

Examining Engagement and Commitment as Pathways Linking Servant Leadership and Career Development to Employee Voice Behaviour in Indonesian State Polytechnics

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Abstract

This research explores how servant leadership and career development practices shape the tendency of employees to speak up within State Polytechnics in East Java, Indonesia. Guided by the Stimulus–Organism–Response (SOR) framework, the study collects data from 182 administrative staff across seven institutions using a structured questionnaire, and analyses the relationships through PLS-SEM. The findings show that when leaders adopt a servant-oriented approach and organisations offer clear opportunities for career growth, employees become more engaged and more committed to their institutions. These heightened psychological states subsequently encourage employees to express ideas, concerns, and suggestions more proactively. Engagement and commitment act as crucial explanatory links between leadership, development opportunities, and voice behaviour. The study highlights the need for public higher education institutions to strengthen leadership practices and career development systems in order to cultivate a more participatory and responsive workforce. Additionally, by applying the SOR model in a hierarchical, non-Western organisational environment, the study demonstrates its broader relevance and stresses the importance of adapting leadership and development strategies to cultural contexts.

Keywords: Employee engagement, Career development policy, Employee voice behaviour, Servant leadership, Indonesia, Organisational commitment, Stimulus–organism–response

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Introduction

In today's organisations, creating an environment where employees feel able to express their ideas and concerns is increasingly recognised as essential for long-term effectiveness and innovation. Employee voice behaviour refers to voluntary communication—such as offering suggestions, raising concerns, or proposing improvements—that aims to benefit the organisation [1, 2]. This behaviour encompasses generating new ideas, experimenting with alternative approaches, solving work-related problems, and participating in initiatives that support innovation [3]. Research consistently shows that encouraging employees to speak up contributes to innovation, job satisfaction, organisational commitment, and lower turnover intentions, ultimately strengthening organisational sustainability [3-5]. When employees perceive that their voices matter, they are more likely to engage constructively and feel valued in the workplace [2]. As organisations navigate increasingly complex environments, tapping into employees' insights becomes critical [6, 7].

Previous studies on voice behaviour have examined numerous antecedents, including psychological safety, leadership styles, and perceptions of organisational justice. Employees are more willing to speak up when they feel safe to do so, but they

remain silent when they believe that expressing their views could carry risks [8, 9]. Leadership and human resource practices have also been shown to influence whether employees choose to voice their ideas [3, 10, 11].

Despite these contributions, several gaps remain in the literature. First, much of what is known about employee voice is based on Western research contexts, limiting the applicability of findings to regions with different cultural and organisational norms [12]. Indonesia, for example, is characterised by collectivism and a high degree of power distance [13]. These cultural traits reinforce hierarchical relationships and place strong emphasis on preserving social harmony, which may discourage employees from challenging authority or questioning decisions [14]. Consequently, individuals may avoid voicing concerns for fear of negative consequences or being perceived as disrespectful. This contrasts with Western settings, where open communication and egalitarianism are more common [15]. Differences in leadership expectations, communication norms, and empowerment practices underscore the importance of studying voice behaviour within Indonesia's cultural context rather than assuming that Western findings apply universally.

Second, many studies have focused primarily on direct relationships between leadership or organisational policies and voice, with comparatively little attention to the psychological mechanisms that may explain these relationships [16]. Factors such as employee engagement and organisational commitment may play important mediating roles, yet they are often overlooked. Furthermore, most existing research has examined private sector organisations, leaving limited understanding of how these processes unfold in public sector environments.

The present study addresses these gaps by developing a comprehensive model that explores how servant leadership and career development policies indirectly shape employee voice behaviour through their influence on employee engagement and organisational commitment. To our knowledge, no previous study has examined these four variables simultaneously within a single framework. The model draws on Stimulus–Organism–Response (SOR) theory [17], which posits that environmental conditions (servant leadership and career development opportunities) affect employees' internal states (engagement and commitment), which then drive behavioural responses (voice behaviour).

This research focuses on State Polytechnics in East Java, Indonesia—public institutions that play a strategic role in vocational education and the development of skilled labour [18]. Public sector organisations in Indonesia typically operate within rigid hierarchies and bureaucratic systems [19], conditions that may further constrain employees' willingness to speak up. Strict adherence to rules, formal communication channels, and reluctance to question authority are common characteristics [20]. In addition, because public organisations prioritise service delivery rather than profit generation, they may emphasise compliance and stability over innovation [21]. These distinctions highlight the need to investigate how leadership, career development, engagement, commitment, and voice operate in this unique organisational setting.

Overall, this study contributes to both theory and practice by applying the SOR framework in a non-Western, collectivist, and hierarchical public sector environment. By examining both direct and mediating relationships, the study sheds light on the psychological processes that connect leadership and organisational policies to voice behaviour. The findings offer valuable insights for designing leadership and development practices that encourage supportive and open work environments in Indonesia's public institutions.

The remainder of the paper proceeds as follows. The next section outlines the theoretical foundation and develops the hypotheses. Section three describes the research methods. The results are then presented and followed by a discussion of the key findings. The fifth section highlights the practical and theoretical implications, acknowledges the study's limitations, and suggests avenues for future research. The paper concludes with a synthesis of the main contributions.

Theoretical Background

This study explores how servant leadership and career development policies relate to employee voice behaviour, with employee engagement and organisational commitment acting as the intervening mechanisms. The analysis is grounded in the Stimulus–Organism–Response (SOR) framework, which provides a systematic way to explain how external organisational conditions influence employees' internal psychological states and ultimately shape their behavioural reactions. Within organisational behaviour research, the SOR model is particularly valuable because it highlights the central role of employees' internal interpretations in translating external environments into actions [22, 23].

Applying the SOR framework enables this study to conceptualise servant leadership and career development initiatives as external stimuli that shape employees' internal states—namely engagement and commitment. These internal conditions then form the basis for behavioural responses, such as employee voice. The model therefore supports the study's goal of revealing the psychological processes through which leadership practices and organisational policies influence proactive employee behaviour.

Emphasising employee perceptions is crucial because what employees *believe* about leadership or career-related support often drives behaviour more strongly than objective organisational realities [22]. Although two employees may be exposed to the same leadership style or career systems, their interpretations may differ—and these subjective appraisals determine the extent to which they feel engaged, committed, or motivated to speak up. Focusing on perceptions thus allows this study to capture

the personal sense-making processes that shape voice behaviour, which is inherently discretionary and varies widely between individuals [2].

Voice behaviour, as an individual-level phenomenon, is strongly influenced by an employee's psychological readiness to express concerns or suggestions. Engagement and commitment—two central psychological states—are likely to be shaped by perceptions of leadership and organisational policies. Understanding these internal mediators is therefore essential for explaining why some employees choose to speak up while others remain silent.

Stimulus–Organism–Response (SOR) Theory

The Stimulus–Organism–Response (SOR) theory, introduced by Mehrabian and Russell [17], offers a holistic explanation of how environmental factors shape behaviour through internal psychological processes. Although rooted in earlier stimulus–response models, the SOR framework advanced behavioural theory by adding the *organism* component, acknowledging that individuals interpret and process stimuli before exhibiting behavioural responses. This internal mediating state includes emotions, perceptions, attitudes, cognitions, and motivations—variables central to organisational behaviour research [17]. Over time, the SOR framework has been widely applied in psychology, marketing, and organisational studies to examine complex behavioural processes influenced by environmental cues [24-29].

