is discussed and researched in three dimensions namely task performance, contextual performance and counterproductive work behaviour (Koopmans et al., 2001; Sackett & Lievens, 2008).

Although JE, OE and EP are critical facets of sustainable HRM, there is a need to research the link between them considering the Zimbabwean health sector. The ageing demographics have become one of the most pressing contextual factors that challenge HRM policies and practices in the Zimbabwean health sector. Thus, the Zimbabwean health sector has suffered from high demographic maldistribution, skills imbalance, poor retention, brain drain and low productivity of healthcare workers (Chirenje et al., 2019). Age-related needs and preferences adversely affect younger and older employees' responses to HRM policies. Employees of different ages in the health sector reciprocate differently to HRM policies and practices because their perception of what has the highest utility evolves over the lifespan. Therefore, the greying and de-juvenisation of the labour market (Galanaki et al., 2019) places pressure on employers, managers and supervisors to seriously reconsider their organisational policies and practices and to develop new strategies for the management of an ageing workforce (Mcllveen et al., 2021).

Moreover, the moderating role of age on the association between JE and EP and OE and EP of healthcare workers is yet to be analysed. Thus, this analysis seeks to examine the association between JE, OE and EP of healthcare workers in Manicaland Province in Zimbabwe. Further, it assesses the moderating role of age on the association between JE and EP

and OE and EP. Given that Manicaland has suffered from high demographic maldistribution, skills imbalance, poor retention, brain drain and low productivity of healthcare workers (Chirenje et al., 2019), assessing the connection between JE, OE and EP is vital.

The rest of the article is organised as follows. The 'Literature review and hypotheses development' section provides a review of the literature and develops the hypotheses. The 'Method' section presents the methodology implemented in this study. Results are outlined in the 'Results' section, and the 'Discussion' section analyses those results. Finally, the 'Conclusions' section summarises the study.

Literature review and hypotheses development

Research objectives

- To find the relationship between JE and OE of the healthcare workers in Manicaland Province.
- To determine the relationship between JE and EP of the healthcare workers in Manicaland Province.
- To examine how OE affects EP of the healthcare workers in Manicaland Province.
- To assess if age moderates the relationship between JE and EP of the healthcare workers in Manicaland Province.
- To discover if age moderates the relationship between OE and EP of the healthcare workers in Manicaland Province.

Theoretical framework

Employee engagement model

The 3 Engines of Employee Engagement model was developed by Schaufeli et al. (2002). Engagement is a positive, satisfying, work-connected condition of mind characterised by dedication, vigour and absorption, the three main dimensions of engagement (Schaufeli, 2014; Schaufeli et al., 2002). It is not a momentary and explicit state but rather a more tenacious and pervasive emotional and cognitive state that is not fixated on any specific item, event, person or behaviour (Schaufeli et al., 2002). Vigour is personified by elevated energy and mental resilience while working, the inclination to invest effort in one's work and perseverance, even in the face of challenges (Schaufeli et al., 2002). Bakker and Demerouti (2008) opined that vigour is characterised not just by the willingness, but the physical energy to go the extra mile, known as discretionary effort. Dedication involves being intensely involved in one's work and experiencing a feeling of enthusiasm, significance, pride, stimulation and challenge (Bakker et al., 2021; Schaufeli et al., 2002). Absorption relates to being entirely concentrated and happily engrossed in one's work. The goal is not to finish work as soon as possible but to do it efficiently and effectively (Schaufeli et al., 2002). Fundamentally, when employees experience greater vigour, dedication and absorption levels in their work, they are more likely to be engaged, perform better and contribute positively to the organisation (Bakker et al., 2021).

The employee engagement model assists in analysing the two types of employee engagement: job engagement and OE (Saks et al., 2022). There is a positive relationship between JE and OE in the employee engagement model (Basinska & Daderman, 2019). The model helps to predict performance and improve engagement in the work area (Schaufeli et al., 2002). Also, the model is simple to apply and gives the researcher a framework to have motivating conversations with employees about JE (how connected a worker is with his or her work) and OE (how connected the worker is to his or her organisation as a whole (Bakker & Demerouti, 2008). Further, applying this employee engagement model gives an insight into both JE and OE and their effect on EP. Organisations that can turn advancing worker age into an asset could gain a competitive advantage. Muposha (2023) affirms that as the talent market has shrunk in the Zimbabwean health sector context because of the migration of health personnel to the United Kingdom, the shift has been on the older workforce. Thus, as the market for key personnel has grown more competitive, health institutions often find it valuable to keep older workers on the job rather than replace them with younger ones. Scholars (Connell et al., 2024) show that older workers represent a largely untapped opportunity as age is viewed as an advantage in organisations. It can therefore be noted that health sector organisations are beginning to focus on this talent pool as a competitive advantage. Proactive organisations are tapping into the older talent pool by extending their career models, creating new development paths (Fuller et al., 2021) and inventing roles to accommodate workers in their 50s, 60s and 70s.

