

Perceived organisational support and organisational citizenship behaviour via employee engagement and psychological availability

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Abstract

Organisational citizenship behaviour contributes to improved employee performance and the overall organisational performance. In nursing, a lack of these discretionary behaviours may hamper patient recovery. Literature suggests that perceived organisational support influences organisational citizenship behaviour. Although employee engagement and psychological availability are critical factors in understanding employee behaviours, limited attention has been given to understanding how they function as parallel mechanisms in the relationship between perceived organisational support and organisational citizenship behaviour. This study addresses this gap by exploring the mediation roles of these psychological factors in the relationship. The study utilised the social exchange theory and the job demands–resources model as the underpinning theories. We collected cross-sectional data from 847 nurses in Ghana. 761 usable responses were analysed using the PROCESS macro for Statistical Package for the Social Sciences (SPSS). The results revealed that perceived organisational support positively predicted organisational citizenship behaviour, employee engagement and psychological availability. Psychological availability also significantly promoted organisational citizenship behaviour. Besides, both employee engagement and psychological availability positively mediated the effect of perceived organisational support on organisational citizenship behaviour. Thus, creating a supportive environment that improves employee engagement and psychological availability among nurses eventually boosts organisational citizenship behaviour and contributes to improved healthcare delivery.

Received

05 May 2025

Received in revised form

15 September 2025

10 December 2025

18 February 2026

Accepted

26 March 2026

Keywords:

Employee engagement

Citizenship behaviour

Organisational support

Performance

Psychological availability

1. Introduction

The health sector continues to play a significant role in economic development. The sector has contributed to making societies stable (Torkayesh et al., 2021). It not only improves the quality of health and human resources but also positively affects economic growth (Abdullah et al., 2021; Zhao & Zhou, 2021). In developing countries, the health sector has contributed to minimising the harmful effects of the Coronavirus Disease 2019 (COVID-19) pandemic. For instance, well-organised workflows, processes and emergency responses contributed to effective management during the COVID-19 pandemic (Filip et al., 2022). Despite these positives, the health sector in developing countries faces challenges related to digitisation, scarce resources, and erratic power supplies (Muhunzi et al., 2024). These issues, combined with poor equipment maintenance, rural access inequities, and facility inefficiencies, contribute to high maternal and child mortality (Ibrahim et al., 2025). These issues negatively impact the attainment of Sustainable Development Goal 3 (Boniol et al., 2022; Diop & Asongu, 2023).

A focused attention on the health sector is necessary because, unlike many other sectors, the challenges in the healthcare work settings particularly place high psychological demands on the health staff who are expected to make decisions about human life and are continuously exposed to suffering. These expose nurses, particularly, to emotional stress. Concentrating on the health sector is thus not only timely but necessary. Within the health sector, the role of nurses in delivering effective healthcare cannot be overstated. According to Al-Hamdan and Bani (2022), nurses are the mainstay of any healthcare system. The quality of healthcare largely depends on nurses' commitment to organisational goals, placing high demands on them. Consequently, their attitudes and behaviours, psychological readiness, organisational citizenship behaviour, the levels of engagement and psychological availability directly impact their performance (Windayanti et al., 2023). In addition, several interacting factors in the healthcare work environment influence client satisfaction and performance of healthcare workers, including nurses (Xu et al., 2023). One such environmental factor is perceived organisational support (POS).

POS is employees' perceptions of how much their organisation values their contributions and cares about their well-being (Eisenberger et al, 2001). POS is linked to organisational citizenship behaviour (OCB), which refers to voluntary behaviours that are separate from formal job descriptions and are typically unpaid (Smith et al., 1983). POS may also be linked with psychological availability, the belief that one possesses the physical, emotional, and cognitive resources necessary to meet work demands (Kahn, 1990), and employee engagement, which is a positive, work-related feeling resulting in employees becoming fully engrossed in performance (Kahn, 1990; Schaufeli et al., 2002). POS may be associated with OCB, psychological availability and employee engagement because it influences motivation, behaviour and attitudes (Abdullah & Al-Abrow, 2023; Aldabbas et al., 2023). The relationship between POS and these outcomes can be explained through the social exchange theory (SET) (Blau, 1964), which posits that employees reciprocate organisational care with positive attitudes and behaviours, including OCB, psychological availability and employee engagement. Thus, when nurses believe that their organisation values their well-being, they develop a sense of trust and reciprocity, leading to greater engagement, psychological availability and performance beyond prescribed roles. However, the SET tenet of subjective evaluation of costs and benefits by individuals, based solely on human rationality, does not clarify the mechanisms by which POS translates into such outcomes (Redmond, 2015). The job demands-resources (JD-R) model (Demerouti & Bakker, 2011), highlights POS as a key psychological resource for nurses, helping them maintain focus, resilience, and energy, which are essential for fostering OCB under high job demands.

