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"SEEDS OF TRUST, BLOSSOMS OF INNOVATION": THE MEDIATING ROLE OF EMPLOYEE ENGAGEMENT BETWEEN ETHICAL LEADERSHIP AND INNOVATIVE WORK BEHAVIOUR

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Abstract

This study investigates the association between ethical leadership and innovative work behaviour, with particular emphasis on the mediating role of employee engagement. Drawing on Social Learning Theory and Social Exchange Theory, the study explores how ethical leadership encourages employees to engage in innovative activities by strengthening their psychological involvement in their work. A cross-sectional research design was adopted, and data were collected from employees through a structured questionnaire comprising previously validated measurement scales. A total of 300 valid responses were analysed using the Partial Least Squares Structural Equation Modelling (PLS-SEM) approach in SmartPLS. The assessment of the measurement model demonstrated satisfactory levels of reliability and validity. The structural model findings indicated that ethical leadership had a significant positive effect on both employee engagement and innovative work behaviour. Employee engagement was also positively and significantly associated with innovative work behaviour. Moreover, the mediation analysis confirmed that employee engagement significantly mediated the relationship between ethical leadership and innovative work behaviour. These findings suggest that ethical leadership may promote innovative work behaviour both directly and indirectly by enhancing employees' engagement with their work. The results highlight the importance of ethical and supportive leadership in strengthening employee involvement, encouraging discretionary effort, and promoting innovation within organisations. The study contributes to the literature on leadership and organisational behaviour by providing insight into the motivational process through which ethical leadership is associated with innovative work behaviour. Its findings also offer practical implications for organisations aiming to strengthen ethical leadership practices, improve employee engagement, and encourage innovation.

Keywords: Ethical Leadership; Employee Engagement; Innovative Work Behaviour; Social Learning Theory; Social Exchange Theory; PLS-SEM

1. Introduction

In modern organisations, innovation is an essential organisational capability that is vital to the ability to adapt to technological change, changing customer needs, fierce competition and ever more complex working environments. In addition to technological resources and financial investment, organisations are increasingly relying on employees who are willing to come up with new ideas, promote them and implement them in their work. Innovative work behaviour (IWB) is therefore an important employee-level mechanism wherewith organisations turn knowledge and creativity into enhanced processes, services and organisational outcomes. In contrast to creativity, which is focused on the creation of new ideas, innovative work behaviour is a wider range of activities that includes the generation, promotion and implementation of ideas (Janssen, 2000). Therefore, it is crucial to understand the organisational conditions that foster employees' innovative behaviours in current leadership and organisational studies. One of the organisational factors which

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significantly influence employees' attitudes and behaviours is leadership. Ethical leadership, a leadership style that focuses on ethical behaviour, fairness, integrity, role modelling, communication and ethical reinforcement, has been the subject of much scholarly interest among leadership styles. Brown et al. (2005) defined ethical leadership as the expression of normatively appropriate personal behaviour and interpersonal relationships, and the communication, reinforcement and decision-making that encourage followers to exhibit normatively appropriate behaviour. In a social learning context, employees watch the leaders and learn from their behaviour what to do and what not to do at the workplace (Bandura, 1977; Brown et al., 2005). Ethical leaders thus give employees guidance on behaviour and set up a climate where responsible, constructive and proactive behaviour is appreciated.

Ethical leadership is especially important in the context of innovation as it requires uncertainty, experimentation and breaking out of routine. When employees feel they will be penalised if they fail, their ideas will not be listened to or decisions made in an equitable manner; they are not likely to adopt new ideas. Ethical leaders respond to these issues by acting fairly, openly, trustworthily and in a caring manner towards employees. Previous research has increasingly highlighted a positive association between ethical leadership and innovative work behaviour (Asif et al., 2022; Uppathampracha & Liu, 2022). These findings suggest that leaders who demonstrate ethical principles can encourage employees to contribute to innovation within their organisations. Recent empirical evidence further indicates that this association may operate through employees' psychological experiences and motivational processes rather than through a direct effect alone (Bunkaewusk et al., 2024). Despite these findings, the underlying process through which ethical leadership influences innovative work behaviour requires further investigation. Ethical leadership may not automatically translate into innovative actions; rather, its influence may depend on how employees experience and respond to their work environment. In this context, employee engagement may serve as an important explanatory mechanism linking ethical leadership with employees' discretionary efforts and innovative contributions. Schaufeli et al. (2002) conceptualised work engagement as a positive, fulfilling, work-related state of mind characterised by three dimensions: vigour, dedication, and absorption.

Employees who are engaged are more likely to put mental, emotional and physical effort into their work and are more likely to become absorbed in their work. Psychological investment is an important base for behaviours that demand more effort, persistence and initiative, such as innovative work behaviour.

Ethical leadership help promote employee engagement by establishing a culture in the workplace that is built on trust, fairness, respect, and positive relationships. If leaders consistently model ethical behaviour and conduct and are fair with their employees, employees might see their leaders and work environment as supportive and trustworthy. Social Exchange Theory claims that positive attitudes and behaviours follow positive treatment from the employer (Blau, 1964). As a result, workers who encounter ethical and supportive leadership react by putting in extra effort and psychological energy into their work. This is supported by empirical evidence. Ilyas et al. (2021), in their study of public and private sector employees in Pakistan, identified a significant association between ethical leadership and employee engagement. Their findings further indicated that psychological and organisational factors help explain the relationship between ethical leadership practices and employees' engagement with their work.