In this study, the *stimuli* (S) refer to two organisational conditions: servant leadership and career development policy. Servant leadership emphasises leaders' commitment to employee growth and wellbeing, cultivating an empowering and supportive work climate [30]. Career development policies encompass programs and structures that help employees build skills, pursue opportunities, and advance within the organisation [31]. Both factors are external inputs that have the potential to shape how employees feel about their work and organisation.

The *organism* (O) component represents employees' internal psychological states—in this study, employee engagement and organisational commitment. Engagement reflects a positive, energetic, and absorbed state relating to one's work [32], whereas organisational commitment captures the emotional and psychological connection employees develop with their organisation [33]. These internal states function as interpretive filters through which employees process external stimuli.

The *response* (R) in this research is employee voice behaviour, referring to voluntary expressions of ideas or concerns aimed at improving the organisation [2]. Voice behaviour supports organisational learning, facilitates innovation, and strengthens problem-solving capacities [6].

Using the SOR framework, this study proposes that servant leadership and career development policies influence employee voice behaviour indirectly through their effects on engagement and commitment. This approach illuminates how external organisational conditions are translated into proactive employee actions via internal psychological mechanisms.

Hypotheses

Servant leadership and employee engagement

Servant leadership is characterised by a leader's commitment to placing the growth and wellbeing of employees at the forefront [34-37]. Rather than leading for personal authority or influence, servant leaders view leadership as a responsibility to support others. This leadership style fosters trust, dignity, and empowerment—conditions known to encourage employees to immerse themselves more fully in their work [30]. From the perspective of the Stimulus–Organism–Response (SOR) theory, servant leadership functions as an external stimulus (S) that nurtures positive internal states (O), which subsequently manifest in stronger engagement (R).

Extensive empirical research supports the idea that servant leadership provides a fertile environment for employee engagement. van Dierendonck [37] highlights servant leadership's core attributes—such as humility, empowerment, and authenticity—as drivers of employee vitality and involvement. By intentionally supporting employees' personal and professional growth, servant leaders cultivate a workplace climate where individuals feel respected, motivated, and psychologically invested in their work.

More recent studies reinforce these findings. Canavesi and Minelli [38] observe that servant leadership strengthens team cohesion and contributes to positive organisational climates, both of which foster emotional bond and engagement. Song *et al.* [12] similarly report that employees who perceive their leaders as servant-oriented are more inclined to devote emotional and cognitive resources to their work. Their results suggest that feeling genuinely supported increases employees' willingness to engage.

Zeeshan *et al.* [39] also find a positive relationship between servant leadership and engagement, arguing that this leadership style enhances employees' confidence and sense of competence—factors that heighten intrinsic motivation. In academic environments, servant leadership has been shown to promote teachers' engagement by cultivating belonging and reinforcing their commitment to teaching roles [40].

Together, the SOR theory and existing empirical work suggest that servant leadership promotes a supportive and empowering environment that facilitates employee engagement. Therefore, the study proposes:

Hypothesis 1 (H1): Servant leadership positively influences employee engagement.

Career development policy and employee engagement

Career development policies refer to a spectrum of organisational practices that guide and support employees' career growth, including structured training, career counselling, skill enhancement initiatives, and clear pathways for advancement [41-43]. These policies often include opportunities for further education, transparent communication about internal job openings, and ongoing assessments of employees' strengths and aspirations. Collectively, these efforts signal the organisation's commitment to helping employees build sustainable and fulfilling careers.

Perceived opportunities for career development are powerful motivators that can strengthen employees' emotional connection to their work. When employees believe that their organisation is investing in their growth, they are more inclined to feel valued and to respond with higher engagement [31]. Within the SOR framework, career development policies operate as stimuli (S) that enhance internal states (O) such as motivation and engagement.

While employee development is often conceptually linked to engagement [44], empirical work focusing specifically on career development policies remains relatively limited [45]. However, the studies that do exist demonstrate a positive association. Organisations with clear, accessible, and supportive career development initiatives tend to report higher levels of employee engagement and commitment [46-49]. These policies fulfil employees' long-term growth expectations, reinforcing their sense of value and encouraging deeper involvement in their work.

Based on these insights, career development policies can be viewed as key organisational stimuli that shape employees' internal psychological states in a favourable manner. Therefore, the study proposes:

Hypothesis 2 (H2): Career development policy positively influences employee engagement.

Servant leadership and organisational commitment

Organisational commitment reflects the extent to which employees feel psychologically connected to their organisation [33, 49, 50]. According to Meyer and Allen's [33] framework, this attachment is expressed through three parallel mindsets: affective commitment (emotional attachment arising from positive experiences), normative commitment (a felt sense of duty or obligation), and continuance commitment (commitment based on the perceived costs of leaving).

Using the Stimulus–Organism–Response (SOR) perspective, servant leadership can be viewed as the stimulus (S) that shapes employees' internal psychological states (O), ultimately increasing their organisational commitment. Because servant leaders emphasise care, trust, empowerment, and ethical behaviour, employees tend to respond with stronger loyalty and identification with the organisation. Empirical evidence consistently supports this dynamic. Walumbwa *et al.* [51] showed that servant leadership nurtures a profound sense of belonging and loyalty. Similarly, Khan *et al.* [52] observed that when leaders provide emotional and social support, employees are more likely to form an emotional bond with the organisation. Howladar and Rahman [53] further found that empowering behaviours from servant leaders promote employees' sense of responsibility and dedication.

More recent work reinforces these insights. Ghayas *et al.* [54] reported that servant leaders create trust-rich environments that encourage commitment. Zhou *et al.* [55] also found that servant leadership significantly strengthens new employees' affective commitment by offering supportive mentorship and alignment with organisational values. Together, this evidence positions servant leadership as a powerful SOR stimulus capable of fostering stronger organisational commitment.

Hypothesis 3 (H3): Servant leadership positively influences organisational commitment.

Career development policy and organisational commitment

Career development policies play a crucial role in strengthening employees' attachment to their organisation. When employees perceive that their organisation actively supports their professional progression and future opportunities, they are more likely to feel committed and aligned with organisational objectives. Within the SOR framework, these policies function as a stimulus (S) that shapes employees' internal states, such as their sense of commitment (O).

Prior studies indicate that well-structured career development initiatives — including transparent promotion pathways, training programs, and skill-building opportunities — significantly enhance organisational commitment [56, 57]. When employees believe their career aspirations are acknowledged and supported, they tend to reciprocate through greater loyalty and desire to remain with the organisation.

Hypothesis 4 (H4): Career development policy positively influences organisational commitment.

Employee engagement and employee voice behaviour

Employee engagement, as described by Schaufeli *et al.* [32], is a positive psychological state demonstrated through vigour, dedication, and absorption. Vigour reflects high energy and persistence; dedication involves enthusiasm, pride, and a sense of purpose; and absorption indicates deep concentration and immersion in work tasks.

Within the SOR model, engagement represents the organism (O)—the internal condition shaped by external stimuli—which then influences employees’ behavioural responses. One such response is voice behaviour, defined as the proactive and voluntary communication of ideas, suggestions, concerns, or solutions intended to improve organisational functioning [1, 2]. This includes proposing innovative ideas, identifying issues, experimenting with better approaches, and supporting organisational improvement initiatives [3].

