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# Empowering performance through engagement: the mediating role of employee engagement in the relationship between transformational leadership, self-directed learning, and employee performance in the cosmetics industry

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**Abstract:** Amid growing competition in the cosmetics industry, this study explores how transformational leadership and self-directed learning relate to employee performance, with employee engagement as a mediating variable. A survey of 105 employees at a cosmetics company was conducted using a structured questionnaire. Data were analysed using structural equation modelling (SEM) with SmartPLS. Results show that transformational leadership significantly enhances engagement but does not directly affect performance. Self-directed learning positively influences both engagement and performance. Employee engagement has the most potent effect on performance, confirming its mediating role. These findings suggest that leadership and learning strategies must be aligned with engagement efforts to optimise employee performance.

**Keywords:** transformational leadership; employee engagement; self-directed learning; SDL; employee performance; cosmetics industry; structural equation modelling; SEM.

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**Biographical notes:** Herni Suhartini is a seasoned human resources practitioner with extensive experience as an HR Director in several multinational companies in Indonesia. She is also a leadership coach and mentor, deeply passionate and enthusiastic about developing leadership capabilities across diverse organisations. Currently, he serves as an HR Advisor at PT Paragon Technology and Innovation and as an Assessment Lead at Korn Ferry Indonesia and occasionally as a Lecturer of several subjects for Certified Human Capital Program at the Universitas Kristen Krida Wacana, Jakarta.

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## **1 Introduction**

Indonesia's personal care and cosmetics industry has recently witnessed rapid growth and intense competition. Given Indonesia's vast and lucrative market, this competition is among domestic brands and international players (Petruzzi, 2022). The extensive product diversification offers consumers a wide range of beauty products tailored to their needs. However, it simultaneously poses challenges for local manufacturers striving to compete in the global marketplace.

Over the past decade, Indonesia's cosmetics trade balance has experienced a significant deficit. In 2022, Indonesia's cosmetic exports stood at US\$150.7 million, with an export volume of 32.4 thousand tons, while imports reached US\$329.5 million, with an import volume of 25.0 thousand tons (Datanesia, 2023). This demonstrates that the domestic demand for beauty products still heavily relies on imports, with China, South Korea, and France being the largest suppliers to Indonesia's local market (Datanesia, 2023). However, despite the dominance of imported products, consumer preference studies indicate a promising trend for local brands. A Populix survey revealed that 54% of Indonesian consumers prefer local cosmetic brands, compared to 11% who favour international brands, highlighting a strong consumer trust in domestic products (Pahlevi, 2022). This suggests that local cosmetic companies have significant opportunities to enhance their competitive edge by investing in product innovation, branding, and workforce development.

As competition intensifies, the ability of cosmetic companies to maintain market leadership is increasingly linked to employee performance. Workforce productivity and engagement have become critical determinants of a company's ability to innovate and sustain competitive advantage (Ariussanto et al., 2020; Riyanto et al., 2021a). Employee performance is often assessed through annual evaluations, reflecting how well employees contribute to organisational goals. PT XYZ employee performance scores from 2023 to 2024 show minimal improvement, with average employee performance scores increasing from 3.918 to 3.932. This score is still below the company's desired standard of 4.5.

However, despite these efforts, PT XYZ has already introduced measures to address performance issues by implementing a self-directed learning (SDL) model through the learning wallet initiative in 2023. According to PT XYZ, this program enables employees to actively take charge of their professional development by choosing training programs that align with their interests and needs, supported by financial assistance for online courses, books, seminars, and certifications. XYZ's 2023 internal report, 523 employees (42% of the eligible workforce) utilised the learning wallet in its first year, reflecting a high enthusiasm for SDL. The highest reimbursement amounts were recorded among

officers (Rp578 million), executives (Rp559 million), and heads (Rp223 million). While this program promotes continuous learning and skill development, its direct impact on employee performance remains unclear.

Transformational leadership is one of the most influential factors in improving employee performance (Arifudin et al., 2020; Asbari, 2019; Burhanudin, 2020). Transformational leaders inspire and motivate employees to exceed expectations by fostering a compelling vision, encouraging innovation, and supporting individual growth (Widodo and Prasetyo, 2021). According to Bass (1990), transformational leadership comprises four key components: idealised influence, where leaders serve as ethical role models; inspirational motivation, which entails creating a compelling vision and encouraging employees to pursue ambitious goals; intellectual stimulation, where leaders promote creative thinking and innovative problem-solving; and individualised consideration, where leaders provide personalised support for employee development (Feri et al., 2020).

At PT. XYZ, an executive leadership assessment conducted by Kornferry Indonesia in June 2022, evaluated transformational leadership effectiveness among executive committee members. The results revealed a visionary leadership score of 91/100 and a coaching score of 81/100, indicating a strong presence of transformational leadership within the organisation. These scores align with the foundational characteristics of transformational leadership, as Bass (1990) conceptualised, where inspirational motivation is demonstrated through a compelling vision that inspires employees. Individualised consideration is evident in leaders' ability to mentor, coach, and support individual development. The high ratings in both dimensions indicate that PT. XYZ's leaders actively engage in visionary thinking and personalised guidance, two critical elements that have defined transformational leadership practices over the past several decades.

Additionally, a preliminary survey of 30 employees assessed perceptions of transformational leadership at PT. XYZ, based on Bass's (1990) four-component model. The results indicated that Intellectual Stimulation scored the highest (4.367), followed by Idealised Influence (4.300), Inspirational Motivation (4.267), and Individualised Consideration (3.867). These findings suggest that executives at PT. XYZ emphasise innovation and ethical leadership. However, there is room for improvement in addressing individual employee needs.