The older labour pool represents a proven, committed and diverse set of workers.

Conceptual framework

Figure 1 presents a conceptual framework that connects the variables of interest in a sequence of structural associations. The authors in this study developed this conceptual framework in the light of the research's constructs, which

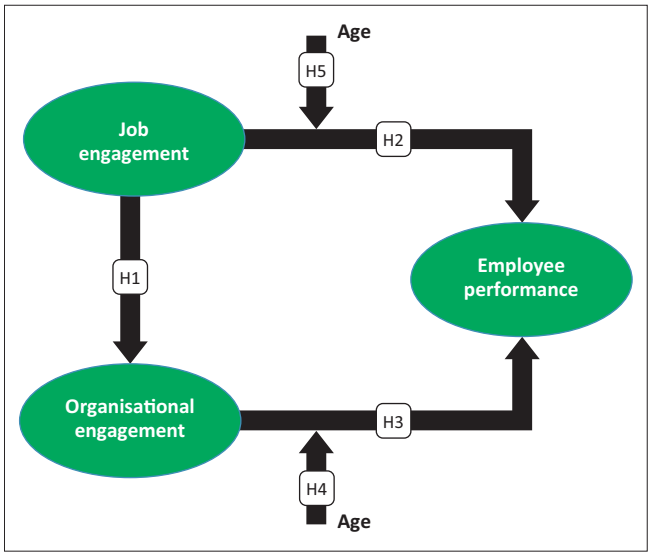


FIGURE 1: Conceptual framework.

they thought would collectively address the challenges bedevilling the Zimbabwean health sector. The underpinning theory in the study is the employee engagement theory. Employee engagement itself is characterised by three main characteristics, namely vigour (enthusiasm), dedication (fully involved in work) and absorption (feeling happy with the work) (Jiang & Luo, 2024). Employee engagement theory therefore a formal idea that by challenging, supporting and inspiring employees, organisations increase satisfaction and maximise the output of the staff. According to this theory, companies with high levels of worker motivation and loyalty enjoy employee engagement benefits such as lower turnover and less absenteeism (Hassan et al., 2024), higher customer satisfaction, bigger bottom lines and increased creativity and innovation.

Hypotheses development

Job engagement and organisational engagement

Job engagement and OE are positively correlated and the two concepts are intertwined (Saks et al. 2022). Megan (2019) articulated that high levels of JE are associated with high OE. This is not surprising because when employees are engaged in their work, they are more likely to be motivated, committed and invested in the organisation's success, leading to improved organisational outcomes. Similarly, employees who are well engaged with their jobs often develop a strong attachment to their organisation, which augments organisational performance. By fostering JE among employees, organisations can create a more motivated, satisfied and committed workforce that can ultimately lead to higher levels of OE (Saks et al. 2022).

Another research by Tham et al. (2022) found that there is a positive relationship between JE and OE. When employees are engaged in their work, they are more likely to be motivated, committed and invested in the success of the organisation. Employees who are more engaged in their jobs are more likely to be engaged with the organisation as a whole and they are more likely to be engaged with the organisation and its goals, leading to improved organisational outcomes (Šakytė-Statnickė et al., 2023). Based on the reviewed literature, the following hypothesis is formulated. Even though employees can be highly engaged with their jobs but not feel connected to the overall organisation, based on the existing literature, we proposed the following hypothesis:

H1: Job engagement positively affects organisational engagement.

Job engagement and employee performance

Job engagement has been identified as a crucial factor influencing EP in various organisations (Bakker & Wang, 2019). Mazzetti and Schaufeli (2022) examined the relationship between JE and organisational outcomes over time and found that JE is positively related to organisational performance. Engaged workers assign value to their roles, which is tied to their self-perception and improved performance. Sofiyan et al. (2022) and Anitha (2014) discovered that employee engagement significantly and positively influences EP. This indicates that the greater the levels of employee engagement, the higher the performance of employees. Premised on previous literature, the following hypothesis is designed:

H2: Job engagement positively affects employee performance.

Organisational engagement and employee performance

Existing literature discovered that OE significantly positively impacts various aspects of workplace performance, including individual performance, team performance and organisational performance (Ahmed et al., 2020; Yandi & Havidz, 2022). Kim and Koo (2017) discovered that OE positively affects the job performance of hotel customer-contact workers and assistant managers. In 2018, Suhartanto and Brien (2018) revealed that OE is positively associated with the job performance of frontline employees in retail stores. Thus, the following hypothesis is developed:

H3: Organisational engagement positively affects employee performance.