Numerous studies have found a robust link between engagement and employee voice. Engaged employees are more psychologically invested in their work, making them more willing to speak up constructively [12, 58, 59]. This relationship highlights the central role of internal psychological states (O) in driving productive organisational behaviours (R).

Hypothesis 5 (H5): Employee engagement positively influences employee voice behaviour.

Organisational commitment and employee voice behaviour

Organisational commitment—especially its affective component—is a strong predictor of voice behaviour. Employees who feel emotionally attached and loyal to their organisation are more inclined to offer suggestions and express concerns to support organisational improvement [2]. The SOR theory positions organisational commitment as an organism-level factor (O) that mediates the effect of external conditions on behavioural outcomes (R).

Research has shown that committed employees are more likely to speak up because they genuinely care about the organisation’s success and feel responsible for contributing to its improvement [60].

Hypothesis 6 (H6): Organisational commitment positively influences employee voice behaviour.

Mediating role of employee engagement and organisational commitment

Rather than assuming that organisational practices directly trigger employee voice, this study argues that employees’ psychological conditions are the true engines behind their willingness to speak up. Drawing on the SOR logic, leadership behaviour and career-related policies are treated as contextual signals that employees interpret before deciding how to act.

In practical terms, when employees observe leaders who prioritise their growth, or when they see clear pathways for career advancement, these conditions are likely to shape how they feel about their work and their organisation. Such signals are expected to generate two key internal reactions: a heightened sense of involvement in their work (engagement) and a deeper emotional bond with the organisation (commitment). These reactions, not the stimuli themselves, are theorised to be the immediate drivers of voice behaviour.

Evidence from prior studies reinforces this sequence. Proactive behaviours such as speaking up appear more often when employees feel energised, absorbed, or personally invested in their roles [12, 38, 61]. Similarly, development-oriented HR practices consistently strengthen both engagement [31] and commitment [56, 57], which in turn encourage employees to express ideas or concerns. These findings collectively suggest that engagement and commitment serve as the psychological “bridge” translating organisational conditions into action.

On the basis of this logic, the study formulates the following mediation hypotheses:

H7: Employee engagement channels the influence of servant leadership on employee voice.

H8: Employee engagement channels the influence of career development policy on employee voice.

H9: Organisational commitment transmits the effect of servant leadership on employee voice.

H10: Organisational commitment transmits the effect of career development policy on employee voice.



Figure 1. The research model

Materials and Methods

Research design

A quantitative, theory-driven approach was employed to investigate how servant leadership and career development policies shape employee voice, and whether engagement and organisational commitment function as explanatory mechanisms. The study was grounded in the Stimulus–Organism–Response (SOR) framework, which argues that contextual cues within the organisation—here, leadership behaviours and development policies—affect employees’ psychological states, which subsequently influence behavioural outcomes. This framework provided a basis for assessing the sequential linkages between organisational practices, employees’ internal conditions, and their discretionary communication behaviours within public polytechnic institutions.

Ethical considerations

Ethical approval was obtained from the Institute of Research and Community Services at the University of Brawijaya. All participants received an informed consent form explaining the study’s objectives, the voluntary nature of participation, the confidentiality of their responses, and their right to withdraw at any stage without penalty.

Sampling and data collection

Participants were recruited using a convenience sampling strategy. Eligible respondents were full-time employees with at least one year of tenure, ensuring that individuals had adequate exposure to their institution’s leadership practices and career development initiatives. Data were collected through an online questionnaire completed by non-teaching staff across seven state polytechnics in East Java.

Employees were selected as the sole data source because the focal variables—engagement, commitment, and voice behaviour—reflect internal psychological processes and subjective evaluations best reported by employees themselves. Consistent with the SOR perspective, understanding how organisational features are interpreted and internalised by employees is essential for explaining subsequent behavioural responses.

The online survey format allowed respondents to complete the instrument flexibly. The required sample size was determined according to PLS-SEM recommendations by Hair *et al.* [62] Based on the most complex part of the model (two predictors for a single construct), with an assumed minimum R^2 of 0.10, a 5% significance level, and 80% statistical power, the minimum

sample size was 90. To enhance the robustness of the analysis, responses were gathered from 182 employees—well above the recommended threshold.

Demographic information for the sample is presented in **Table 1**.

Table 1. Demographic characteristics of the respondents.

| Demographic variable | Category | Frequency | Percentage (%) |
|----------------------|---------------------------|-----------|----------------|
| Gender | Male | 110 | 60.4 |
| | Female | 72 | 39.6 |
| Age (years) | <25 | 3 | 1.65 |
| | 23–35 | 49 | 26.92 |
| | >35–45 | 80 | 43.96 |
| Education level | >45 | 50 | 27.47 |
| | Senior high school | 22 | 12.09 |
| | Diploma | 46 | 25.27 |
| | Bachelor's degree | 91 | 50 |
| | Master's degree | 22 | 12.09 |
| Tenure (years) | Doctoral's degree | 1 | 0.55 |
| | 1–5 | 51 | 28.02 |
| | >5–10 | 28 | 15.38 |
| Employment status | >10 | 103 | 56.60 |
| | Government employees | 160 | 87.91 |
| | Non- government employees | 22 | 12.09 |

Demographic characteristics

Table 1 illustrates the demographic profile of the respondents. The sample was composed largely of male employees, who represented a marginal majority. The age distribution leaned toward mature workers, with the highest proportion falling between 35 and 45 years of age, followed closely by those older than 45. Younger employees—particularly those below 25—were only minimally represented.

In terms of educational background, approximately half of the respondents held a Bachelor's degree, making it the most common qualification. Diploma holders constituted the second-largest group, while those with senior high school and Master's degrees appeared in similar proportions. Only a very small number of individuals possessed doctoral qualifications. Work tenure was generally extensive; more than half of the employees reported over a decade of service, suggesting a long-standing and experienced workforce. Employees with one to five years of tenure comprised a smaller share, and those with five to ten years formed an intermediate group. The workforce was predominantly made up of government employees, with non-government staff representing only a modest portion of the sample. Overall, the demographic composition reflects a stable, experienced, and comparatively well-educated employee population within the participating institutions.

Survey instrument

The questionnaire employed in this study was developed using validated measurement scales from prior research, with all items rated on a 5-point Likert scale. The specific instruments used for each construct are summarised below, with full items provided in the appendix.

- 1. Servant Leadership:** Measured using the multidimensional instrument by Liden *et al.* [30], which evaluates aspects such as empowerment, emotional healing, conceptual competence, ethical conduct, and support for subordinate growth.
- 2. Career Development Policy:** Assessed using an adapted version of the scale from Li *et al.* [42], capturing employees' perceptions of career development value and availability.
- 3. Employee Engagement:** Measured with items adapted from Schaufeli *et al.* [32], covering vigour, dedication, and absorption.
- 4. Organisational Commitment:** Evaluated using Meyer and Allen's [33] three-component model, encompassing affective, continuance, and normative commitment.
- 5. Employee Voice Behaviour:** Assessed through the scale by Maynes and Podsakoff [63], which captures key dimensions of constructive and supportive voice.