Employee engagement is crucial in linking leadership effectiveness, self-directed learning, and employee performance (Ariussanto et al., 2020; Riyanto et al., 2021a). Engaged employees demonstrate higher motivation, commitment, and productivity, contributing to organisational success, according to PT. XYZ's 2022 (EngageRocket survey), 74.7% of employees provided favourable responses regarding key engagement drivers, such as accomplishment, autonomy, clear expectations, growth, managerial support, workplace relationships, rewards, values, and work environment. Moreover, the company's employee net promoter score (eNPS) of 55 significantly exceeded the industry benchmark of 35, indicating high employee satisfaction and loyalty. Given these insights, employee engagement is expected to mediate the relationship between transformational leadership, SDL, and employee performance.

Despite extensive studies on transformational leadership and SDL, their combined impact on employee engagement and performance in the cosmetics industry remains underexplored. Most existing research focuses on general corporate settings, neglecting the specific challenges and opportunities within the fast-growing beauty sector. This

study aims to bridge this gap by examining the influence of transformational leadership on employee engagement and performance, the role of SDL in shaping employee engagement and performance, and the mediating role of employee engagement in the relationship between transformational leadership and employee performance. The findings of this research are expected to provide valuable insights for cosmetic industry leaders and HR practitioners in designing effective leadership and learning strategies. Enhancing transformational leadership practices and SDL initiatives can help create a highly engaged workforce, driving sustainable competitive advantage in Indonesia's cosmetics industry.

## **2 Literature review**

### *2.1 Employee performance*

Employee performance is critical in determining organisational success, as it directly affects productivity, innovation, and overall business outcomes. Fatimah (2021) defines performance as the outcome of work and behaviour that an employee has demonstrated in fulfilling assigned tasks and responsibilities within a specific period. Similarly, Mangkunegara (2020) describes performance as the quality and quantity of work an employee completes by assigned responsibilities. Colquitt et al. (2019) emphasise that employee performance is the value of a set of employee behaviours that contribute positively or negatively to achieving organisational goals. Performance is often assessed through various criteria, including quality, efficiency, and effectiveness in achieving organisational objectives (Fatimah, 2021). According to Wijaya and Fikri (2019), employee performance is determined by the interaction between ability, motivation, and opportunity, which collectively influence work effectiveness and efficiency.

From a behavioural perspective, performance is evaluated based on how employees execute their duties and whether their behaviours contribute positively or negatively to organisational success. Pratiwi and Manafe (2022) define performance as the quantity or quality of outcomes or services an employee delivers in executing their job responsibilities. Muiz and Sunarta (2020) further elaborate that performance is the result of work achieved by an individual, shaped by their skills, effort, and opportunities. Meanwhile, Putra and Subroto (2022) emphasise that performance is the success of an individual or team in accomplishing tasks according to their authority and responsibility while adhering to time, quality, and quantity expectations set by the organisation.

Mahendra et al. (2022) provide a comprehensive framework for evaluating employee performance through five key dimensions: quality of work, promptness, initiative, capability, and communication. Quality of Work focuses on the accuracy, relevance, and effectiveness of an employee's output about organisational goals. Promptness assesses time efficiency and adherence to work schedules, ensuring smooth operational processes and productivity. The initiative highlights an employee's ability to proactively generate ideas and take independent actions to resolve challenges, demonstrating innovation and problem-solving skills. Capability is measured by an individual's technical and professional competencies, including their ability to leverage available resources for maximum efficiency. Lastly, communication evaluates an employee's ability to effectively interact within and beyond the organisation, fostering collaboration, coordination, and stakeholder engagement. Effective communication is critical in

building productive relationships and ensuring work processes align with strategic objectives.

Given the strategic role of employee performance in sustaining organisational success, companies must adopt structured and evidence-based performance management systems that go beyond mere evaluation and actively enhance individual capabilities. Recent studies underscore the significance of performance appraisal practices (Atulkar and Sharma, 2025) and the role of human capital in strengthening work process improvement and productivity (Chantabutr and Wanarat, 2024). Integrating transformational leadership and SDL emerges as a powerful performance driver, particularly when mediated through employee engagement (Abdullahi et al., 2023; Mohammad et al., 2023). Transformational leaders who foster a compelling vision, intellectual stimulation, and personalised support can cultivate environments where employees are intrinsically motivated to pursue continuous development (Jacobis et al., 2024; Chan and Hooi, 2023). Meanwhile, SDL enables employees to take ownership of their growth trajectories, enhancing adaptability and initiative, which are essential in fast-changing industries (Matta and Alam, 2023).

Moreover, research reveals that employee engagement is pivotal in the relationship between leadership, learning, and performance (Jyoti et al., 2025; Rahman, 2024). Engaged employees are likelier to share knowledge, remain resilient, and exhibit discretionary effort in achieving organisational goals (Abdullahi et al., 2023). Social media and digital platforms have further expanded the scope of performance management by fostering interactive feedback and real-time monitoring, thereby influencing engagement levels and behavioural outcomes (Chaanine, 2024). Organisations can establish a culture of continuous improvement, agility, and innovation by adopting a holistic and data-driven approach to performance development, encompassing leadership style, learning autonomy, and engagement strategies. Ultimately, these initiatives improve employee outcomes and sustainable competitive advantage in increasingly dynamic business environments.