Age, organisational engagement and employee performance

Age influences the strength or direction of the association between OE and EP (Meyers et al., 2020). Gu and Chen (2020) posited that the impact of OE on EP might vary depending on an individual's age. McIlveen et al. (2021) supported the hypothesis of the moderating role of age on the association between OE and EP. Extant literature has indicated that age moderates the relationship between OE and EP by influencing factors such as motivation, career stage, adaptability and experience (Meyers et al., 2020). The study revealed that even though the indirect effect was significant for all age groups, it was found to be significantly stronger for younger employees. These findings highlight the relevance of focussing on individual strengths among younger employees who may be able to substantiate their tentative, positive (work) identities because of perceived organisational support for strengths use (POSSU). This indicates that the degree to which OE enhances EP varies depending on the age-connected features of the employees. For instance, as employees age, they naturally gain more experience and emotional maturity, impacting how they respond to OE efforts. Moreover, Tordera et al. (2020) found that older employees are associated with health-related conditions, namely stress, sickness absences, disability and emotional exhaustion, which reduces functional capacity and performance as opposed to younger workers. Premised on this literature review, the following hypothesis is stated:

H4: Age moderates the relationship between organisational engagement and employee performance.

Age, job engagement and employee performance

Age plays a role in determining how JE affects EP. Jo et al. (2020) suggested that the impact of JE on EP may vary depending on an individual's age. Pahos and Galanaki (2020) opined that age, as a personal characteristic, may

moderate this relationship by influencing how individuals perceive and respond to job demands and resources. Hall et al. (2018) found that age-related factors such as experience, knowledge, skills and motivation can influence how individuals engage with their work and perform. For example, extant literature indicated that older employees may have accumulated more experience and expertise over time, which can positively affect their JE and subsequent performance (Kooij et al., 2020). On the other hand, younger employees may possess higher energy and enthusiasm, which can also contribute to their JE and performance (Zhang & Farndale, 2022). Based on the assertions above, the following hypothesis is assembled:

H5: Age moderates the relationship between job engagement and employee performance.

Methodology

Positivism research philosophy

Positivism is the study of 'being' and is concerned with the nature of existence and the structure of reality (Saunders et al., 2019). It confirms that empirical observation and measurement can exclusively attain dependable knowledge. Positivist research aims to expose explanatory connections or causal associations that facilitate forecasting and controlling the issues under examination. Conceptually, positivism relies on quantitative data, which positivists believe is more reliable than qualitative data. Quantitative research is more 'scientific' in its methods than qualitative research and thus more trustworthy (Verma et al., 2024). Quantitative data provide objective information that researchers can use to make scientific assumptions. Surawy-Stepney et al. (2023) are of the view that objectivity in terms of data collection and positivism are inseparably linked. Amini et al. (2022) indicated that in positivism, there is a separation between respondents and researchers to guarantee the objective extraction of knowledge. This separation is attained by sticking to set laws and rules to minimise bias (Creswell, 2020).

Quantitative research approach

The study adopts the quantitative research approach to achieve its purpose. Quantitative research often strives to capture numerical data to study a fact or phenomenon (Pilcher & Cortazzi, 2024; Pregoner, 2024). In quantitative research, researchers use numerical or statistical techniques (Saunders et al., 2018) to evaluate their hypothesis. Quantitative research is a powerful method for extracting empirical data of interest (Creswell, 2018) that permits consistent data-gathering and analysis, enabling comparison of results across diverse studies. Kothari (2018) postulated that standardised data-gathering procedures and well-defined definitions of abstract notions allow study imitation. Quantitative research is generally faster and can capture vast amounts of data quicker than other research methods. In addition, it is easy to manage the data collection process when using large sample sizes in quantitative research. The ability to work in real-time in quantitative research allows analysts to immediately begin incorporating new insights and changes into their work, dramatically reducing the turn-around time of their projects (Pilcher & Cortazzi, 2024).

Survey research design

A survey collects data by asking participants specific population questions (Pilcher & Cortazzi, 2024). In this study, the survey in the form of a questionnaire is developed by the researchers and dispersed to the respondents. This study employed the short version Utrecht Work Engagement Scale-17, Job and Organisation Scales and Individual Work Performance Questionnaire. Upon receiving and analysing responses, the researchers gain valuable quantitative insights. This enables researchers to develop a general understanding of the research problem. The survey has been chosen because it identifies specific typical characteristics of the research subject (Marshal et al., 2021). Respondents seemed to give more truthful answers because of the anonymity of the questionnaire (Saunders et al., 2019). Thus, a survey may result in a more accurate depiction of reality. Moreover, surveys are easy to develop and administer and have greater statistical power because they can gather large amounts of information.