According to Podsakoff et al. (1990), OCB is characterised by encouraging colleagues, resolving conflicts, assisting others, making suggestions, participating in teamwork, adhering to rules, exerting extra effort and commitment. In circumstances where dissatisfaction with working conditions is prevalent, as in service organisations (Edeh & Ikpor, 2025), OCB is vital for nurses to go beyond prescribed roles to meet patient needs in challenging circumstances, such as staff shortages (Wang et al., 2023). Lack of OCB may result in unmet healthcare needs. This might negatively impact patient recovery. Peng and Lin (2016) posit that while OCB is viewed positively, it can also create unintended effects. How the construct is conceptualised may also vary across cultural contexts (Ueda, 2012). For instance, in collectivist cultures (e.g., Ghana), emphasis is placed on shared goals, collective well-being and personal sacrifice for the good of the group (Markus & Kitayama, 1991). This may push the Ghanaian nurse to be more motivated to engage in discretionary activities, such as covering shifts for absent colleagues and helping to support colleagues and patients. Due to these contextual differences, it is difficult to conclude on the effects of OCB.

Empirical evidence shows that POS fosters engagement and OCB (Jindain, 2024), and may enhance psychological availability. Related literature suggests that employee engagement mediates the relationship between POS and OCB in some healthcare settings (Machfud & Yulianti, 2020). However, studies on the mediating roles of engagement and psychological availability in the POS and OCB relationship, particularly among nurses, remain limited. Addressing this gap is essential for improving healthcare outcomes in developing countries, such as Ghana, where performance shortfalls among nurses are well documented (Ministry of Health, Ghana, 2018; 2022). Accordingly, consistent with the JD-R model, nurses who benefit from organisational supports receive psychological resources that enable them to become psychologically available and engaged, preparing them to go beyond their prescribed roles (OCB). The theoretical model is shown in Figure 1.

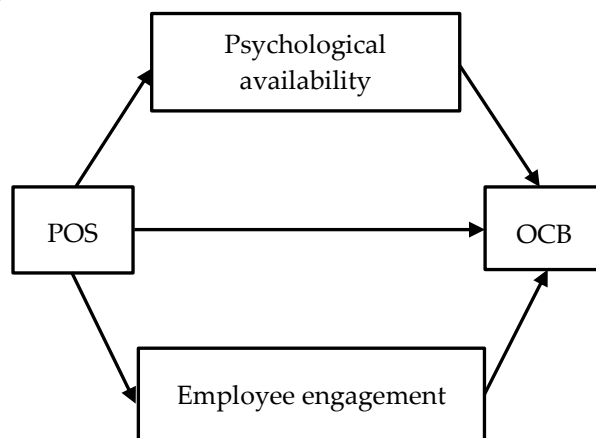


Figure 1. Theoretical framework

Source: Figure by authors

From Figure 1, we used the SET to explain the direct relationships between POS as a predictor of OCB, employee engagement and psychological availability. The JD-R model, on the other hand, was used to expatiate the associations

between employee engagement, psychological availability and OCB. The theory also supported the parallel mediations of employee engagement and psychological availability in the relationship between POS and OCB.

The health sector in Ghana has benefited from the introduction of the National Health Insurance Scheme and the National Healthcare Quality Strategy to improve access and satisfaction (Amporfu et al., 2022). In spite of these policy initiatives, the sector is still confronted with inadequate staffing, inequitable distribution of health personnel and limited resources, which continue to undermine performance (Owusu et al., 2025). A 2020/2021 holistic assessment of the health sector revealed that all-cause mortality increased from 17.7 to 22.9 percent during the period (Ministry of Health, Ghana, 2022). This partly reflects the suboptimal performance of the health worker. In particular, nurses' performance may be constrained by low pay levels, work overload, stress, and risk of burnout (Kaburi et al., 2019). Addressing these challenges might ensure stakeholder satisfaction with hospital services. POS is preferred by nurses over financial incentives (Bhanot et al., 2018). POS is an important driver of motivation, which is essential for OCB (Thompson et al., 2020). Nurses' performance is also influenced by their willingness to exhibit extra-role behaviours (e. g., Windayanti et al., 2023). We contend that, in the face of Ghana's public sector fiscal challenges (Younger & Osei-Assibey, 2017), POS offers a more sustainable alternative to financial rewards.

In light of the preceding arguments, the performance issues among nurses in Ghana may be attributed to low POS and weakened psychological factors like psychological availability and employee engagement. These factors are essential in nurturing positive behaviours such as OCB, which are vital in nursing due to the emotionally demanding nature of the nurse's job, particularly in Ghana (Kaburi et al., 2019). As a result, the need to address nurses' psychological needs, which can boost OCB and patient outcomes, cannot be overemphasised. Although research on psychological availability, employee engagement, POS and OCB exists, there are gaps in understanding how they correlate. These gaps frustrate the development of effective human resource strategies that value these factors as essential for quality service. There is a need to address these gaps in order to achieve Sustainable Development Goals (SDGs) on health. Comprehending how psychological factors function as non-financial drivers of performance can help policymakers design evidence-based HR policies that utilise non-financial strategies to improve and strengthen human resource management and healthcare delivery.

Based on the emerging issues, this investigation focuses on the parallel mediation of employee engagement and psychological availability in the relationship between POS and OCB among nurses in Ghana. Furthermore, this study aims to ascertain the effects of POS on employee engagement, psychological availability and OCB. Besides, the study examines the effects of employee engagement and psychological availability on OCB. These objectives potentially extend the SET and the JD-R model and provide practical guides for policymakers in the health sector.