## *2.2 Employee engagement*

Empowerment theory, developed by scholars such as Julian Rappaport and Zimmerman, highlights the importance of granting individuals autonomy and control over decisions that affect their lives (Zimmerman, 2000). In employee engagement, this theory provides crucial insights into how empowerment fosters motivation, job satisfaction, and overall employee performance. Empowerment involves granting employees autonomy, access to relevant information, and opportunities to participate in decision-making. When employees feel empowered, they develop a stronger sense of ownership over their work, leading to higher motivation and a more profound commitment to organisational goals.

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Empowered employees tend to feel more valued, exhibit higher levels of engagement, and contribute more effectively to their teams (Kiraly, 2014). Empowerment is closely linked to workplace innovation, allowing employees to express ideas, take initiative, and engage in problem-solving (Firmansyah and Wahyuningtyas, 2025). Additionally, providing employees with continuous feedback and access to relevant organisational information enhances their ability to understand their role in the broader context of the company, reinforcing their sense of purpose and contribution (Hepworth et al., 2016).

Research suggests that engaged employees are more productive, demonstrate higher levels of commitment, and contribute positively to an organisation's strategic objectives (Al-Omar et al., 2019). Cai et al. (2022) further emphasise that engaged employees actively seek ways to improve processes, collaborate effectively with colleagues, and remain optimistic in achieving their goals. Organisations that successfully integrate employee empowerment with engagement strategies cultivate a dynamic and productive work environment, ensuring employees feel valued, supported, and driven to contribute at their highest potential. The synergy between empowerment and engagement ultimately strengthens individual and organisational performance, fostering long-term sustainability and competitive advantage.

### 2.3 *Transformational leadership*

Leadership theory explores how leaders influence, motivate, and guide others towards achieving shared goals, making it a crucial aspect of organisational success (Marjaya and Pasaribu, 2019). Early leadership theories, such as Trait Theory, argue that leaders are born with inherent qualities like intelligence, decisiveness, and adaptability, which contribute to effective leadership (Zaccaro et al., 2004). However, critics highlight its limitations, as situational factors also play a significant role in leadership effectiveness. In contrast, behavioural leadership theory shifts the focus from traits to observable leadership behaviours, classifying leaders as task-oriented or relationship-oriented, with effectiveness depending on their ability to adapt to team needs (Manktelow, 2015).

The situational leadership theory suggests that no single leadership style is universally effective. Instead, leadership success depends on aligning a leader's style and contextual variables (Stogdill, 1948). Fiedler's contingency model and Hersey and Blanchard's situational leadership model emphasise that leadership adaptability is key to maximising performance and motivation (Liden and Maslyn, 1998). Over time, leadership studies evolved from transactional leadership models, which emphasise rewards and exchanges, to charismatic and transformational leadership, which focus on vision, influence, and emotional connection with followers. Among these, Transformational Leadership stands out as a highly effective approach, characterised by a leader's ability to inspire, motivate, and drive change by fostering a compelling vision and encouraging innovation.

Transformational leadership, introduced by Burns (1978) and further developed by Bass (1990), emphasises a leader's role in elevating followers' motivation and performance by aligning their values with organisational goals. This leadership style incorporates four key dimensions: idealised influence, where leaders act as role models; inspirational motivation, in which leaders communicate a compelling vision; intellectual stimulation, which encourages creativity and problem-solving; and individualised consideration, where leaders mentor and develop their employees based on individual needs (Curtis and Wee, 2021). Unlike charismatic leadership, which focuses primarily on

personal appeal, transformational leadership aims to develop followers into leaders, fostering long-term organisational success (Huang et al., 2021).

Research has shown that transformational leadership is highly effective in dynamic and uncertain environments, as it cultivates adaptability, innovation, and employee commitment (Prasetyo and Mas'ud, 2021). Moreover, transformational leaders enhance performance and increase employee engagement and job satisfaction, making this approach particularly valuable in today's fast-changing business landscape (Ghasabeh, 2021). While transformational leadership has proven to be a powerful tool for organisational growth, critics argue that over-reliance on a single leader may lead to burnout or excessive dependence on one visionary figure (Yukl, 2002). To mitigate this, modern leadership approaches suggest integrating servant leadership, shared leadership, and self-leadership elements to ensure sustainable leadership development and long-term organisational resilience (Burhanudin, 2020; Sahri et al., 2023).

## *2.4 Self-directed learning*

Maslow's hierarchy of needs, introduced by Abraham Maslow in 1943, is a psychological model that explains human motivation through a five-tier hierarchy of needs (Hutchings et al., 2024). These needs include physiological, safety, social belonging, esteem, and self-actualisation, arranged in a progressive structure where lower-level needs must be fulfilled before higher-level aspirations can be pursued (Adziima, 2022). In the workplace, Maslow's theory provides valuable insights into how fulfilling these needs influence employee motivation, engagement, and learning behaviour. For instance, in a SDL context, employees must feel secure in their roles and work environment before fully engaging in independent learning. Basic needs such as a comfortable workspace, access to resources, and financial stability lay the foundation for engagement in continuous learning (Lussier, 2019). As employees progress towards higher-level needs, social interactions, peer collaboration, and recognition of learning achievements become essential motivators. Providing constructive feedback, mentorship programs, and acknowledging learning accomplishments can foster a strong sense of belonging and professional development (Jauhari and Karyono, 2022).