Research population and research sample

This study's target population were the healthcare employees in hospitals in Manicaland Province in Zimbabwe. The target population comprised roughly 2500 employees. The sample of 250 healthcare employees was conveniently chosen. Manicaland Province is a province to the east of Zimbabwe. Fundamentally, the determination of a sufficient sample size in this study was based on Etikan and Bala (2017), which states that 10% or more of a homogeneous target population is considered an adequate sample. Hence from a target population of 2500 participants, a sample size of 250 participants was selected to participate in the study.

Convenience sampling technique

This study used convenience sampling techniques to draw elements from the sampling frame. The unit of analysis in this study comprised low-level employees, nurses, doctors as well as the middle and top management of health institutions in Manicaland Province. They were chosen on the basis of their being to respond knowledgeably. Convenience sampling is a non-probability sampling technique where participants are chosen for participation because they are the easiest for the researcher to access, for example, conveniently available (Saunders et al., 2019). Respondents who were conveniently located, available at a given time, willing to participate in the research and had Internet access were considered. Researchers preferred this method because it requires less time for the data collection process because it is prompt, uncomplicated and economical.

Data collection

We created an online questionnaire for this study. The link to the online questionnaire was sent to the respondents via

email and WhatsApp. Respondents were given 2 months to complete the survey, that is, September 2023 and October 2023. Two hundred and fifty questionnaires were distributed. Of the 250 questionnaires distributed, 239 were returned, giving a response rate of 95.6%. After excluding incomplete or invalid responses, 235 questionnaires were used for data analysis, yielding an effective response rate of 94%. Most valid responses came from men (63%), with women accounting for 37%. Further, most respondents (28%) were between 29 years and 38 years old, followed by 26% from the age group 39–48 years.

Procedure

To be eligible for this study, participants must be employed in the healthcare sector. Respondents were reached through their human resources departments, and recruitment involved directly speaking with the employees to explain the purpose of the study. Employees interested in participating in the study were asked to sign an informed consent letter before completing the questionnaire. Researchers assured participants that their responses would remain anonymous, confidential and used solely for academic purposes. They advised them to refrain from including their names on the questionnaires to enhance the accuracy of the results. Participation was voluntary, and respondents were informed that they could withdraw from the survey at any time. The study got approval from the Research Ethics Committee of Great Zimbabwe University, and all methods complied with relevant regulations and guidelines.

Instruments

Job engagement

In this analysis, the Utrecht Work Engagement Scale's (UWES) short version UWES-17 (Schaufeli et al., 2002) was implemented. The UWES-17 is one of the most commonly employed tools to assess work engagement that is cautious when it comes to empirical validation and can assess employees' work engagement irrespective of their dedicated and work-connected focus (Seppälä et al., 2013; Sinval et al., 2018). It embraces three subscales: vigour, absorption and dedication. All items use a Likert-type scale stretching from 1 (strongly disagree) to 5 (strongly agree). The vigour section contains six items, the absorption section contains six items and the dedication section contains five items.

Organisational engagement

Questions were adapted from two six-item Job and Organisation Engagement Scales (Saks, 2006) to measure OE. In the extant literature, numerous articles have implemented Saks' (2006) six-item scale or modified it by adding additional items. Saks (2006) designed a six-item scale to examine JE and a six-item scale to assess organisation engagement. All items use a Likert-type scale stretching from 1 (strongly disagree) to 5 (strongly agree).

Employee performance

This study used the Individual Work Performance Questionnaire (IWPQ) (Koopmans et al., 2014) to assess EP. The IWPQ comprises an 18-item scale designed to assess the three main dimensions of job performance: contextual performance (CP), task performance (TP) and counterproductive work behaviour (CWB). Task performance has five items, contextual performance has eight items and counterproductive work behaviour has five items. For this research, researchers used only five items from the TP dimension, six items from the CP dimension and five items from CWB to assess EP. Individual Work Performance Questionnaire is a widely used tool to measure EP. This is because of its multidimensionality and ability to consider a wide choice and sophistication of performance behaviours essential in the modern work world.

Plan for data analysis

To achieve the aim of this analysis, smart partial least squares (PLS) software was employed and the PLS path modelling approach was adopted to estimate the structural equation model. Microsoft Excel and Statistical Package for the Social Sciences (SPSS) 28.0 were also implemented. Partial least squares structural equation modelling (PLS-SEM) was employed because of its effectiveness in parameter estimation (see, for instance, Da Silva et al., 2024 and reference therein). Some metrics were implemented to evaluate the validity and reliability of the results and the model's goodness-of-fit.

Ethical considerations

Ethical clearance to conduct this study was obtained from the Great Zimbabwe University, Julius Nyerere School of Social Sciences Research Committee (reference number: 20/11/2023).

Results

In this section, the study results are articulated.