2. Literature review

2.1 Theoretical review

The present study is underpinned by the SET and the JD-R model. The JD-R and SET frameworks were chosen for their strong empirical validation across diverse sectors, making them suitable for this study's hypotheses and interpretations. Combining both theories enable a more comprehensive understanding by capturing social, psychological, and job-related influences on behaviour while considering the mediating role of psychological constructs.

The salient tenet of SET, according to Blau (1964), is that relationships are formed based on a cost-benefit analysis. In this relationship, individuals tend to repeat behaviours that were previously rewarded (Homans, 1958). Homans (1958) further asserts that the repetition of rewarded actions arises from an individual's desire to maintain balance in exchange relationships. Blau (1964) adds that when a party (e.g., employer) offers a favour to another (e.g., employee), such as concern for well-being, they expect reciprocation in kind. The reciprocation includes helping others and offering ideas due to unspecified obligations. This suggests that kind actions by an organisation toward an employee can elicit attitudinal or behavioural responses from the employee (Ahmad et al., 2023).

The JD-R model is based on the assumption that various jobs are faced with specific risk elements which are related to stress embedded in the job (Demerouti et al., 2001). They classified these factors into two, namely job demands and job resources. Job demands are not necessarily negative, but they can cause job-related stress if the requirements to meet the demands are not met, resulting in adverse employee consequences (Demerouti et al., 2001). Adequate resources can reduce stress, support development, capabilities and learning (Demerouti & Bakker, 2011). In nursing, job demands include emotional and psychological challenges that make the job particularly stressful (Kaburi et al., 2019). Job resources, on the other hand, include factors such as rewards, workplace safety, and organisational support that help employees manage job demands (Demerouti et al., 2001). In this study, the JD-R model explains how employee engagement and psychological availability function as mechanisms through which POS is associated with OCB. Our

proposition is based on the reasoning that due to the psychologically daunting nature of the nurses' job, POS provides nurses with psychological resources, including employee engagement and psychological availability, which can trigger positive behaviours, including OCB.

2.2 Hypothesis development

2.2.1 POS and OCB

Podsakoff et al. (1990) delineate OCB as voluntary actions which are neither formally required nor directly rewarded. The actions include encouraging colleagues, resolving conflicts, assisting others, adhering to rules and exerting extra effort (Podsakoff et al., 1990). OCB has beneficial effects, such as improving job performance and efficiency and engendering a positive social and psychological work environment (Borman & Motowidlo, 1993). POS is employees' perceptions of how well their organisations value their contributions and is concerned with their well-being (Eisenberger et al., 1986). POS serves as a catalyst for reciprocity in terms of employee dutifulness and motivation to engage in OCB (Thompson et al., 2020). POS also stimulates employee happiness, responsibility, psychological attachment to the organisation, and overall job satisfaction (Eisenberger et al., 2001). Academics often view POS as a positive construct and have explored its implications for organisations and individual outcomes (e.g., Rockstuhl et al., 2020).

Empirical evidence showed that POS is a positive driver of OCB. For example, Ansori and Wulansari (2021), Alshaabani et al. (2021), Pramita et al. (2023) and Susanto (2023) found that POS positively correlated with OCB. In contrast, Park and Kim (2024) found no significant relationship. This finding points to inconsistencies that could be attributed to the quality of POS and the differences in cultural and job contexts, making it difficult to generalise findings across different settings. This reveals research gaps which require exploration to cement the relationship. SET suggests that in the employer-employee relationship, gestures such as recognising employee contributions and demonstrating concern for their well-being create responsibility to reciprocate (Blau, 1964). In line with this viewpoint, nurses who view the organisation as valuing their contributions and prioritising their well-being may be more inclined to go beyond their formal duties to support organisational goals. Therefore, we propose that:

H1: POS is positively related to organisational citizenship behaviour.

2.2.2 Employee engagement and OCB

Employee engagement involves the simultaneous utilisation of an individual's physical, mental and emotional selves while working (Kahn, 1990). This implies that employees become mentally dedicated, vigorous and absorbed during role performance (Schaufeli et al., 2002). Employee engagement, therefore, reflects an employee's level of passion, commitment and enthusiasm, which manifests as feeling energised and mentally resilient at work, full commitment, a sense of significance in one's job, and deep focus and immersion in work (Schaufeli et al., 2002). Literature reveals that employee engagement is a major factor that affects OCB and various individual and organisational outcomes. Recent studies consistently demonstrated that employee engagement positively predicted OCB across various work settings (Kanchana, 2024; Nuryanto & Pratiwi, 2024; Riad et al., 2019). However, limitations persist. For instance, Riad et al. (2019) focused on university faculty in Egypt, but the academic setting restricts broader applicability. Their reliance on the SET also limits theoretical depth. Kanchana (2024) examined private bank employees and found a similar association, but methodological concerns, such as small sample size and convenience sampling, undermine the generalisability and reliability of the findings.