To ensure semantic equivalence, the items were translated from English to Indonesian using a forward-translation by a bilingual expert familiar with organisational research terminology. An independent bilingual expert then performed a back-translation following Brislin's [64] guidelines. Any inconsistencies were discussed and resolved to maintain the intended meaning and conceptual clarity of the measurement items.

Type of latent variables

All constructs—servant leadership, career development policy, employee engagement, organisational commitment, and employee voice behaviour—were specified as second-order reflective—reflective constructs. In this modelling approach, both the higher-order construct and its underlying first-order dimensions are reflective. This specification is suited to multidimensional concepts where changes in the overarching construct are expected to manifest consistently in its subdimensions. The approach aligns with recommendations from Henseler [65] and Sarstedt *et al.* [66] for capturing hierarchical constructs within behavioural research.

Common method bias

Because the data were collected from a single source at one point in time, the potential for Common Method Bias (CMB) was carefully considered. Procedurally, anonymity and confidentiality were assured to participants—an approach shown to decrease social desirability bias and encourage candid responses [22, 67].

Statistically, CMB was assessed using the Full Collinearity Variance Inflation Factor (VIF) technique, as recommended by Kock and Lynn [68] and Kock and Gaskins [69]. This method evaluates collinearity among latent constructs; values within acceptable thresholds indicate that CMB is unlikely to compromise the validity of the results.

Data analysis

A quantitative analytical approach was adopted to address the study's explanatory aims and to evaluate the hypotheses. Partial Least Squares—Structural Equation Modelling (PLS-SEM) served as the core analytical technique. This method was selected because it can accommodate non-normal data, handle modest sample sizes, and estimate complex models involving multiple latent variables and hierarchical constructs [62, 70]. PLS-SEM is particularly advantageous for prediction-focused research and for examining multifaceted causal pathways among constructs, which aligns with the objectives of this study.

All constructs were specified as reflective, where the indicators are manifestations of the underlying latent variable rather than its components [62]. Given its strong compatibility with reflective measurement models, PLS-SEM was an appropriate choice for capturing the influence of servant leadership and career development policy on employee engagement, organisational commitment, and voice behaviour [70, 71]. The hierarchical structure of the model—which includes second-order latent variables—could also be effectively estimated using this method. Data analysis was carried out using SmartPLS version 3.0.

Measurement model assessment

Before evaluating the structural relationships, the measurement model was assessed to ensure the reliability and validity of the constructs. As the study utilised reflective—reflective second-order constructs, both higher-order (HO) and lower-order (LO) components were examined.

The assessment followed established guidelines outlined by Hair *et al.* [72]. Indicator reliability was evaluated using outer loadings, with values of 0.70 or higher considered ideal. Indicators loading between 0.40 and 0.70 were retained only if their removal would compromise content validity or weaken the construct's conceptual completeness.

Internal consistency reliability was assessed using Cronbach's alpha, composite reliability, and the reliability coefficient, with acceptable values ranging from 0.70 to 0.90. Convergent validity was confirmed through the Average Variance Extracted (AVE), which must exceed 0.50, indicating that a construct explains the majority of variance in its indicators.

Discriminant validity was also examined to ensure conceptual distinctiveness among the constructs. The study relied on the Heterotrait–Monotrait Ratio (HTMT), which is widely recommended for PLS-SEM due to its superior accuracy in detecting discriminant validity issues. HTMT values should fall below 0.85 or 0.90, depending on the theoretical distinction between constructs [72].

Lower-Order Constructs (LOC)

Table 2 presents the evaluation of the LOCs, including the outer loadings, reliability indices, and AVE values, which collectively confirm the adequacy of the measurement model at the lower-order level.

Table 2. Measurement model assessment—lower-order construct (LOC)

| Variable | Indicators | Number of items | Item deleted | Items | Loading | AVE | Composite reliability | Cronbach's Alpha | CR (rho_a) |
|--------------------|------------|-----------------|--------------|--------|---------|-------|-----------------------|------------------|------------|
| Servant leadership | SL.1 | 5 | 1 | SL.1.1 | 0.656 | | | | |
| | | | | SL.1.2 | 0.844 | 0.639 | 0.889 | 0.812 | 0.847 |
| | | | | SL.1.3 | 0.843 | | | | |
| | | | | SL.1.4 | 0.838 | | | | |
| | SL.2 | 4 | 0 | SL.2.1 | 0.812 | | | | |
| | | | | SL.2.2 | 0.917 | 0.753 | 0.924 | 0.889 | 0.894 |
| | | | | SL.2.3 | 0.840 | | | | |
| | | | | SL.2.4 | 0.896 | | | | |

| | | | | | Constructs | | | |
|---------------------------|-------|---|---|---------|------------|------------|------------|------------|
| | | | | | Constructs | | Constructs | |
| | | | | | Constructs | Constructs | Constructs | Constructs |
| | | | | | | | | |
| Career development policy | SL.3 | 4 | 1 | SL.3.1 | 0.850 | | | |
| | | | | SL.3.2 | 0.897 | 0.739 | 0.894 | 0.823 |
| | | | | SL.3.3 | 0.830 | | | 0.831 |
| | SL.4 | 4 | 1 | SL.4.1 | 0.913 | | | |
| | | | | SL.4.3 | 0.892 | 0.753 | 0.940 | 0.903 |
| | | | | SL.4.4 | 0.941 | | | 0.906 |
| | SL.5 | 4 | 0 | SL.5.1 | 0.898 | | | |
| | | | | SL.5.2 | 0.918 | 0.784 | 0.936 | 0.908 |
| | | | | SL.5.3 | 0.901 | | | 0.907 |
| | SL.6 | 4 | 1 | SL.5.4 | 0.823 | | | |
| | | | | SL.6.1 | 0.891 | | | |
| | | | | SL.6.2 | 0.901 | 0.770 | 0.909 | 0.850 |
| | CDP.1 | 9 | 4 | SL.6.4 | 0.839 | | | 0.855 |
| | | | | CDP.1.1 | 0.859 | | | |
| | | | | CDP.1.2 | 0.856 | | | |
| Employee engagement | CDP.2 | 9 | 3 | CDP.1.6 | 0.875 | 0.713 | 0.925 | 0.899 |
| | | | | CDP.1.8 | 0.861 | | | 0.901 |
| | | | | CDP.1.9 | 0.768 | | | |
| | EE.1 | 6 | 2 | CDP.2.1 | 0.819 | | | |
| | | | | CDP.2.3 | 0.845 | | | |
| | | | | CDP.2.5 | 0.672 | 0.685 | 0.932 | 0.907 |
| | EE.2 | 5 | 1 | CDP.2.6 | 0.845 | | | 0.911 |
| | | | | CDP.2.7 | 0.877 | | | |
| | | | | CDP.2.9 | 0.850 | | | |
| | EE.3 | 5 | 0 | EE.1.1 | 0.878 | | | |
| | | | | EE.1.2 | 0.923 | 0.774 | 0.931 | 0.902 |
| | | | | EE.1.3 | 0.857 | | | 0.904 |
| Organisational commitment | EE.2 | 5 | 1 | EE.1.6 | 0.659 | | | |
| | | | | EE.2.2 | 0.896 | | | |
| | | | | EE.2.3 | 0.888 | 0.793 | 0.942 | 0.913 |
| | EE.3 | 5 | 0 | EE.2.4 | 0.870 | | | 0.913 |
| | | | | EE.2.5 | 0.907 | | | |
| | | | | EE.3.1 | 0.749 | | | |
| | OC.1 | 6 | 3 | EE.3.2 | 0.727 | | | |
| | | | | EE.3.3 | 0.732 | 0.618 | 0.889 | 0.845 |
| | | | | EE.3.4 | 0.843 | | | 0.856 |
| | OC.2 | 6 | 2 | EE.3.5 | 0.868 | | | |
| | | | | OC.1.1 | 0.871 | | | |
| | | | | OC.1.2 | 0.619 | 0.638 | 0.902 | 0.711 |
| Employee voice behaviour | OC.3 | 6 | 1 | OC.1.3 | 0.879 | | | 0.769 |
| | | | | OC.2.1 | 0.778 | | | |
| | | | | OC.2.2 | 0.639 | 0.553 | 0.819 | 0.752 |
| | EVB.1 | 4 | 0 | OC.2.3 | 0.795 | | | 0.814 |
| | | | | OC.2.4 | 0.754 | | | |
| | | | | OC.3.2 | 0.596 | | | |
| | EVB.2 | 5 | 1 | OC.3.3 | 0.816 | | | |
| | | | | OC.3.4 | 0.837 | 0.628 | 0.911 | 0.846 |
| | | | | OC.3.5 | 0.898 | | | 0.861 |
| | EVB.1 | 4 | 0 | OC.3.6 | 0.784 | | | |
| | | | | EVB.1.1 | 0.847 | | | |
| | | | | EVB.1.2 | 0.877 | 0.737 | 0.918 | 0.881 |
| | EVB.2 | 5 | 1 | EVB.1.3 | 0.863 | | | 0.882 |
| | | | | EVB.1.4 | 0.847 | | | |
| | | | | EVB.2.1 | 0.875 | | | |
| | EVB.1 | 4 | 0 | EVB.2.2 | 0.913 | | | |
| | | | | EVB.2.4 | 0.900 | 0.792 | 0.938 | 0.913 |
| | | | | EVB.2.5 | 0.872 | | | 0.914 |