Measurement model testing

Internal consistency reliability was examined using Cronbach's alpha (CA) and composite reliability (CR), while convergent validity was evaluated using the average variance extracted (AVE). Table 1 presents the values for CA, CR and AVE.

TABLE 1: Reliability and convergent validity.

Variable	CA	CR	AVE
A	0.67	0.80	0.51
CP	0.78	0.85	0.53
CWB	0.73	0.83	0.55
D	0.71	0.81	0.52
EP	0.80	0.85	0.50
JE	0.83	0.87	0.54
OE	0.71	0.82	0.54
TP	0.76	0.84	0.51
V	0.83	0.88	0.55

A, absorption; CP, contextual performance; CWB, counterproductive work behaviour; D, dedication; EP, employee performance; JE, job engagement; OE, organisational engagement; TP, task performance; V, vigour; CA, Cronbach's alpha; CR, composite reliability; AVE, average variance extracted.

Table 1 indicates that the internal consistency of the study's constructs is robust, that is, the data are reliable. This is indicated by the values for both CA and CR, which exceed the endorsed levels of 0.70 (Hair et al., 2010). Moreover, the AVE values, which exceed the recommended level of 0.5 (Fornell & Larcker, 1981; Hair et al., 2010; Nunnally, 1994) affirm the convergent validity of the data. To enhance the overall reliability of the model, items with factor loadings below 0.70 were excluded.

The use of the Fornell–Larcker criterion was instrumental in confirming the discriminant validity of the constructs, with the detailed outcomes presented in Table 2.

Table 2 presents both the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity test. The KMO test measures the sampling adequacy of every variable in a model and Bartlett's test examines the hypothesis that the correlation matrix is an identity matrix. A KMO value is 0.733, which is above the usually recommended threshold of 0.6, is regarded as good. The Bartlett's test is significant (0.000), meaning that the correlation matrix is not an identity matrix. These results indicate that the data was suitable and adequate for factor analysis.

TABLE 2: KMO and Bartlett's test.

Test	-	Results
Kaiser–Meyer–Olkin measure of sampling adequacy		0.733
Bartlett's test of sphericity	Approx. Chi-square	530.9300
	df	6.0000
	Sig.	0.0000

df, degree of freedom; sig, significance; KMO, Kaiser–Meyer–Olkin.

Table 3 provides compelling evidence supporting the accomplishment of discriminant validity because the square root of the AVE for each factor exceeds the correlation coefficients between factors employed in this analysis (Wan & Duffy, 2022), affirming the distinctiveness of the measurement constructs used in this study. This implies that the adopted constructs do not measure the same underlying phenomenon. Table 3 also indicates correlations for the variables employed in this experiment.

Furthermore, the study buttressed the evidence for discriminant validity by applying the heterotrait-monotrait ratio of correlations (HTMT) technique (see Table 4).

Table 4 shows that the HTMT ratios consistently fall below the endorsed level of 0.9. This implies robust discriminant validity, endorsing the validity and reliability of the employed measurement model as well as assuring that the constructs under investigation distinctly capture unique aspects, avoiding overlap.

TABLE 5: Variance inflation factor results.

Variable	VIF
A	2.67
CP	3.01
CWB	1.79
D	2.97
EP	2.90
JE	1.883
OE	2.972
TP	3.046
V	1.548

A, absorption; CP, contextual performance; CWB, counterproductive work behaviour; D, dedication; EP, employee performance; JE, job engagement; OE, organisational engagement; TP, task performance; V, vigour; VIF, variance inflation factor.

TABLE 3: Correlation coefficient matrix and discriminant validity.

Variable	A	CP	CWB	D	EP	JE	OE	TP	V
A	**0.71**	-	-	-	-	-	-	-	-
CP	0.25	**0.73**	-	-	-	-	-	-	-
CWB	-0.21	-0.43	**0.74**	-	-	-	-	-	-
D	0.32	0.26	-0.25	**0.72**	-	-	-	-	-
EP	0.27	0.98	-0.44	0.28	**0.70**	-	-	-	-
JE	0.64	0.26	-0.23	0.43	0.29	**0.73**	-	-	-
OE	0.38	0.17	-0.26	0.41	0.19	0.51	**0.73**	-	-
TP	0.24	0.34	-0.36	0.31	0.36	0.30	0.34	**0.71**	-
V	0.53	0.27	-0.23	0.43	0.30	0.97	0.49	0.30	**0.74**

Note: Bold values signify the square root of AVE.

A, absorption; CP, contextual performance; CWB, counterproductive work behaviour; D, dedication; EP, employee performance; JE, job engagement; OE, organisational engagement; TP, task performance; V, vigour.

TABLE 4: Heterotrait-monotrait discriminant validity.