The above discussion points to gaps that must be addressed. From the perspective of the JD-R model, job resources could result in high employee willingness to immerse the physical, emotional and mental aspects of themselves, which could lead to discretionary behaviours beyond assigned roles. Based on this reasoning, we propose the following hypothesis:

H2: Employee engagement is positively related to organisational citizenship behaviour.

2.2.3 POS and employee engagement

High POS provides employees with the mental, physical, and emotional resources necessary to fulfil their responsibilities (Saks, 2006). Several research findings in different organisations show that POS is an important factor that promotes employee engagement. For instance, in the training service context (Bonaiuto et al., 2022), in hybrid arrangements (Jindain & Gilitwala, 2024), and in public universities (Mehta & Kaur, 2025), POS was found to be positively associated with employee engagement. These studies corroborated those of Purba et al. (2023) and Bonaiuto et al. (2022). Collectively, these findings support the theoretical positioning of POS as a driver of employee engagement.

Nevertheless, the empirical findings connecting POS to employee engagement have focused mainly on developed countries, leaving these relationships underexplored in developing economies. This limits the applicability of the findings to developing economies because country-specific contexts affect the dynamics of POS. For instance, economic volatility, collectivist cultural norms, regulatory environments and industry-specific pressures may significantly influence how POS is interpreted and how effectively it translates into engagement (Fischer & Karl, 2025). Hence, there is a need to explore further the POS-employee engagement relationship in developing economies, including Ghana. The outcome from the linkage might be essential in establishing whether the relationship between POS and employee engagement holds generally or is refined by local conditions. Based on this consideration, we propose that nurses who view POS positively may feel an implied obligation to reciprocate by becoming engaged. Hence, we hypothesise that:

H3: There is a positive effect of POS on employee engagement.

2.2.4 Psychological availability and OCB

Psychological availability is an indicator of employees' resource level (May et al., 2004). It involves employees' confidence that they possess the physical, emotional, and cognitive resources necessary to meet work demands (Kahn, 1990). Individuals who experience psychological availability are intrinsically motivated (Kahn, 1990) and demonstrate this through self-awareness, confidence in expressing appropriate emotions, the ability to manage conflicting demands, clear thinking, and sustained energy at work (Kahn, 1990; May et al., 2004).

Various psychological factors have been associated with OCB. For instance, Wibowo's (2022) study of firefighters found that psychological contracts positively affected OCB. These findings may not generalise to other sectors, such as health. Similarly, Yuwono et al. (2023) showed that psychological capital influenced OCB among Indonesian correctional counsellors. However, the single-organisational context limits broader applicability. Additionally, Almohtaseb et al. (2023) explored the relationship between psychological empowerment and OCB among information communications and technology professionals in Jordan. Although psychological empowerment, like psychological availability, embraces internal capabilities, psychological availability, unlike empowerment, reflects emotional, cognitive and physical readiness. These aspects of psychological availability and their collective role in driving OCB remain understudied in the OCB literature.

Although empirical evidence directly linking psychological availability to OCB is rare, studies show that it has a positive impact on individual and organisational outcomes. Mgeni (2022) reported a positive association between psychological availability and business performance in Zanzibar. Rabiul et al. (2023) also showed that the construct boosted employee engagement through HRM practices. Given the constructs' positive impact on other organisational and individual variables and the insufficient studies focusing on its association with OB, it is worthwhile to examine how psychological availability is related to OCB. To address this gap, we suggest that higher levels of psychological availability have the tendency to result in greater OCBs that are beneficial to both individuals and organisations. In line with the JD-R model, the interaction between job demands and job resources (e.g., psychological availability) may enable psychological availability to influence employee motivation and well-being, which might result in OCB. Therefore, we hypothesise that:

H4: Psychological availability positively predicts OCB.

2.2.5 POS and psychological availability

Recent research has provided valuable insights into the relationship between POS and various outcomes. van der Ross et al.'s (2022) study on engagement and burnout risk found that POS was strongly associated with increased employee engagement. In another study, Satardien et al. (2019) concluded that POS and turnover intention were positively related. Apart from this, Heyns et al. (2021) found that increased supervisor support led to higher feelings of psychological safety among employees. Also, Maan et al. (2020) reported a positive association between POS and psychological empowerment.

The above studies show the beneficial impacts of POS on various psychological factors and employee outcomes. Despite these findings, little knowledge exists on the relationship between POS and psychological availability. POS may generate a sense of obligation among employees, leading them to feel more psychologically available at work. Based on this, we hypothesise that:

H5: POS is positively related to psychological availability.

2.2.6 Mediating effect of employee engagement

The preceding discussions provide sufficient evidence for the positive link between POS and OCB (e.g., Susanto, 2023). Additionally, studies have identified POS as a key driver of employee engagement (e.g., Bonaiuto et al., 2022). However,

scholars are also interested in understanding the mechanisms underlying the relationship between POS and OCB. For example, Alshaabani et al. (2021) and Malinda and Safitri (2023) found that employee engagement mediated the relationship between POS and OCB. While existing literature presents a substantial body of research on how POS influences OCB through employee engagement (e.g., Alshaabani et al., 2021; Malinda & Safitri, 2023), there are reasons to expect varying results across different countries, such as Ghana, and occupations, including nursing.