At the highest level of Maslow's hierarchy, self-actualisation aligns with the intrinsic motivation that drives individuals to reach their full potential through continuous learning and skill enhancement. Employees engaged in SDL are often motivated by personal growth and career aspirations, striving for lifelong development and knowledge acquisition. Organisations that cultivate an environment conducive to self-actualisation – such as providing access to e-learning platforms, leadership development programs, and opportunities for creative problem-solving – can significantly enhance employee motivation, satisfaction, and job performance. Supporting SDL through flexible learning initiatives and personalised learning paths ensures that employees remain engaged and competitive in an ever-changing work environment (Trygu, 2021). Maslow's theory underscores the psychological and structural foundations for effective SDL, reinforcing that personal and professional growth are deeply intertwined with fundamental human needs.



## *2.5 Hypotheses development*

The cosmetics industry is characterised by intense competition and rapid innovation, necessitating organisations to continuously enhance employee performance through effective leadership, engagement, and learning strategies. As businesses strive to maintain competitiveness, transformational leadership, employee engagement, and SDL are critical factors influencing employee performance. Transformational leadership fosters motivation and inspiration, encouraging employees to exceed expectations, while employee engagement ensures that individuals remain committed to their work. Moreover, SDL equips employees with the skills necessary to adapt to changing industry demands, enabling them to contribute more effectively to organisational success. The following hypotheses are developed based on previous studies to explore the relationships between these variables and their impact on employee performance.

Transformational leadership, which emphasises vision, motivation, and individualised support, is crucial in shaping employee performance (Al-Rabiey et al., 2024; Nst and Mujiatun, 2024). Leaders who inspire and empower their employees create a work environment that fosters creativity, innovation, and a proactive approach to challenges. Riyanto et al. (2021b) and Udin (2023) highlight that transformational leadership cultivates a culture of continuous improvement, motivating employees to explore new ideas and seek innovative solutions. By providing mentorship, recognising individual contributions, and promoting a shared vision, transformational leaders instil a sense of purpose among employees, ultimately enhancing their performance. Given these findings, the following hypothesis is proposed:

H1 Transformational leadership positively influences employee performance.

Employee engagement, defined as the level of cognitive, emotional, and behavioural investment employees put into their work, has been widely recognised as a significant determinant of job performance (Lai et al., 2020; Lussa et al., 2023; Putra and Mardikaningsih, 2022; Riyanto et al., 2021a). Engaged employees demonstrate greater commitment, enthusiasm, and persistence in completing tasks, leading to higher-quality outputs and improved productivity. Research has shown that engaged employees are more innovative, proactive, and willing to take initiative, further strengthening organisational performance (Lussa et al., 2023). Engagement enhances teamwork and collaboration, fostering a positive work environment that minimises absenteeism and turnover rates (Riyanto et al., 2021b). These findings suggest that higher employee engagement leads to increased performance outcomes, making it a key factor in organisational success.

H2 Employee engagement positively influences employee performance.

SDL is a critical component of employee development, allowing individuals to take the initiative in identifying learning needs, setting goals, and acquiring new skills without relying entirely on formal training programs (Bruce et al., 2018; Lee and Jung, 2019; Oducado, 2021; Parkes, 2022). Employees who actively engage in SDL are more adaptable to changes in the industry, demonstrate higher levels of motivation, and exhibit greater problem-solving abilities. Research indicates that SDL contributes to technical skill development and enhancement of soft skills such as time management, communication, and leadership (Oducado, 2021; Parkes, 2022). Given its substantial impact on professional growth and work performance, SDL is expected to enhance

employee efficiency and effectiveness, making it an essential driver of workplace success.

H3 SDL positively influences employee performance.

Transformational leadership has also been widely recognised as a powerful driver of employee engagement (Al-Rabiey et al., 2024; Nst and Mujiatun, 2024). Leaders who articulate a compelling vision, provide meaningful feedback, and foster a supportive work culture inspire employees to become more emotionally and intellectually invested in their work. Research suggests that transformational leadership enhances engagement by encouraging employees to contribute beyond their job descriptions, facilitating personal growth, and instilling a sense of belonging in the workplace (Riyanto et al., 2021b; Udin, 2023). Employees who perceive their leaders as role models are likelier to demonstrate commitment and resilience in achieving organisational goals. These findings support the notion that transformational leadership has a strong positive effect on employee engagement.

H4 Transformational leadership positively influences employee engagement.

SDL fosters intrinsic motivation, enabling employees to take control of their career development and actively seek opportunities to enhance their skills (Bruce et al., 2018; Oducado, 2021). Studies indicate that employees who engage in SDL feel more empowered, confident, and committed to their roles, leading to higher levels of engagement (Lee and Jung, 2019; Parkes, 2022). SDL promotes a continuous learning mindset, encouraging employees to remain engaged in tasks and proactively contribute to organisational growth. Employees who see personal development as a valued component of their job are likelier to invest additional effort. Given these insights, SDL is expected to significantly influence employee engagement, reinforcing its role as a key factor in workforce motivation and performance.

H5 SDL positively influences employee engagement.

While transformational leadership and SDL directly contribute to employee performance, engagement is expected to play a crucial mediating role. Employees who experience supportive leadership and growth opportunities are likelier to be engaged in their work, enhancing their productivity and effectiveness (Lai et al., 2020; Lussa et al., 2023). Engagement bridges leadership, learning, and performance, amplifying transformational and SDL's positive impact on work outcomes. Engaged employees are more self-motivated, resilient, and committed, driving overall organisational success. These findings suggest that employee engagement significantly mediates the relationships between transformational leadership, SDL, and performance.

H6 Employee engagement mediates the relationship between transformational leadership and employee performance.

H7 Employee engagement mediates the relationship between SDL and employee performance.