Variance	A	CP	CWB	D	EP	JE	OE	TP	V
A	-	-	-	-	-	-	-	-	-
CP	0.37	-	-	-	-	-	-	-	-
CWB	0.31	0.56	-	-	-	-	-	-	-
D	0.46	0.36	0.32	-	-	-	-	-	-
EP	0.40	0.74	0.55	0.37	-	-	-	-	-
JE	0.82	0.33	0.31	0.51	0.36	-	-	-	-
OE	0.53	0.23	0.37	0.58	0.25	0.66	-	-	-
TP	0.35	0.43	0.48	0.41	0.45	0.39	0.47	-	-
V	0.68	0.34	0.29	0.50	0.37	0.76	0.63	0.39	-

A, absorption; CP, contextual performance; CWB, counterproductive work behaviour; D, dedication; EP, employee performance; JE, job engagement; OE, organisational engagement; TP, task performance; V, vigour.

To assess the existence of multicollinearity, the study performed the variance inflation factor (VIF) analysis (see Table 5).

Table 5 shows that all VIF values are below the recommended 3.3 (Hair et al., 2011). The implication here is that multicollinearity is not a problem. The non-existence of multicollinearity improves the reliability of the model and the validity of the results.

Goodness-of-fit metrics

Two model fit indices, that is, the normed fit index (NFI) and standardised root mean square residual (SRMR) were employed to examine the goodness-of-fit of the developed model. Table 6 indicates the SRMR and NFI values.

The SRMR value of 0.077 indicates a good fit because it is below the recommended threshold of 0.08 (Goretzko et al., 2024). On the other hand, the NFI value of 0.905 signifies a strong alignment between the proposed model and the data because it exceeds the recommended threshold of 0.90. These findings suggest that the proposed model considers the associations among the study's variables.

Structural equation model and hypotheses testing

The PLS approach was used to analyse the hypothesised associations in the conceptual framework. Table 7 presents the path coefficients related to the hypothesised associations. This investigation assessed the significance of the direct and indirect effects of implementing a bootstrapping procedure with 5000 samples.

Table 7 indicates that JE significantly positively affects OE ($\beta = 0.513$, $p < 0.001$). Job engagement positively impacts EP ($\beta = 0.194$, $p = 0.025$). On the other hand, OE has an insignificant positive influence on EP ($\beta = 0.072$, $p = 0.425$). In summary, H1 and H2 are supported, but H3 is not supported.

TABLE 6: Goodness-of-fit results.

SRMR	NFI
0.08	0.90

SRMR, standardised root mean square residual; NFI, normed fit index.

Table 8 shows the outcomes of the moderating role of age on the association between JE and EP and OE and EP.

Table 8 indicates that age plays an insignificant moderating role in the relationship between JE and EP ($\beta = 0.032$, $p = 0.645$). Similarly, the study reveals an insignificant moderating role of age on the association between OE and EP ($\beta = 0.005$, $p = 0.950$). These results indicate that H4 and H5 are not supported.

Figure 2 depicts the fitted model, presenting coefficients and factor loadings. It summarises the associations between latent variables, observed indicators and their conforming path coefficients, explaining the direction and strength of relationships between constructs. For instance, the outcomes reveal that JE alone explains 26.3% of the total variability in OE. These findings suggest that this model performs relatively well in explaining the relationships among the variables.

Discussion

The study results indicate that JE has a significant positive influence on the OE. This implies that as the level of JE rises, OE also rises. This is not surprising because JE pushes workers to invest more in their roles, which benefits their personal growth and the organisation's overall development. Fundamentally, by fostering JE among health sector employees, organisations can create a more motivated, satisfied and committed workforce that may ultimately lead to higher levels of OE. Job engagement has substantial benefits for organisations because it is associated with several vital organisational outcomes such as performance and turnover of employees. Mazzetti and Schaufeli (2022) and Saks et al. (2022) discovered that JE and OE are positively correlated and that the two concepts are intertwined. Megan (2019) and Yamin (2019) are some of the authors who opined that there is a positive relationship between JE and OE. The positive effect of JE on OE highlights that organisations may benefit from initiatives to enhance JE to bolster OE.

We discovered that JE positively influences EP. In support of this, Ogbonnaya and Messersmith (2019) found that JE generally leads to individual performance and positive employee outcomes. Kim et al. (2019) discovered that engaged

TABLE 7: Path analysis results.