First, there are varied views on employee engagement (Teixeira & Santos, 2024). Second, there is no consensus on the dimensionality of OCB across countries (Yousuf et al., 2022). Finally, Rockstuhl et al. (2020) concluded that cultural differences in POS account for varying effects of POS. Given that the contexts of previous studies differ from Ghana's, it is crucial to examine the mediating role of employee engagement in the relationship between POS and OCB in Ghana.

Consistent with the JD-R model, when employees believe that their organisation values their contributions and cares for their well-being, they receive psychological resources that enable them to become physically, emotionally, and cognitively engrossed in their work. This, in turn, may lead to behaviours such as helping others, speaking positively about the organisation, and performing beyond prescribed roles. Therefore, we propose the following hypothesis:

H6: Employee engagement positively mediates the relationship between POS and OCB.

2.2.7 Mediating effect of psychological availability

We also suggest that POS is positively linked to psychological availability, which, in turn, enhances OCB. According to Kahn (1990) and May et al. (2004), psychological availability refers to an employee's belief that they possess the physical, emotional, and mental resources to become fully engaged at work. Present investigations indicate that managerial support positively influences employees' psychological states, leading to desirable outcomes (e.g., Maan et al., 2020).

Psychological availability has been treated as a mediating variable in many investigations. For instance, Beltrán-Martín et al. (2023), relying on the employee engagement theory, revealed that psychological availability functioned as a mechanism through which performance work systems influenced employee engagement among Spanish employees. Wan et al. (2024), based on the conservation of resource (COR) theory, also revealed that the construct mediated the relationship between perceived professional benefits and job engagement in China. These studies, apart from the contextual differences with the present investigation, had different theoretical underpinnings. Theories impact the conceptualisation of research and the explanation of findings. For example, whereas COR theory provides essential understandings into how resources offer safeguards against stress and burnout, it does not fully account for the dynamic interaction between job demands and job resources. Specifically, it overlooks how the strategic provision of resources can not only prevent resource loss but also promote psychological well-being and sustained engagement, elements that are more comprehensively addressed within the JD-R model.

A study by Li et al. (2022) found that psychological availability mediated the relationship between trait gratitude and OCB. Xu and Yang (2024) demonstrated that psychological availability mediated the effect of authentic leadership on employee well-being. Similarly, Rabiul et al. (2023) showed that psychological availability mediated the impact of human resource practices on employee engagement. Relatedly, Hashemi et al. (2025) found that psychological empowerment mediated the link between leader-empowering behaviours and employee engagement. While both psychological empowerment and psychological availability are psychological constructs, they differ. That is, empowerment involves meaning, competence, self-determination, and impact (Spreitzer, 1996), whereas psychological availability relates to self-awareness, emotional regulation, managing demands and clear thinking (Kahn, 1990; May et al., 2004). Despite rising interest in psychological constructs and OCB, few studies examine psychological availability as a mediator between POS and OCB.

Given that previous studies have established psychological availability's potential as a mediator, we aim to fill this gap by exploring its indirect effect on the relationship between POS and OCB. From the JD-R perspective, we propose that because of the challenging demands of the nurses' job, when they perceive that their organisation cares about their well-being, it may provide them with psychological resources to handle the demands of their jobs, leading to stronger psychological attachment to the organisation and greater confidence in their ability to handle work challenges. This, in turn, could make them more psychologically available, resulting in behaviours that go beyond prescribed roles. Based on empirical evidence and this theoretical reasoning, we hypothesise that:

H7: Psychological availability positively mediates the relationship between POS and OCB.

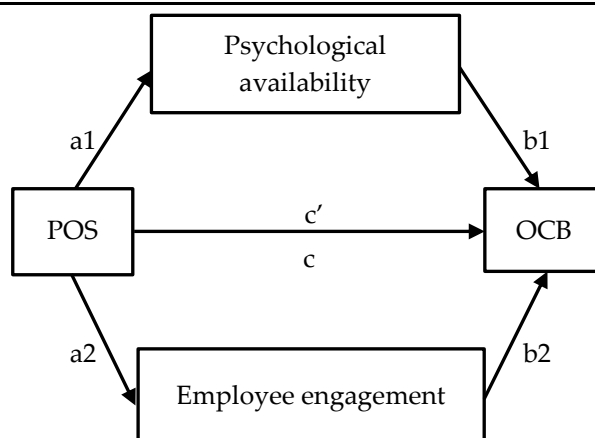


Figure 2. Conceptual model

Source: Figure by authors

The conceptual model (Figure 2) illustrates the hypothesised paths. It depicts the associations between POS and OCB, employee engagement and psychological availability, as well as the parallel mediation of psychological availability and employee engagement in the effect of POS on OCB.

3. Methods

3.1 The study population

The study targeted 37,190 public sector registered and enrolled nurses in Ghana (MOH, 2018). This focus is justified by the sector's standardized rules, centralised management, and resource constraints, which uniquely affect the constructs studied and nurse well-being, while enhancing internal validity and policy relevance.