The proposed hypotheses establish a comprehensive framework for understanding the interplay between transformational leadership, SDL, employee engagement, and performance. By examining direct and indirect effects, this study aims to provide empirical insights into how leadership and learning strategies can be leveraged to

enhance workforce productivity and engagement in the cosmetics industry. The findings are expected to contribute to academic literature and managerial practices, offering guidance on effective leadership styles, employee development initiatives, and engagement-driven performance strategies.

### 3 Methods

This study employs a quantitative survey method to examine the influence of transformational leadership, employee engagement, and SDL with the *Learning Wallet* program on employee performance at PT. XYZ. The research design is causal, aiming to understand independent variables' direct and indirect effects on the dependent variable through mediation. This approach allows for an empirical analysis of the relationships between variables based on structured questionnaire data. Data for this study were collected through an online questionnaire distributed to 105 respondents representing various directorates and positions within PT. XYZ.

The population in this study comprises all PT. XYZ employees utilised the *Learning Wallet* program in 2024, totalling 523 employees across Indonesia. Given the large population, probability sampling was applied to ensure equal employee selection opportunities. The sample size was determined using Taro Yamane's formula (Khurana, 2023) with a 10% precision level, yielding a final sample of 84 employees. However, 105 employees ultimately participated in the survey.

The demographic distribution of respondents includes gender, directorate, and job position. Most respondents are women (76%), while men account for 24%, suggesting that the sector under study at PT. XYZ has a higher level of participation from female employees. Regarding directorates, the Commercial division had the highest respondents (31%), highlighting its significant workforce and crucial role in achieving the company's business objectives. This was followed by the Human Resources and Corporate Affairs division (21%), reflecting the strategic importance of human capital management at PT. XYZ. Other divisions with notable representation include Finance, accounting, tax, and legal (6%), information technology (6%), logistics distribution (6%), marketing (6%), and research and development (6%). Conversely, some divisions such as direct selling direct to consumer (DSDTC) (1%), Nurhayati Subakat Entrepreneurial Institute (NSEI) (1%), and product innovation and development (2%) had minimal representation, which may indicate their smaller workforce allocation in the company.

Regarding job positions, most respondents belong to the officer level (49%), followed by executives (44%) and heads (7%). The high proportion of officers suggests that this study predominantly involves operational employees directly engaged in the company's daily activities. Meanwhile, the 44% representation at the Executive level indicates that the study also includes perspectives from employees in supervisory roles who operate between the Officer and Head positions. These demographic distributions provide a diverse representation across different divisions and job levels, ensuring a comprehensive analysis of the relationships between transformational leadership, employee engagement, SDL, and employee performance at PT. XYZ.

Data was collected through structured questionnaires using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. This scale measures respondents' perceptions regarding the research variables, including transformational leadership (X1), employee engagement (X2), SDL (X3), and employee performance (Y).

Transformational leadership was adapted from Bass (1990) and includes dimensions such as *idealised influence*, *inspirational motivation*, *intellectual stimulation*, and *individualised consideration*. Employee engagement was adapted from Schaufeli et al. (2006) and Jeve et al. (2015), consisting of *vigour*, *dedication*, and *absorption*. Based on Sam and Shalini (2021) and Garrison (1997), SDL includes *self-management*, *self-monitoring*, and *motivation*. Employee performance, adapted from Lintjewas (2016), Leuhery and Manuhutu (2018), and Gemilang and Riana (2021), consists of *quality of work*, *promptness*, *initiative*, *capability*, and *communication*.

## 4 Results

The measurement model was evaluated using convergent validity, discriminant validity, and reliability analysis to ensure the robustness of the constructs used in the study. Convergent validity was assessed through factor loadings, average variance extracted (AVE), and composite reliability (CR). All factor loadings exceeded the recommended threshold of 0.70 (Hair et al., 2021), indicating that each item had a strong relationship with its respective construct. The AVE values for all constructs were above the threshold of 0.50, confirming that the latent variables explained a substantial proportion of variance in the indicators (Fornell and Larcker, 1981). Additionally, the CR values exceeded the recommended 0.70 threshold, demonstrating that the constructs were internally consistent and reliable (Henseler et al., 2015).

Discriminant validity was tested using the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio. The Fornell-Larcker analysis showed that the square root of the AVE for each construct was greater than its correlation with other constructs, supporting discriminant validity (Sarstedt et al., 2020). Furthermore, the HTMT ratios were below the threshold of 0.85, confirming that the constructs were distinct (Henseler et al., 2015). Cronbach's Alpha values for all constructs exceeded 0.70, demonstrating strong internal consistency and reliability, ensuring that the measurement model is valid and reliable for hypothesis testing (Fahmi et al., 2024a, 2024b; Kunaifi et al., 2022).

The R-square ( $R^2$ ) values indicate the explanatory power of the independent variables on the dependent variables. In this study, transformational leadership and self-directed learning explain 38% of the variance in employee engagement ( $R^2 = 0.380$ ). In contrast, transformational leadership, SDL, and employee engagement explain 42.3% of the variance in employee performance ( $R^2 = 0.423$ ). These results suggest that the model has moderate explanatory power, meaning the independent variables significantly contribute to explaining variations in employee engagement and performance (Hair et al., 2021).

The model's standardised root mean square residual (SRMR) is 0.074, below the threshold of 0.08, indicating a good model fit (Hu and Bentler, 1999). This result suggests that the model adequately represents the observed data and does not suffer from significant misspecifications. Additionally, the  $Q^2$  predicted positive employee engagement and performance values, demonstrating strong predictive relevance (Shmueli et al., 2019). The PLS predict analysis further showed that the predictive performance of the PLS-SEM model outperformed the linear model (LM) across most indicators, confirming the model's effectiveness in explaining employee engagement and performance (see Table 1).