As seen from **Table 2**, all items retained have met the criteria outlined by Hair *et al.* [72]. **Table 3** shows the HTMT values for the LOC.

Table 3. Heterotrait-Monotrait ratio (HTMT)—lower order construct (LOC)

| | SL.1 | SL.2 | SL.3 | SL.4 | SL.5 | SL.6 | CDP. 1 | CDP. 2 | EE.1 | EE.2 | EE.3 | OC. 1 | OC. 2 | OC. 3 | EVB. 1 |
|-----------|------|------|------|------|------|------|-----------|-----------|-------|-------|------|----------|----------|----------|-----------|
| SL.1 | | | | | | | | | | | | | | | |
| SL.2 | 0.68 | | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | |
| SL.3 | 0.68 | 0.86 | | | | | | | | | | | | | |
| | 6 | 8 | | | | | | | | | | | | | |
| SL.4 | 0.70 | 0.74 | 0.85 | | | | | | | | | | | | |
| | 3 | 9 | 3 | | | | | | | | | | | | |
| SL.5 | 0.71 | 0.68 | 0.71 | 0.83 | | | | | | | | | | | |
| | 8 | 6 | 8 | 0 | | | | | | | | | | | |
| SL.6 | 0.56 | 0.79 | 0.80 | 0.85 | 0.76 | | | | | | | | | | |
| | 4 | 1 | 2 | 8 | 0 | | | | | | | | | | |
| CDP. 1 | 0.30 | 0.24 | 0.46 | 0.43 | 0.37 | 0.40 | | | | | | | | | |
| | 5 | 8 | 8 | 1 | 6 | 9 | | | | | | | | | |
| CDP. 2 | 0.61 | 0.69 | 0.67 | 0.76 | 0.77 | 0.68 | 0.379 | | | | | | | | |
| EE.1 | 0.31 | 0.49 | 0.52 | 0.53 | 0.58 | 0.58 | | | 0.468 | 0.602 | | | | | |
| | 6 | 0 | 6 | 6 | 1 | 6 | | | | | | | | | |
| EE.2 | 0.25 | 0.38 | 0.49 | 0.46 | 0.49 | 0.50 | | | 0.578 | 0.506 | 0.87 | | | | |
| | 0 | 1 | 6 | 1 | 0 | 6 | | | | | 7 | | | | |
| EE.3 | 0.32 | 0.32 | 0.40 | 0.38 | 0.53 | 0.39 | | | 0.389 | 0.463 | 0.72 | 0.79 | | | |
| | 4 | 9 | 8 | 1 | 1 | 7 | | | | | 0 | 6 | | | |
| OC.1 | 0.41 | 0.59 | 0.64 | 0.62 | 0.53 | 0.66 | | | 0.470 | 0.642 | 0.68 | 0.74 | 0.71 | | |
| | 5 | 7 | 1 | 6 | 3 | 1 | | | | | 4 | 6 | 0 | | |
| OC.2 | 0.24 | 0.31 | 0.30 | 0.24 | 0.24 | 0.27 | | | 0.265 | 0.272 | 0.34 | 0.42 | 0.51 | 0.65 | |
| | 7 | 5 | 2 | 2 | 6 | 7 | | | | | 4 | 5 | 8 | 1 | |
| OC.3 | 0.41 | 0.45 | 0.46 | 0.53 | 0.45 | 0.54 | | | 0.420 | 0.538 | 0.55 | 0.56 | 0.46 | 0.78 | 0.54 |
| | 3 | 6 | 9 | 1 | 7 | 8 | | | | | 3 | 1 | 7 | 5 | 2 |
| EVB. 1 | 0.30 | 0.43 | 0.48 | 0.43 | 0.39 | 0.41 | | | 0.449 | 0.380 | 0.50 | 0.59 | 0.57 | 0.76 | 0.64 |
| | 2 | 6 | 6 | 0 | 1 | 3 | | | | | 5 | 1 | 1 | 1 | 4 |
| EVB. 2 | 0.18 | 0.25 | 0.37 | 0.38 | 0.34 | 0.40 | | | 0.428 | 0.430 | 0.58 | 0.60 | 0.52 | 0.50 | 0.28 |
| | 1 | 8 | 9 | 5 | 4 | 3 | | | | | 6 | 9 | 7 | 6 | 4 |
| | | | | | | | | | | | | | | | 0.499 |

Notes: SL: servant leadership; CDP: career development policy; EE: employee engagement; OC: organisational commitment; EVB: employee voice behaviour.

As shown in **Table 3**, the discriminant validity assessment indicates that all constructs meet the required criteria. The HTMT ratios fall within acceptable thresholds, with most values remaining comfortably below 0.85 and only a few approaching—but not exceeding—the 0.90 boundary. These results confirm that the constructs are empirically distinct and capable of capturing unique conceptual domains within the model.

Higher-Order Construct (HOC)

Table 4 presents the evaluation of the higher-order constructs, detailing their outer loadings, internal consistency measures, and convergent validity statistics. The results demonstrate that the second-order constructs satisfy the recommended reliability and validity benchmarks, supporting their suitability for further structural analysis.