3.2 Research approach, design, sample size and data collection

This study used a quantitative, cross-sectional design. The quantitative approach allowed the use of validated scales, standardised data collection, generalisation, and supported mediation analysis (Creswell & Creswell, 2023), which is the purpose of the study. A cross-sectional design was chosen over a longitudinal one due to limited research in this sector, making it suitable for establishing initial associations (Saunders et al., 2019).

We used Cochran's (1963) formula for large populations to determine the sample size: $n_0 = Z^2pq/e^2$, where Z^2 represents the critical value corresponding to the desired confidence level (95%), e^2 is the margin of error (5%), p is the estimated proportion of the population (maximum variability), and $q = 1 - p$. Using this formula, the calculated sample size was 385. A larger sample size is needed in multistage sampling than in simple random sampling to compensate for intra-cluster correlation (Kish, 1965). Hence, the calculated sample size was inflated by a design effect of 2 to ensure precision (Kish, 1965; Shackman, 2001). Since incomplete responses or nonresponse reduce statistical power and the risk of bias, 10% was added to minimise their possible effects (Naing et al., 2006). This yielded a final sample size of 847. The administration of questionnaires was preceded by ethical clearance (UCCIRB/CHLS/2021/07) from the Institutional Review Board of the University of Cape Coast, Ghana.

We employed a multistage sampling technique due to the geographical dispersion of the nursing population (Saunders et al., 2019). Data collection proceeded in five stages. First, we divided the country into 16 political administrative regions, which formed the sampling frame. Five regions were initially selected to represent all 16 regions. Due to the small sample size (Nardi, 2018), this figure was increased to 8 to serve as a precaution against sampling error (Gogtay, 2010) and to ensure sufficient power, statistical robustness, and external validity (Creswell & Creswell, 2023).

Second, of the 8 selected regions, 14 districts (10%) were randomly selected. Third, due to the comparatively homogeneous nature of the nursing population, 14 hospitals were randomly selected to represent each selected district. This ensured geographical coverage (Saunders et al., 2019). In the fourth stage, we compiled a sampling frame of nurses for each of the 14 selected hospitals or health facilities. In the final, questionnaires were administered to randomly selected nurses from these sampling frames.

3.3 Measurement of constructs

POS was measured using the 8-item survey of perceived organisational support (Eisenberger et al., 1986) on a 7-point Likert scale. The items include valuing contributions and caring about well-being. OCB was assessed using Podsakoff et al.'s (1990) 24-item scale on a 7-point Likert scale. The items include helping colleagues, obeying rules and exceeding

job requirements. Employee engagement was measured with Schaufeli et al.'s (2002) 17-item Utrecht Work Engagement Scale on a 7-point Likert scale. The items cover the dimensions of vigour, dedication and absorption. We used May et al.'s (2004) psychological conditions scale to assess psychological availability on a 7-point Likert scale. The items on the scale covered physical, emotional, and cognitive resources necessary to meet work demands.

The questionnaires used clear language. Before administering them, the study's purpose, voluntary participation, anonymity and confidentiality were explained. These were done to address common method bias (Podsakoff et al., 2003).

3.4 Data analysis

The investigation involved 847 respondents. 761 responses were used for the analysis because 86 incomplete responses were excluded due to over 20% missing responses (Hair et al., 2021). Preliminary data analysis relied on SPSS 21. The path coefficients and parallel mediation analyses relied on the PROCESS macro (Model 4) (Hayes, 2018). 5,000 bootstrap resamples were used to assess the indirect effects.

4. Findings

4.1 Descriptive statistics

The background characteristics of the respondents covered their gender and nursing category. Among the 761 nurses, 34.43% were male and 65.57% female. This aligns with global trends where women comprise 67% of the health workforce and 65% in Africa (Boniol et al., 2019). 71.22% of respondents were registered nurses and 28.78% were enrolled nurses.

Table 1: Demographic characteristics

Variable	Categorises	Frequency and percentage
Sex	Male	262 (34.43%)
	Female	499 (65.57%)
Type of nurse	Enrolled nurse	219 (28.78%)
	Registered nurse	542 (71.22%)
Total		761 (100 %)

Source: Table by the author

Common method bias was assessed using Harman's single-factor test (Table 2). Twelve components explained 68.55% of the variance, with the first factor accounting for 35.61%, below the 50% threshold (Podsakoff et al., 2003), indicating no significant bias.

Table 2: Total variance explained

Components	Eigenvalue	% of Variance	Cumulative %
1	22.432	35.606	35.606
2	4.524	7.181	42.787
3	2.767	4.392	47.179
4	2.246	3.566	50.745
5	2.019	3.205	53.950
6	1.771	2.811	56.761
7	1.593	2.529	59.290
8	1.331	2.112	61.402
9	1.237	1.963	63.366
10	1.151	1.827	65.193
11	1.115	1.770	66.963
12	1.002	1.591	68.554

Source: Table by the author

Table 3 shows no multicollinearity issues ($VIF < 5$) (Kock, 2015). Internal consistency is good for all variables ($\alpha > 0.7$) (Leedy & Ormrod, 2010). POS correlated positively with employee engagement ($r = 0.609$, $p < 0.01$), psychological availability ($r = 0.537$, $p < 0.01$), and OCB ($r = 0.511$, $p < 0.01$). Employee engagement was also positively correlated with psychological availability ($r = 0.728$, $p < 0.01$) and OCB ($r = 0.681$, $p < 0.01$), while psychological availability strongly correlated with OCB ($r = 0.743$, $p < 0.01$). Mean scores indicated relatively high for POS ($M = 5.06$, $SD = 1.07$), employee engagement ($M = 4.72$, $SD = 0.79$), psychological availability ($M = 5.47$, $SD = 0.93$) and OCB ($M = 4.12$, $SD = 0.61$).