**Table 1** PLS predict

<i>Item(s)</i>	$Q^2_{predict}$	<i>PLS-SEM_RMSE</i>	<i>PLS-SEM_MAE</i>	<i>LM_RMSE</i>	<i>LM_MAE</i>	<i>IA_RMSE</i>	<i>IA_MAE</i>
EE1	0.337	0.671	0.480	0.746	0.557	0.824	0.531
EE2	0.301	0.735	0.543	0.846	0.602	0.879	0.635
EE3	0.164	0.754	0.577	0.888	0.688	0.825	0.604
EE4	0.214	0.715	0.560	0.794	0.631	0.807	0.668
EE5	0.214	0.790	0.611	0.999	0.758	0.891	0.700
EE6	0.263	0.852	0.666	0.920	0.717	0.993	0.773
EP1	0.249	0.596	0.446	0.629	0.500	0.688	0.460
EP10	0.016	0.622	0.446	0.751	0.543	0.627	0.405
EP11	0.101	0.535	0.387	0.627	0.491	0.564	0.347
EP12	0.041	0.603	0.439	0.702	0.541	0.616	0.385
EP13	0.049	0.546	0.428	0.657	0.509	0.560	0.419
EP2	0.222	0.528	0.419	0.601	0.475	0.599	0.462
EP3	0.138	0.555	0.471	0.623	0.498	0.598	0.529
EP4	0.054	0.665	0.517	0.774	0.621	0.684	0.519
EP5	0.046	0.695	0.524	0.818	0.645	0.711	0.506
EP6	0.043	0.592	0.437	0.636	0.496	0.605	0.381
EP7	0.093	0.571	0.426	0.654	0.512	0.599	0.385
EP8	0.111	0.532	0.398	0.664	0.492	0.564	0.392
EP9	0.119	0.541	0.397	0.663	0.493	0.577	0.400

The hypothesis testing results provide deep insights into how transformational leadership, SDL, and employee engagement contribute to employee performance (see Table 2 and Figure 1). The findings reveal that transformational leadership significantly influences employee engagement (H1:  $\beta = 0.52$ ,  $t = 7.449$ ,  $p < 0.001$ ), indicating that leaders who provide inspiration, vision, and individualised support effectively foster an engaging work environment. This aligns with prior studies emphasising that transformational leadership enhances employee motivation by making them feel valued, challenged, and empowered to contribute beyond their job descriptions (Bass, 1990; Schaufeli et al., 2006). The high significance level of this relationship suggests that transformational leadership is a key driver of engagement, as employees tend to respond positively to leaders who articulate a compelling vision, stimulate intellectual curiosity, and provide personalised encouragement (Avolio and Bass, 2004).

Employee engagement, in turn, is a strong predictor of employee performance (H2:  $\beta = 0.528$ ,  $t = 5.992$ ,  $p < 0.001$ ), reinforcing the well-documented link between engagement and performance outcomes. This finding supports the theory that engaged employees are more committed, proactive, and willing to exert discretionary effort to enhance their work quality and productivity (Kahn, 1990; Bakker and Demerouti, 2008). Employees who are emotionally and cognitively engaged in their work are more likely to take initiative, find innovative solutions to challenges, and align their contributions with organisational goals (Saks, 2006). The strength of this relationship highlights the importance of cultivating an organisational culture that actively fosters employee

engagement, as it serves as a critical mechanism through which leadership and learning interventions translate into improved performance.

**Table 2** Hypothesis testing

<i>Hypothesis</i>	<i>Original sample (O)</i>	<i>T-statistics</i>	<i>P-values</i>
H1 Transformational leadership → Employee engagement	0.52	7.449	0.000
H2 Employee engagement → Employee performance	0.528	5.992	0.000
H3 Self-directed learning → Employee engagement	0.268	3.401	0.001
H4 Self-directed learning → Employee performance	0.175	2.285	0.022
H5 Transformational leadership → Employee performance	0.073	0.689	0.491
H6 Self-directed learning → Employee engagement → Employee performance	0.142	3.062	0.002
H7 Transformational leadership → Employee engagement → Employee performance	0.274	4.99	0.000

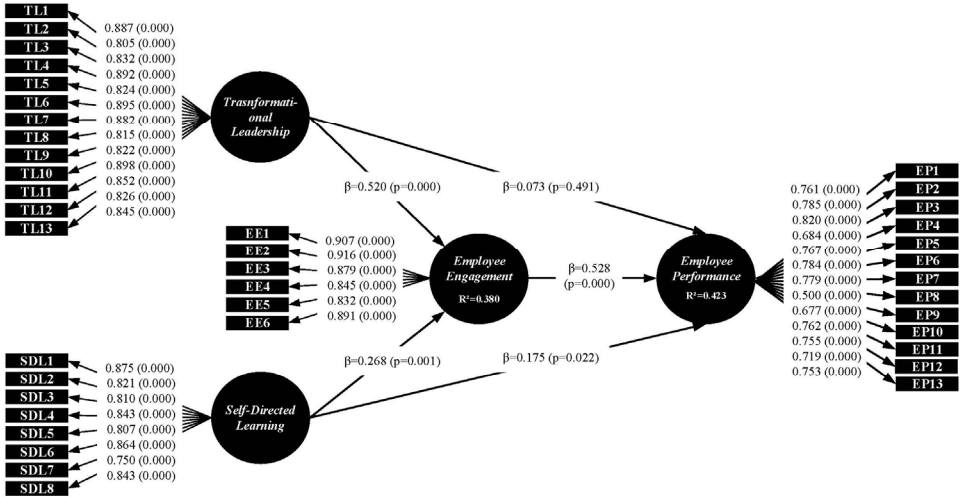
Another key finding is the significant positive effect of SDL on employee engagement (H3:  $\beta = 0.268$ ,  $t = 3.401$ ,  $p = 0.001$ ), confirming that employees who take initiative in their learning process tend to be more engaged at work. This result aligns with previous research suggesting that employees seeking new knowledge and skills develop a greater sense of autonomy and purpose, enhancing their intrinsic motivation and engagement (Garrison, 1997; Sam and Shalini, 2021). This implies that organisations should invest in frameworks that encourage SDL, such as personalised training programs, access to digital learning platforms, and opportunities for employees to select learning experiences that align with their career aspirations. The positive association between SDL and engagement suggests that employees who perceive that their organisation values continuous learning are likelier to develop a sense of belonging and motivation towards their work.