Table 4. Measurement model assessment—higher-order construct (HOC)

| Variable | Indicators | Loading | AVE | Composite reliability | Cronbach's alpha | CR (rho_a) |
|---------------------------------|------------|---------|-------|-----------------------|------------------|------------|
| Servant leadership (SL) | SL.1 | 0.754 | 0.718 | 0.939 | 0.921 | 0.929 |
| | SL.2 | 0.852 | | | | |
| | SL.3 | 0.864 | | | | |
| | SL.4 | 0.899 | | | | |
| | SL.5 | 0.853 | | | | |
| | SL.6 | 0.857 | | | | |
| Career development policy (CDP) | CDP.1 | 0.789 | 0.673 | 0.804 | 0.717 | 0.725 |
| | CDP.2 | 0.851 | | | | |
| Employee engagement (EE) | EE.1 | 0.911 | 0.812 | 0.928 | 0.884 | 0.892 |
| | EE.2 | 0.934 | | | | |
| | EE.3 | 0.858 | | | | |

| | | | | | |
|--------------------------------|-------|-------|-------|-------|-------|
| | OC.1 | 0.887 | | | |
| Organisational commitment (OC) | OC.2 | 0.782 | 0.713 | 0.881 | 0.800 |
| | OC.3 | 0.861 | | | 0.820 |
| Employee voice behaviour (EVB) | EVB.1 | 0.885 | 0.724 | 0.840 | 0.722 |
| | EVB.2 | 0.815 | | | 0.742 |

Table 4 presents the assessment of the higher-order constructs, showing that all constructs satisfy or surpass the benchmark criteria recommended by Hair *et al.* [72]. This includes evaluation of indicator loadings, AVE, composite reliability, Cronbach's alpha, and rho_A, confirming that the constructs are measured consistently and represent their underlying theoretical dimensions accurately.

To verify that the higher-order constructs are distinct from one another, **Table 5** reports the HTMT values. The results indicate that discriminant validity is maintained, demonstrating that each construct captures a unique aspect of the model.

Table 5. Heterotrait-Monotrait ratio (HTMT)—higher order construct (HOC)

| SL | CDP | EE | OC | EVB |
|-----|-------|-------|-------|-------|
| SL | | | | |
| CDP | 0.801 | | | |
| EE | 0.577 | 0.806 | | |
| OC | 0.627 | 0.877 | 0.760 | |
| EVB | 0.597 | 0.859 | 0.887 | 0.886 |

Notes: SL: servant leadership; CDP: career development policy; EE: employee engagement; OC: organisational commitment; EVB: employee voice behaviour.

As shown in **Table 5**, all HTMT values remain under the **0.90** threshold, indicating that the higher-order constructs are sufficiently distinct and maintain acceptable discriminant validity.

Evaluation of the structural model

Once the measurement model demonstrates reliability and validity, attention shifts to the structural model, which assesses the predictive and explanatory power of the hypothesised relationships. The evaluation involves several components [72]:

- 1. Collinearity Check:** To prevent biased estimates, the relationships among predictor constructs are examined for multicollinearity.
- 2. Path Significance and Strength:** Bootstrapping is used to determine whether the hypothesised paths are statistically significant and meaningful.
- 3. Explanatory Power:** The proportion of variance in endogenous constructs explained by the model is measured using **R² values**, indicating how well the model accounts for observed outcomes.
- 4. Effect Size (f²):** Each predictor's impact on the dependent variables is assessed using f², with 0.02, 0.15, and 0.35 reflecting small, medium, and large effects [73].
- 5. Predictive Relevance:** The **PLSpredict** procedure evaluates the model's ability to make accurate predictions on new, unseen data.

To mitigate concerns about common method bias, a full collinearity test was conducted following Kock and Lynn [68] and Kock and Gaskins [69]. VIF values below 3.3 indicate that multicollinearity is not a threat and that the model is unlikely to be affected by bias from a single-source survey. **Table 6** shows that all VIF values are well within this limit, confirming the structural model is robust and that path coefficient interpretations can be made with confidence.

Table 6. Variance inflation factors (VIF)

| Variable | VIF |
|---------------------------|-------|
| Servant leadership | 2.335 |
| Career development policy | 2.178 |
| Employee engagement | 2.150 |
| Organisational commitment | 2.314 |
| Employee voice behaviour | 2.127 |

This study employed one-tailed tests for parameter estimation to test the hypotheses, as all hypotheses predict directional relationships (positive influences) between the variables. As seen in **Table 7**, all direct hypotheses (H1-H6) are supported, with significant positive relationships.

Table 7. Path coefficient for direct effects

| Direct effect | Original sample | Sample mean | Standard Deviation | P value | 95% Confidence Intervals | f^2 | Decision |
|-------------------------|-----------------|-------------|--------------------|---------|--------------------------|-------|-----------|
| H ₁ SL → EE | 0.189 | 0.195 | 0.094 | 0.023 | [0.043,0.351] | 0.030 | Supported |
| H ₂ CDP → EE | 0.484 | 0.484 | 0.093 | 0.000 | [0.326,0.631] | 0.198 | Supported |
| H ₃ SL → OC | 0.293 | 0.300 | 0.091 | 0.001 | [0.152,0.451] | 0.070 | Supported |
| H ₄ CDP → OC | 0.374 | 0.371 | 0.106 | 0.000 | [0.185,0.536] | 0.114 | Supported |
| H ₅ EE → EVB | 0.304 | 0.306 | 0.074 | 0.000 | [0.182,0.425] | 0.107 | Supported |
| H ₆ OC → EVB | 0.475 | 0.474 | 0.065 | 0.000 | [0.367,0.580] | 0.271 | Supported |

Notes: SL: servant leadership; CDP: career development policy; EE: employee engagement; OC: organisational commitment; EVB: employee voice behaviour.

Table 8 highlights the mediation testing results, revealing that all indirect hypotheses (H7-H10) exhibit full mediation effects.

Table 8. Mediation effect testing

| Direct/indirect effects | Original sample | Sample mean | Standard Deviation | P value | 95% Confidence Intervals | Mediation type |
|--------------------------------|-----------------|-------------|--------------------|---------|--------------------------|----------------|
| SL → EVB | -0.034 | -0.029 | 0.072 | 0.317 | [-0.143,0.094] | — |
| CDP → EVB | 0.101 | 0.097 | 0.072 | 0.081 | [-0.023,0.214] | — |
| H ₇ SL → EE → EVB | 0.058 | 0.059 | 0.032 | 0.037 | [0.012,0.116] | Full mediation |
| H ₈ CDP → EE → EVB | 0.147 | 0.148 | 0.047 | 0.001 | [0.077,0.231] | Full mediation |
| H ₉ SL → OC → EVB | 0.139 | 0.142 | 0.047 | 0.001 | [0.070,0.222] | Full mediation |
| H ₁₀ CDP → OC → EVB | 0.178 | 0.176 | 0.057 | 0.001 | [0.085,0.272] | Full mediation |

Notes: SL: servant leadership; CDP: career development policy; EE: employee engagement; OC: organisational commitment; EVB: employee voice behaviour.