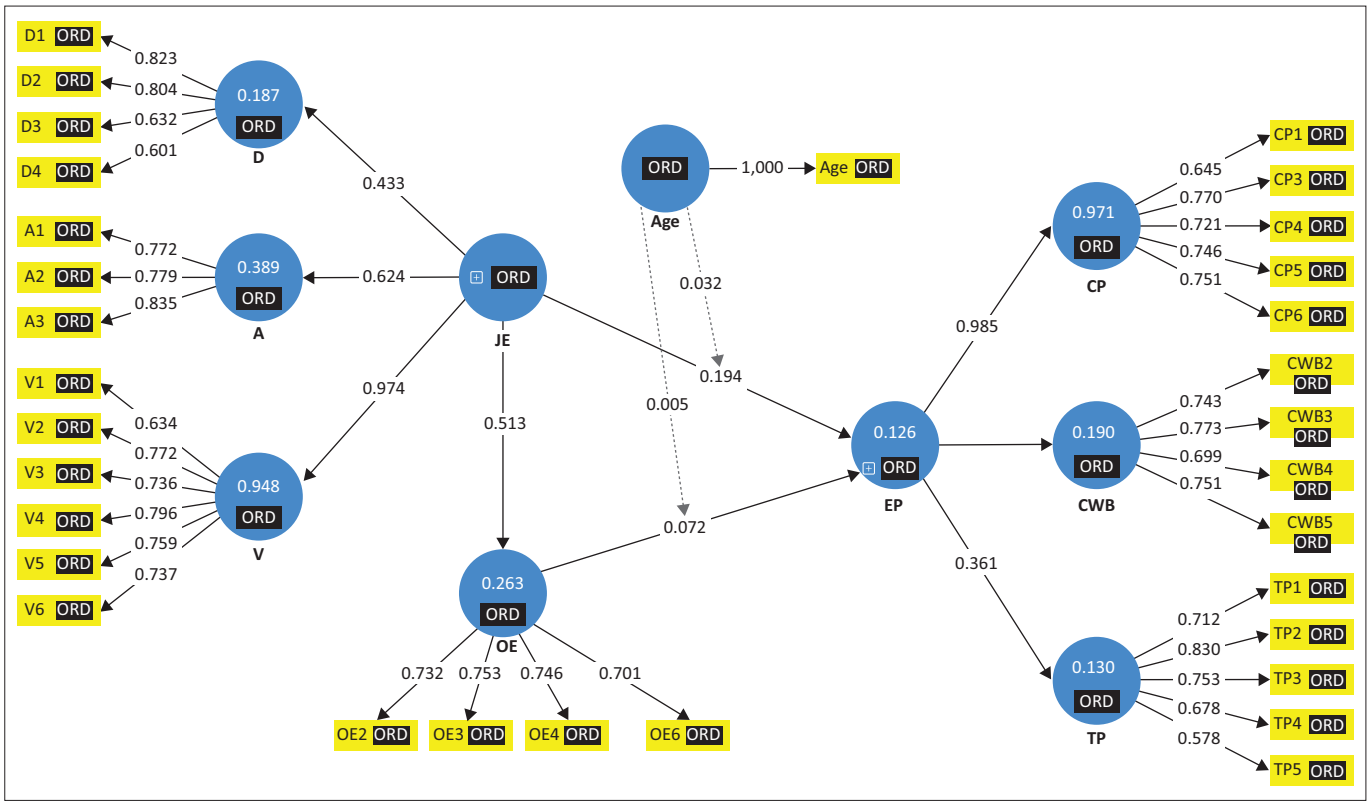
Hypothesis	Relationship	Coefficient (β)	*T* statistic	*p*	Decision
H1	JE -> OE	0.51	8.01	< 0.001	Supported
H2	JE -> EP	0.19	2.25	0.025	Supported
H3	OE -> EP	0.07	0.80	0.425	Not supported

JE, job engagement; OE, organisational engagement; EP, employee performance.

TABLE 8: Moderation effects.

Relationship	Coefficient (β)			95% CI bias corrected		Moderation existence
	Beta	*T*	*p*-value	2.50%	97.50%	
(H4) Age x JE -> EP	0.03	0.46	0.645	-0.10	0.16	No
(H5) Age x OE -> EP	0.00	0.06	0.950	-0.16	0.15	No

JE, job engagement; OE, organisational engagement; EP, employee performance; CI, confidence interval.



A, absorption; CP, contextual performance; CWB, counterproductive work behaviour; D, dedication; EP, employee performance; JE, job engagement; OE, organisational engagement; TP, task performance; V, vigour; ORD, ordinal data.

FIGURE 2: Structural equation model.

employees perform better and cut counterproductive matters such as employee turnover intentions. When employees receive positive treatment via effectively implemented JE strategies, they will repay the organisation by portraying positive work attitudes (Bakker et al., 2021; Tordera et al., 2020). Such positive work attitudes push employees to be more productive regarding task performance, contextual performance and counterproductive work behaviour. Also, Sofiyan et al. (2022) and Anitha (2014) exposed that employee engagement positively affects EP. The management of healthcare centres should foster a JE environment so that employees can feel motivated, ultimately leading to job satisfaction and improved performance.