The study also finds that SDL positively influences employee performance (H4:  $\beta = 0.175$ ,  $t = 2.285$ ,  $p = 0.022$ ), suggesting that employees actively seek learning opportunities to enhance their capabilities and, consequently, their performance. Employees who take responsibility for their learning are more adaptable to industry changes, demonstrate greater problem-solving skills, and exhibit higher levels of competence in their roles (Werlen et al., 2022). Although the relationship is statistically significant, the effect size is smaller than other model variables. This suggests that while SDL contributes to employee performance, its influence becomes more substantial when other motivational and leadership factors support it.

Interestingly, transformational leadership does not significantly impact employee performance (H5:  $\beta = 0.073$ ,  $t = 0.689$ ,  $p = 0.491$ ), suggesting that leadership's effect on performance is primarily mediated by engagement. This finding contrasts with traditional assumptions that leadership directly enhances performance (Judge and Piccolo, 2004), reinforcing that leadership is more effective when it fosters engagement, which drives performance (Saks, 2006). This means that simply possessing transformational leadership traits – such as inspiring employees, encouraging innovation, and providing mentorship – is insufficient to drive performance unless it also translates into increased

employee engagement. This finding underscores the importance of leaders not only demonstrating transformational behaviours but also ensuring that these behaviours actively engage employees in meaningful ways.

**Figure 1** Bootstrapping results (see online version for colours)



The mediation analysis further confirms the role of engagement in linking leadership and learning efforts to performance. The indirect effect of SDL on employee performance through engagement (H6:  $\beta = 0.142$ ,  $t = 3.062$ ,  $p = 0.002$ ) suggests that SDL enhances engagement, which in turn boosts performance. This result highlights the importance of creating learning environments that equip employees with knowledge and stimulate engagement in their roles. Employees who take ownership of their learning process often develop a more substantial commitment to their work, leading to better performance outcomes (Garrison, 1997; Oducado, 2021).

Similarly, the indirect effect of transformational leadership on employee performance through engagement (H7:  $\beta = 0.274$ ,  $t = 4.99$ ,  $p < 0.001$ ) reinforces the idea that transformational leadership is most effective when it fosters a culture of engagement. Leaders who inspire, mentor, and challenge employees to create an environment where employees feel a strong emotional and cognitive connection to their work, ultimately resulting in higher performance levels (Bakker and Demerouti, 2008). This finding aligns with previous studies emphasising that engaged employees are more likely to go beyond their basic job responsibilities, take initiative, and demonstrate higher levels of creativity and efficiency (Macey and Schneider, 2008).

These findings underscore the importance of fostering engagement to enhance employee performance. While transformational leadership and SDL contribute to engagement, engagement emerges as the strongest predictor of performance in this study. This suggests that organisations seeking to improve employee performance should focus on strategies that drive engagement, such as leadership development programs that emphasise employee empowerment and motivation and SDL initiatives that give employees control over their professional development. The results highlight that leadership alone may not be enough to enhance performance – instead, its effectiveness is

amplified when it successfully cultivates an engaging and learning-oriented work environment.

## **5 Discussion**

The findings of this study highlight the critical role of transformational leadership, SDL, and employee engagement in shaping employee performance. The results confirm that transformational leadership strongly influences employee engagement, reinforcing previous studies suggesting that leaders who provide vision, motivation, and individualised support create a highly engaged workforce (Bass, 1990; Avolio and Bass, 2004). The significant relationship between transformational leadership and engagement aligns with the argument that effective leaders inspire their employees to transcend personal interests and commit to collective goals, fostering a positive work culture that enhances motivation and engagement (Schaufeli and Bakker, 2006).

The strong relationship between employee engagement and employee performance further supports the engagement-performance link proposed by Kahn (1990) and Bakker and Demerouti (2008). Employees who exhibit higher levels of engagement are more likely to contribute discretionary effort, demonstrate higher levels of innovation, and align their behaviours with organisational objectives. The results suggest that engaged employees are more proactive in problem-solving and exhibit a strong sense of responsibility toward their tasks, directly contributing to improved performance outcomes. This finding emphasises the importance of fostering an organisational environment that promotes engagement through meaningful work, leadership support, and professional development opportunities (Macey and Schneider, 2008).