Table 8 illustrates that the impact of servant leadership (SL) and career development policy (CDP) on employee voice behaviour (EVB) operates entirely through employee engagement and organisational commitment. The direct links between SL or CDP and EVB were not statistically meaningful, as reflected by p-values above 0.05 and confidence intervals that encompassed zero. Conversely, the indirect effects via the mediators were significant, with confidence intervals excluding zero and p-values below 0.05. This pattern indicates a full mediation, suggesting that the influence of leadership and career development initiatives on employee voice is completely transmitted through the internal psychological states of engagement and commitment rather than occurring directly.

To evaluate the model's explanatory strength, the R^2 (coefficient of determination) was calculated for each dependent construct, in accordance with Hair *et al.* [72]. R^2 values indicate the proportion of variance in an outcome variable accounted for by its predictors, where higher values represent greater explanatory power. **Table 9** presents the R^2 results for this study, highlighting how effectively the model explains variations in employee engagement, organisational commitment, and voice behaviour.

Table 9. Coefficient of determination (R^2)

| Variable | R^2 |
|---------------------------|-------|
| Employee engagement | 0.399 |
| Organisational commitment | 0.379 |
| Employee voice behaviour | 0.576 |

Table 9 highlights the explanatory strength of the proposed model. While employee engagement and organisational commitment are accounted for to a moderate extent, the model explains a substantially larger proportion of the variance in employee voice behaviour. These results suggest that the factors included as predictors in the model meaningfully contribute to shaping these key workplace outcomes.

Beyond explanatory power, the study also examined the model's ability to generate accurate predictions for unseen data using the PLSpredict approach [72, 74]. The predictive assessment considered Q^2 predict, RMSE, and MAE as performance indicators. Positive Q^2 predict values signal that the model carries predictive relevance, while smaller RMSE and MAE values reflect greater accuracy in prediction. The findings, summarised in **Table 10**, demonstrate that the model not only accounts for the observed variance but also performs well in anticipating employee responses, reinforcing its robustness and practical applicability for forecasting organisational behaviour.

Table 10. Model's predictive power

| | PLS-SEM | | | LM | | |
|-------|---------------|-------|-------|---------------|-------|-------|
| | Q^2 predict | RMSE | MAE | Q^2 predict | RMSE | RMSE |
| EE.1 | 0.325 | 0.827 | 0.648 | 0.306 | 0.839 | 0.643 |
| EE.2 | 0.198 | 0.901 | 0.682 | 0.145 | 0.930 | 0.717 |
| EE.3 | 0.352 | 0.809 | 0.633 | 0.335 | 0.820 | 0.632 |
| EVB.1 | 0.272 | 0.858 | 0.640 | 0.216 | 0.890 | 0.669 |
| EVB.2 | 0.084 | 0.963 | 0.727 | 0.068 | 0.971 | 0.730 |
| OC.1 | 0.357 | 0.807 | 0.631 | 0.333 | 0.822 | 0.644 |
| OC.2 | 0.196 | 0.901 | 0.712 | 0.155 | 0.924 | 0.719 |
| OC.3 | 0.195 | 0.902 | 0.683 | 0.151 | 0.927 | 0.691 |

Notes: RMSE: root mean squared error; MAE: mean absolute error; LM: linear model.

Predictive assessment

Table 10 indicates that all Q^2 predict values are positive, demonstrating that the PLS-SEM model possesses predictive relevance across the measured constructs. In addition, both RMSE and MAE values show that the model's predictions are comparable to or surpass those of a traditional linear model, highlighting the robustness and suitability of PLS-SEM for predictive analysis in this study's context.

Discussion

The findings offer valuable insights into how servant leadership and career development policies shape employee engagement, organisational commitment, and employee voice behaviour within public sector educational institutions. By applying the Stimulus-Organism-Response (SOR) framework, the study explored how external organisational factors (stimuli) influence internal psychological states (organism), which then drive behavioural outcomes (response). The results enrich both theoretical understanding and practical knowledge regarding employee behaviour in State Polytechnics in East Java, a setting characterised by hierarchical structures and a collectivist cultural orientation that often discourages direct dissent.

Promoting employee voice is increasingly recognised as essential for organisational effectiveness. This research highlights the role of servant leadership and structured career development in cultivating engagement and commitment, thereby fostering proactive voice behaviour. The findings help fill gaps in existing literature by examining these dynamics in the Indonesian public sector context, where rigid hierarchies can limit open communication.

Direct effects

The positive association between servant leadership and employee engagement ($\beta = 0.189$, $p = 0.023$) supports Hypothesis 1 and aligns with the SOR perspective, which suggests that external leadership behaviours act as stimuli influencing internal employee responses. Employees exposed to servant leadership—characterised by empathy, humility, and prioritising employee development—exhibited higher engagement. Although the effect size is small ($f^2 = 0.030$), this indicates that servant leadership contributes meaningfully to engagement, even if other factors also play a role. In the Indonesian public sector, servant leadership may mitigate the constraints imposed by hierarchical norms by fostering a sense of security and value among employees. From a practical standpoint, encouraging servant leadership could help public institutions enhance workforce engagement, potentially improving job satisfaction and retention rates.

Career development policy also positively influenced employee engagement ($\beta = 0.484$, $p < 0.001$), supporting Hypothesis 2. Consistent with SOR theory, structured career growth opportunities serve as a stimulus that satisfies employees' intrinsic growth needs, triggering higher engagement. The medium effect size ($f^2 = 0.198$) underscores the significant impact of career development initiatives, reflecting how employees respond to perceived organisational support with increased involvement and commitment to their work. This finding aligns with previous studies highlighting career development as a key driver of engagement [46-49]. In the rigid, hierarchical environment of Indonesian polytechnics, these policies may offer a critical avenue for professional growth, helping employees overcome potential stagnation. Implementing comprehensive career development programs can thus substantially elevate engagement in public sector settings.

Servant leadership was also positively associated with organisational commitment ($\beta = 0.293$, $p = 0.001$), supporting Hypothesis 3. This outcome aligns with the SOR framework, showing that servant leadership acts as a stimulus that strengthens employees' attachment and loyalty to their organisation. By fostering trust, respect, and mutual growth, servant leaders enhance the internal psychological state of commitment. Prior research similarly indicates that servant leadership cultivates loyalty and belonging, contributing to organisational commitment [51-55]. With a small to medium effect size ($f^2 = 0.070$), servant leadership emerges as a meaningful contributor, though not the sole factor influencing commitment. In Indonesia's collectivist and hierarchical culture, servant leadership resonates with cultural values such as community and

respect for authority, reinforcing employee dedication. Leaders in polytechnics who practice servant leadership can inspire stronger organisational loyalty, even within bureaucratic frameworks, suggesting that leadership development programs may be beneficial for cultivating committed, resilient teams.

The analysis revealed a significant positive link between career development policies and organisational commitment ($\beta = 0.374$, $p < 0.001$), supporting Hypothesis 4. This finding highlights the role of career development as an external factor that strengthens employees' internal attachment to their organisation. When employees perceive that the organisation actively invests in their career progression, they are more likely to respond with loyalty and dedication. With a small-to-medium effect size ($f^2 = 0.114$), the results indicate that career development initiatives are important in fostering a committed workforce. These outcomes align with previous research, which emphasizes that opportunities for professional growth satisfy employees' career aspirations and reinforce organisational allegiance [56, 57, 75]. Such commitment may stem from the fulfilment of implicit psychological agreements and the provision of pathways for personal and professional development.