Table 3: Descriptive statistics of constructs

Variable	1	2	3	4	Mean (M)	Standard Deviation (SD)	VIF
1. POS	1				5.0596	1.06551	1.637
2. Employee engagement	0.609**	1			4.7194	0.78574	2.478
3. Psychological availability	0.537**	0.728**	1		5.4728	0.93359	2.190
4. OCB	0.511**	0.681**	0.743**	1	4.1211	0.60597	
Cronbach alpha (α)	0.939	0.927	0.936	0.930			

*Correlation is significant at the 0.01 level

Source: Table by the author

4.2 Model paths for POS, employee engagement, psychological availability and OCB

Table 4 shows that POS significantly enhances OCB ($b = 0.439$, $p < 0.05$, 95% bootstrap CI [.0110, .0768]), supporting H1. Additionally, the effect of POS on employee engagement was both positive and significant ($b = 0.4490$, $p < 0.05$, 95% bootstrap CI [0.4073, 0.4906]), thus supporting H3. Furthermore, POS had a significant positive effect on psychological availability ($b = 0.4701$, $p < 0.05$, 95% bootstrap CI [0.4147, 0.5228]), supporting H5.

Table 4: Model paths for POS, employee engagement, psychological availability and OCB

Paths	Coefficient(b)	SE	T	p	LLCI	ULCI
a1	0.4701	0.0268	17.5153	0.0000	0.4147	0.5228
a2	0.4490	0.0212	21.1426	0.0000	0.4073	0.4906
b1	0.3323	0.0221	15.0104	0.0000	0.2889	0.3758
b2	0.2014	0.0280	7.1970	0.0000	0.1465	0.2563
c	0.2905	0.0177	16.3719	0.0000	0.2557	0.3254
c'	0.0439	0.0168	2.6170	0.0090	0.0110	0.0768

Source: Table by the author

Table 4 also shows that employee engagement significantly predicts OCB ($b = 0.2014$, $p < 0.05$, 95% bootstrap CI [0.1465, 0.2563]), confirming H2. Moreover, psychological availability also had a strong positive effect on OCB ($b = 0.3323$, $p < 0.05$, 95% bootstrap CI [0.2889, 0.3758]), supporting H4.

4.3 Indirect effects of employee engagement and psychological availability in the relationship between POS on OCB

The results in Table 5 indicate that the specific indirect effect of POS on organisational OCB through employee engagement was significant and positive ($b = 0.0904$, 95% bootstrap CI [0.0590, 0.1238]), confirming H6. Similarly, the mediation effect of psychological availability in the relationship between POS and OCB was also significant and positive ($b = 0.1562$, 95% bootstrap CI [0.1215, 0.1950]), supporting H7. Furthermore, the parallel mediation effect of employee engagement and psychological availability in the relationship between POS and OCB was significant and positive ($b = 0.2466$, 95% bootstrap CI [0.1988, 0.2954]).

Table 5: Model paths for POS, employee engagement, psychological availability and OCB

	Effect (b)	BootSE	BootLLCI	BootULCI
Total	0.2466	0.0247	0.1988	0.2954
Employee engagement	0.0904	0.0167	0.0590	0.1238
Psychological availability	0.1562	0.0187	0.1215	0.1950

Source: Table by the author

5. Discussion

POS significantly enhances OCB. This means nurses are more likely to help colleagues and take on extra roles when they feel supported and valued. The findings align with Alshaabani et al. (2021) but differ from those of Park and Kim (2024), possibly due to Ghana's collectivist culture, where organisational structures support interdependence and social harmony, making nurses interpret the provision of organisational supports as a call to reciprocate through discretionary behaviours, thus strengthening the correlation between POS and OCB.

The positive association between POS and employee engagement indicates that when employers show concern for nurses' well-being and recognise their contributions, they become fully absorbed in their work. This result aligns with that of Purba et al. (2023). The finding also supports the SET proposition of reciprocity, where recipients of favourable gestures (such as POS) are motivated to reciprocate (Blau, 1964).

POS also had a substantial positive effect on psychological availability. That is, as nurses receive support from their organisation, they gain greater confidence in their ability to display appropriate emotions and think clearly at work. This result aligns with the conceptual framework in Figure 2 based on the SET norm of reciprocity. Here, POS is reciprocated in kind through psychological availability. Similar findings support this finding (e.g., Heyns et al., 2021; Maan et al., 2020).