Another key finding is the positive impact of SDL on employee engagement and performance. Employees who take initiative in their learning process tend to be more engaged at work, as they feel a sense of autonomy and purpose in developing their competencies (Garrison, 1997; Sam and Shalini, 2021). This suggests that organisations should provide continuous learning opportunities, allowing employees to tailor their development paths to their career aspirations. The study's results also indicate that SDL significantly enhances performance, albeit with a smaller effect size than engagement, implying that while learning independently contributes to performance, it is most effective when combined with other motivational factors such as leadership and engagement (Oducado, 2021; Werlen et al., 2022).

Interestingly, the study finds no significant direct relationship between transformational leadership and employee performance. This challenges the traditional view that leadership directly enhances performance (Judge and Piccolo, 2004) and instead supports the argument that leadership's influence on performance is mediated by employee engagement (Saks, 2006). This suggests that transformational leadership alone is insufficient in driving performance unless it fosters employee engagement. This finding implies that leaders must exhibit transformational behaviours and create an environment where employees feel valued, empowered, and engaged. Organisations should emphasise leadership training programs focusing on employee engagement strategies to maximise performance outcomes.

The mediation analysis further reinforces the role of engagement as a linking mechanism between leadership, learning, and performance. The significant indirect effect of SDL on performance through engagement indicates that learning initiatives should



focus on skill acquisition and fostering engagement to maximise their impact on performance (Garrison, 1997; Oducado, 2021). Similarly, the mediation effect of engagement in the transformational leadership-performance relationship underscores the need for leadership styles that prioritise employee involvement and motivation.

The implications of these findings are profound for organisational practice. First, businesses aiming to enhance performance should prioritise leadership development programs that cultivate transformational leadership qualities. Leaders should be trained to provide inspiration, intellectual stimulation, and individualised support to create a work culture that promotes engagement. Second, organisations should invest in employee development initiatives that encourage SDL. This could include investment on implementing technology based system that supports employees to access to online learning platforms, mentorship programs, and financial support for professional development activities. Lastly, employee engagement should be considered a strategic priority, with efforts to enhance engagement through recognition programs, career development opportunities, and inclusive decision-making processes.

Future research could explore the long-term effects of transformational leadership and SDL on performance, considering industry-specific challenges and workforce characteristics. Additionally, studies could examine potential moderating variables, such as organisational culture or job complexity that influence the strength of these relationships. Organisations can develop more effective strategies to drive employee performance and sustain competitive advantage by understanding how leadership, learning, and engagement interact.

## **6 Conclusions**

This study offers several key insights into how transformational leadership and SDL shape employee performance through the mediating role of employee engagement. It affirms that leadership effectiveness is not solely defined by the ability to influence outcomes directly but by its capacity to create a context in which employees are empowered, engaged, and intrinsically motivated. In particular, the research demonstrates that transformational leadership does not significantly affect performance in isolation but exerts its influence through enhancing engagement. Meanwhile, SDL is a foundational component that reinforces engagement and leads to improved performance outcomes. Employees who proactively manage their learning are likelier to exhibit commitment, adaptability, and a strong sense of ownership in their work.

### *6.1 Unique contributions*

This paper contributes to the theoretical development of human resource and organisational behaviour literature by elucidating a triple-path model that links transformational leadership, SDL, and employee engagement to performance outcomes. Specifically, it reveals that the pathway from leadership to performance is fully mediated by engagement, underscoring the psychological mechanisms that underpin employee motivation and productivity. Unlike prior studies that view leadership and learning as separate enablers, this research integrates both within a coherent mediational framework. It also extends the application of SDL, previously examined mainly in educational or individual development contexts, to the broader organisational performance domain. In

doing so, the study offers a practical roadmap for managers seeking to build performance cultures that are both autonomous and engagement-driven.

## *6.2 Limitations*

Despite these contributions, several limitations should be acknowledged. First, the study is confined to a single organisational context, which may introduce bias related to organisational culture, leadership norms, or HR practices. This context-specificity limits the external validity and may not reflect the dynamics in other industries or national cultures. Second, using cross-sectional data restricts the ability to infer causality and capture long-term behavioural changes. Third, the model does not include other potential antecedents or moderators, such as digital leadership, psychological safety, organisational learning climate, or generational differences, which could affect engagement and performance outcomes. Additionally, the reliance on self-reported data may introduce standard method variance or social desirability bias despite procedural efforts to mitigate it.

## *6.3 Future research directions*

Future research could address these limitations in several ways. First, scholars are encouraged to replicate this model across diverse industries and cultural contexts to assess its robustness and generalisability. Comparative studies between public and private sectors, or between high-context and low-context cultures, may yield valuable insights into contextual contingencies. Second, a longitudinal design could capture changes in leadership behaviour, learning habits, and engagement levels over time, thus allowing for stronger causal inferences. Third, researchers should consider incorporating moderating variables such as technological adaptability, remote work policies, or team dynamics to explore how external conditions influence the relationships uncovered in this study. Lastly, future research could benefit from qualitative or mixed-method approaches to capture employees' lived experiences of transformational leadership and learning in greater depth. This would enrich the conceptual understanding of how leadership styles and developmental autonomy are perceived and translated into performance in various work environments. In conclusion, this research underscores the necessity of cultivating engaged and self-directed employees within transformational leadership environments. It advances theory and practice by offering an integrative model for enhancing employee performance, opening several important avenues for future inquiry.

## **Declarations**

The authors declare that there are no conflicts of interest regarding the publication of this article – institutional ethical standards conducted in all procedures performed in this study involving human participants. Informed consent was obtained from all participants involved in the study, and participation was voluntary. Participants were assured of the confidentiality and anonymity of their responses. No personal identifying information was collected or reported.

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