In addition, the results support a significant positive effect of employee engagement on employee voice behaviour ($\beta = 0.304$, $p < 0.001$), confirming Hypothesis 5. From an SOR perspective, engagement operates as a psychological mechanism that drives proactive behaviour, such as speaking up with suggestions or concerns. Employees who demonstrate high energy, dedication, and focus are more inclined to express ideas and participate in improving organisational practices [76]. The effect size ($f^2 = 0.107$) indicates that engagement is an influential factor in encouraging voice behaviour. Previous studies also suggest that engaged employees are more confident in voicing their perspectives and contributing meaningfully when they believe their input will have a positive impact [12, 58, 59]. In hierarchical environments such as Indonesian public sector institutions, engagement may play a crucial role in motivating employees to overcome cultural barriers and actively contribute, enhancing innovation and organisational responsiveness.

Lastly, organisational commitment exhibited a strong positive impact on employee voice behaviour ($\beta = 0.475$, $p < 0.001$), supporting Hypothesis 6. Organisational commitment, as an internal response within the SOR framework, encourages employees to engage in constructive voice behaviours. Employees who feel a deep emotional connection to their organisation tend to take initiative, raise concerns, and offer recommendations that benefit the organisation [2]. The medium-to-large effect size ($f^2 = 0.271$) demonstrates that commitment is a powerful driver of proactive behaviour. In the context of Indonesian polytechnics, where hierarchical norms may limit open dialogue, a strong sense of commitment can help employees overcome these obstacles, fostering a more participative and accountable workplace. These results emphasize the importance of nurturing organisational commitment in public sector institutions to cultivate a constructive and engaged workforce.

Indirect effects

The findings indicate that servant leadership positively influences employee voice behaviour indirectly through employee engagement ($\beta = 0.058$, $p = 0.037$), supporting Hypothesis 7. In line with the SOR framework, leaders who prioritise the growth and well-being of their employees foster a more engaged workforce. This engagement then motivates employees to express ideas, raise concerns, and contribute to improvements. In hierarchical settings like Indonesian polytechnics, servant leadership can help employees feel secure in voicing their opinions, effectively bridging cultural and organisational barriers. Similarly, career development policies indirectly impact voice behaviour through employee engagement ($\beta = 0.147$, $p = 0.001$), supporting Hypothesis 8. Policies that promote skill development and career progression act as external stimuli that encourage employees to invest effort and attention in their work. Engaged employees, in turn, are more likely to proactively communicate suggestions and ideas. In the public sector, where opportunities for growth may be limited, career development initiatives signal organisational support and motivate employees to participate actively.

Servant leadership also shows a significant indirect effect on employee voice behaviour through organisational commitment ($\beta = 0.139$, $p = 0.001$), supporting Hypothesis 9. By fostering trust, respect, and a sense of belonging, servant leaders strengthen employees' attachment to the organisation. Employees with higher commitment are more willing to take ownership and share ideas that benefit the organisation. In cultures with high power distance, such as Indonesia, commitment can help overcome reluctance to speak up, encouraging constructive input from employees.

Finally, career development policies influence voice behaviour indirectly via organisational commitment ($\beta = 0.178$, $p = 0.001$), supporting Hypothesis 10. Opportunities for career growth and skill development increase employees' emotional investment in their organisation. This stronger commitment encourages them to engage in proactive behaviours, including sharing feedback and suggestions. In rigid organisational structures, such policies signal genuine support from the organisation, motivating employees to contribute to continuous improvement.

Implications

Practical implications

The findings highlight that servant leadership and career development programs play essential roles in shaping employee engagement, organisational commitment, and voice behaviour in public sector institutions. In contexts like Indonesia, where

hierarchical structures and high power distance can restrict open communication, promoting servant leadership can help create a supportive environment where employees feel valued and empowered. Such conditions motivate staff to engage more actively with their work and contribute ideas, fostering a culture of constructive dialogue and innovation.

Career development policies were also shown to be key drivers of engagement and commitment. By providing opportunities for skill enhancement, training, and career progression, organisations signal their investment in employees' personal and professional growth. This not only strengthens loyalty but also encourages employees to participate actively in organisational improvement. In bureaucratic environments where promotion is often limited, clearly defined career pathways can boost motivation, reinforce commitment, and stimulate a more proactive workforce. Implementing these strategies can improve overall job satisfaction, reduce turnover, and cultivate an organisational culture that values initiative and innovation.

Theoretical implications

This study contributes to organisational behaviour theory by extending the Stimulus-Organism-Response (SOR) model into a non-Western, hierarchical public sector setting. The results confirm that servant leadership and career development initiatives act as external stimuli, which trigger internal psychological responses—namely engagement and organisational commitment—that subsequently encourage employees to speak up. By demonstrating these mediated pathways, the research shows that the SOR framework is applicable across diverse cultural contexts, not only Western or corporate settings.

Furthermore, the study emphasizes the importance of internal psychological states as mediators. While much prior research has examined direct relationships between leadership or HR practices and employee behaviour, this study underlines how engagement and commitment serve as mechanisms through which organisational stimuli translate into proactive actions. These insights broaden the explanatory power of the SOR model and suggest that future research should investigate similar processes in other high-power distance or collectivist organisational contexts, adapting the framework to cultural norms and communication practices.

Limitations and future research

One limitation is the reliance on convenience sampling, which may not fully reflect the broader population of employees in State Polytechnics across East Java. Using stratified or random sampling in future research could provide more representative and generalisable results. Additionally, the study focuses exclusively on a specific regional and organisational context, so the findings may not be directly applicable to other regions, countries, or types of organisations with different cultural or structural characteristics. Future studies could explore these dynamics in diverse contexts to test the universality of the relationships observed and examine potential cultural or institutional variations.

Conclusions

This research examined the complex interplay between servant leadership, career development policies, employee engagement, organisational commitment, and employee voice behaviour in Indonesian public sector institutions, with a particular focus on polytechnics in East Java. Drawing on the Stimulus-Organism-Response (SOR) framework, the study demonstrates that both servant leadership and career development policies act as external stimuli that trigger internal psychological responses—namely engagement and organisational commitment—which, in turn, drive employees to express their ideas, suggestions, and concerns.

The findings reveal that servant leadership cultivates a supportive and empowering work environment, enhancing employees' motivation, involvement, and loyalty. Meanwhile, career development policies satisfy employees' intrinsic growth needs and provide clear pathways for professional advancement, further strengthening engagement and commitment. Importantly, the study confirms that employee engagement and organisational commitment are key mediators, highlighting their central role in translating leadership and policy initiatives into proactive workplace behaviours.

From a practical perspective, these results suggest that public sector organisations should focus on fostering servant leadership qualities among leaders and implementing comprehensive career development programs. Such strategies can build a workforce that is both engaged and committed, promoting a culture of open dialogue, collaboration, and innovation.

Theoretically, the study extends the applicability of the SOR model to a non-Western, collectivist, and hierarchical context, illustrating that the underlying mechanisms connecting organisational stimuli to employee behaviour are relevant across cultural settings. These insights provide a foundation for future research to explore similar dynamics in other regions or organisational environments, further enriching our understanding of how leadership and human resource practices influence employee outcomes globally.

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