Traditionally, SET has been used to explain the association between POS and observable behaviours, including OCB. This investigation extends the theory by showing that employees can also reciprocate POS through internal psychological factors, such as employee engagement and psychological availability. This positions POS as a central predictor of favourable behaviours through multiple exchange pathways.

Employee engagement significantly predicts OCB, supporting prior research (e.g., Nuryanto & Pratiwi, 2024). Thus, engagement behaviours, such as deep absorption in work and feeling energised, equip nurses with the resources to voluntarily contribute beyond their formal roles, benefiting both themselves and the organisation (Kahn, 1990; Saks, 2006). Moreover, psychological availability also had a strong positive effect on OCB, supporting the study's framework. This suggests that nurses are more inclined to exceed role expectations when they feel mentally and emotionally ready. This result echoes findings from Wibowo (2022) and Yuwono et al. (2023).

The findings that employee engagement and psychological availability positively predicted OCB are consistent with the JD-R model and extend the theory by moving beyond traditional resources, such as self-efficacy and management support, by introducing employee engagement and psychological availability as new and understudied personal resources that contribute to enhancing work behaviours like OCB.

The results indicate that the specific indirect effect of POS on organisational OCB through employee engagement was significant and positive. This finding aligns with prior empirical evidence (Malinda & Safitri, 2023). It suggests that employee engagement serves as a mechanism through which POS is associated with OCB. When nurses perceive support from their organisation in a favourable light, they gain psychological resources, such as increased dedication, passion, and immersion in their roles, which, in turn, encourage them to engage in OCB.

Similarly, the mediation effect of psychological availability in the relationship between POS and OCB was significant and positive. This places psychological availability as an essential mediator variable in the connection between POS and OCB. This means that the beneficiaries of POS (e.g., nurses) gain psychological resources to handle job demands, boosting their confidence in their ability to display appropriate emotions and think clearly, propelling their capacity to engage in OCB.

The results revealed that employee engagement and psychological availability were positive and substantial parallel mediators in the relationship between POS and OCB. These findings agree with the JD-R model. In line with the main assumption of the model, the demanding nature of nurses' jobs places psychological demands on them. POS, then, provides them with the appropriate resources (psychological availability and employee engagement), each of which can lead to OCB. The results also align with the integration of the SET (Blau, 1964) and the JD-R model (Demerouti et al., 2001). Specifically, employees' need to reciprocate in response to POS is enhanced by psychological availability and employee engagement (job resources), suggesting that these two factors, as parallel mechanisms, significantly explain the relationship between POS and OCB.

6. Conclusion and implications

This study aimed to evaluate employee engagement and psychological availability as mediators in the effect of POS on OCB among nurses in Ghana. The results showed that POS promoted employee engagement, psychological availability and OCB. Both mediators explained the process through which POS is connected to OCB. These findings, which revealed the role of non-financial incentives in stimulating positive discretionary behaviours, have theoretical, empirical, practical and policy implications.

Theoretically, our findings help clarify how POS, employee engagement, and psychological availability influence nurses' discretionary actions, in line with the SET and JD-R theories. Empirically, we have shown that POS affects OCB both directly and indirectly through engagement and psychological availability. Practically, the results emphasise the necessity for managers to prioritise plans that strengthen POS. This will permit them to nurture employee engagement and psychological readiness among nurses. In terms of policy, this implies that creating work environments that are supportive can result in positive psychological experiences that tend to translate into performance beyond prescribed roles, thereby improving healthcare outcomes.

In order to realise the above, healthcare administrators should offer annual refresher training for nurse managers on POS. This would reinforce its role as a motivational tool. This can help boost POS, dedication, and confidence in nurses'

abilities. Besides, focusing on non-financial strategies, such as counselling and empathetic supervision, can be used to improve POS, engagement, and psychological readiness.

7. Limitations and directions for future research

Despite the contributions of this investigation, it has some limitations. The cross-sectional design prevents the establishment of causality. Future investigations should focus on longitudinal designs. Additionally, the focus on nurses in Ghana limits generalisability. Future research could explore these relationships across diverse healthcare professionals and in different cultural or job settings. Lastly, reliance on self-reported data introduces biases. This could be mitigated in future research by using multiple data sources, such as supervisor or peer.

Declarations

Funding

None

Ethical approval

The ethical clearance with reference number UCCIRB/CHLS/2021/07 was obtained from the Institutional Review Board of the University of Cape Coast, Ghana.

Authors' contributions

Samuel Kwesi Cudjor: Conceptualisation of the study, methodology and design, led interpretation of results, played major role in revising the manuscript critically for intellectual content, writing (review and editing) and leadership in the entire research process. **Grace Opata:** Investigation, Data curation, Methodology, key role in original draft, writing (review and editing) and validation. **Bertha Adwoa Twiba Taylor:** Investigation, formal analysis, turning results from software into table, writing (review and editing) and validation. All authors have read and approved the final version of the manuscript. They have accepted to be responsible for all sections of the whole work.

Consent to publish

All the authors have consented to publish the article.

Consent to participate

All participants consented to participate in the investigation.

Competing interest

The authors reported no potential conflict of interest.

Data availability

Data is available upon reasonable request.

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