Study results indicate an insignificant positive association between OE and EP. This finding is against our intuition. However, it can be explained. Our finding points out the fact that OE may not always translate into EP. This may be attributed to differing organisational contexts and the nature of the work. Saks et al. (2022) indicated that one of the primary reasons for the inconsistency and insignificant results on the connection between OE and EP is the challenge of accurately measuring both constructs. This is not surprising because both OE and EP are multifaceted. On the other hand, OE has been found to have a substantial positive influence on various aspects of performance at the workplace (Bakker et al., 2021) including individual performance, team performance and organisational performance. Suhartanto and Brien (2018) and Kim and Koo (2017) are some of the authors who indicated that OE is positively related to job performance.

Age-related effects on engagement and performance

Contrary to our expectations, we discovered that the moderation influence of age on the association between OE and EP is insignificant. This implies that age does not significantly influence the relationship between OE and EP. This finding is supported by Nyuur et al. (2022) who in their study found no evidence of employee age moderating the association between each of the four corporate social responsibility dimensions and employee job attitudes (engagement and satisfaction). Thus, age has an insignificant moderation effect on the relationship between OE and EP. Our findings did not support the positive direct relationship between chronological age and employee engagement and EP. However, consistent with our hypothesis, age did play a key role in the triple interaction, suggesting that the asymmetrical age effects observed in this study may be because of individual motivational differences across the lifespan. Moreover, even though age is often considered a significant factor in various aspects of work, including JE and EP (Arefin et al., 2022; Chen & Zhang, 2019; Pahos & Galanaki, 2020; Veth et al., 2018), the study results indicated that age plays an insignificant moderating role on the relationship between JE and EP.

Recommendations for practice

Managers of the health sector should make sure that they design roles that engage employees respectful of their age groups to improve their performance. A good connection between

employees and their jobs was proven to have a proportionate effect on the ultimate OE. The managers in the health sector in Zimbabwe should embrace regular appraisals to ensure that employees are well-engaged and to make necessary adjustments. The organisation must acknowledge employees' efforts and let them know management appreciates their hard work. The management of health organisations should make decent work part of the organisation's culture. It can therefore be noted that decent work promotes fair treatment of all employees and above all they will be properly engaged and improve their performance. Health authorities should also use several employee engagement variables such as training and development and work-life balance, to attain the set targets at their organisation. Highly engaged employees are willing and determined to meet set targets. Lastly, the management should promote an innovative culture. Employees who feel like they can contribute meaningfully to company goals and mission use their skills and expertise to do so and will not only feel more engaged while working, but they will also feel more passionate about their jobs as well.

Limitations

Results from this study would be difficult to generalise to other countries because of the uniqueness of Zimbabwe as a country. The factors that determine employee engagement in the health sector may differ depending on a number of factors for example some countries like Australia are developed while Zimbabwe is still developing. This study has focussed on only one sector of the economy, which is the health sector. The results of this study may not be applicable to other sectors of the economy such as agriculture, energy, manufacturing, mining and tourism among others. The researcher in this study did not allude to these other sectors of the economy.

Recommendations for further studies

This study can be extended in several dimensions. Firstly, future studies may consider carrying out the same study in other sectors, such as the education, manufacturing and mining sectors. Secondly, similar research can be carried out using different research designs, for example, exploratory research design and utilising mixed research approaches for triangulation purposes while considering other factors that affect the relationship between employee engagement, OE and EP such as gender, educational qualifications and experience. Thirdly, future studies should consider the wider Zimbabwean healthcare sector to augment the result's generalisability beyond the province of Manicaland.

Conclusion

Implementing the structural equation modelling, this study examined the association between employee engagement, OE and EP of healthcare workers in Manicaland Province in Zimbabwe. Moreover, it assesses the moderating influence of age on the association between JE and EP and OE and EP of healthcare workers. Employing the UWES-17, Job and Organisation Engagement Scales and IWPQ, the data implemented in this analysis were collected from 235 healthcare workers. The findings of this study exhibit that JE positively impacts OE, JE positively influences EP, and that the positive impact of OE on employee performance is insignificant. Moreover, the findings indicate that age has an insignificant moderating effect on the relationship between JE and EP and OE and EP. The implication is that human resources interventions should be introduced to deal with employee engagement, OE and EP of healthcare workers, especially nowadays when healthcare workers are moving out of the country for greener pastures. Health institutions need to introduce strategies that promote employee engagement, OE and EP to attain their objectives.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

N.Makumbe, N. Mashavira, M.C., F.R.M. and M.S. contributed equally to this work.

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Data availability

The data that support the findings of this study are available from the corresponding author, F.R.M., upon reasonable request.

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