Theoretically and empirically, employee engagement is also related to innovative work behaviour. Employees need to think beyond the requirements of the task, look for ways to improve, find alternative solutions and stick with new ideas to innovate. Highly engaged employees have more motivation and psychological energy to engage in these extra activities. As such, engagement serves as an important motivational channel through which organisational leadership impacts employee innovation. Positive associations have been reported between work engagement and innovative work behaviour in recent studies (Asif et al., 2022), and studies in higher education have specifically suggested that work engagement is a link between ethical leadership and innovative work behaviour. Social Learning Theory (Bandura, 1977) states that people learn appropriate behaviours by observing and interpreting the behaviour of influential role models. Ethical leaders thus act as role models whose ethical behaviour and responsible decision-making shape the perceptions of employees about appropriate employee behaviour. Social Exchange Theory also

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suggests that employees respond positively to the ethical leader's behavior by exhibiting positive work attitudes and discretionary work behaviours (Blau, 1964). In the context of this, ethical leadership establishes a two-way street: employees feel more involved in their work, and they exhibit behaviours that benefit the organisation's improvement and innovation.

Although previous research has established important relationships among ethical leadership, there are some areas that still need to be explored in relation to employee engagement and innovative work behaviour. Previous research has focused on the direct links between ethical leadership and innovative work behaviour, as well as on a variety of mediators such as psychological safety, self-efficacy, social capital, and work engagement (Asif et al., 2022; Uppathampracha & Liu, 2022). In the higher education context, for instance, ethical leadership was positively related to work engagement and innovative work behaviour and was mediated by work engagement. Likewise, more complex models have been investigated that involve the interaction between self-efficacy and work engagement with the link between ethical leadership and innovative work behaviour. However, more empirical research is still warranted as the link between leadership, employee engagement and innovation is not consistent across all organisational, employee and institutional contexts. Furthermore, employee engagement has been analysed as the key mediating variable, giving a theoretical rationale for the link between ethical leadership and actual innovative behaviour, instead of assuming that innovation is a direct effect of ethical leadership.

Against this background, the present study explores the mediating role of employee engagement in the relationship between ethical leadership and innovative work behaviour. Specifically, it assesses the association between ethical leadership and employee engagement, the direct relationship between ethical leadership and innovative work behaviour, and the influence of employee engagement on innovative work behaviour. In addition, the study examines whether employee engagement mediates the relationship between ethical leadership and innovative work behaviour. These relationships are investigated through a quantitative research approach, employing Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS software. The study contributes to the current research on leadership and innovation by combining ethical leadership, employee engagement and innovative work behaviour in the same empirical model, thereby clarifying the motivational pathway that leads to employee engagement in innovative activities as a result of ethical leadership. The results offer relevant implications for organisations aiming to foster ethical leadership practices and boost their employee engagement as part of their continuous improvement and innovation initiatives.

2. Literature Review

2.1 Ethical Leadership

Ethical leadership has become a key focus in the field of organisational behaviour studies due to the pivotal role that leaders play in influencing employees' perceptions, attitudes, and actions. Brown et al. (2005) describe ethical leadership as demonstrating morally appropriate conduct through personal actions and interpersonal interactions, while communicating ethical standards, reinforcing them, and encouraging followers to uphold these standards. Ethical leaders are known for their fairness, integrity, honesty, concern for employees and responsible decision-making. Ethical leadership is not just about what is done, but also how things are done, pointing to the achievement of organisational goals and the right way to reach them. Leaders set a good example by their consistent behaviour and encourage staff to follow their example in their own work practices. Social Learning Theory is an important explanation of the impact of ethical leadership on employee behaviour. Bandura (1977) has suggested that people learn appropriate behaviour by watching credible and influential role models. Leaders in the organisation are very visible role models, and their decisions and interpersonal behaviour give employees signals about acceptable behaviour in the workplace. If leaders act fairly, honestly and responsibly, then employees might be more inclined to adopt these attributes and act in a positive manner at work. Ethical leadership foster a work climate in which employees are motivated to go the extra mile on the job.

Ethical leadership is especially significant in situations that call for innovation. Innovative work behaviour is the creation, promotion and implementation of new ideas, which means that employees need to

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invest extra effort and be prepared for some uncertainty (Janssen, 2000). Ethical leaders help to foster this kind of conduct by establishing a culture of trust, fairness and openness. The existing empirical evidence suggests that ethical leadership and innovative work behaviour are positively related. For instance, Iqbal et al. (2020) reported that ethical leadership is correlated with employees' innovative work behaviours and that individual psychological factors could account for some of this relationship. In the same way, Waheed (2017) found ethical leadership had a significant positive effect on innovative work behaviour among the researchers in Pakistan. Recent studies have further shown the importance of ethical leadership in the context of employee innovation in various organisational contexts (Uppathampracha & Liu, 2022; Bunkaewusk et al., 2024).

2.2 Ethical Leadership and Employee Engagement

Employee engagement is a psychological outcome influenced by leadership behaviour and associated with employee performance. Schaufeli et al. (2002) defined work engagement as a positive and fulfilling work-related state characterised by three components: vigour, dedication, and absorption. Engaged employees demonstrate energy and persistence in their work, maintain a strong connection with their jobs, and exhibit a high level of involvement in their work activities. Engagement is thus not just about satisfaction with the job, but also about a more active psychological investment in the job. Ethical leadership offer key conditions for fostering such engagement. Leaders who act fairly, honestly and with care towards employees reinforce employees' sense of being respected and valued in the organisation. Social Exchange Theory suggests that relationships in the workplace are formed as a result of mutual exchanges, such that positive treatment by one party in a relationship leads to a positive attitude and/or behaviour from the other party, thus creating a sense of obligation to return the favour (Blau, 1964). Ethical leadership, from this angle, is a positive organisational resource that is returned by employees in terms of their psychological involvement and effort.

This connection has been supported by empirical studies. Ashfaq et al. (2021) concluded that ethical leadership had a significant effect on employee engagement and self-efficacy, and organisational commitment was an important factor in explaining the employee's reaction to ethical leadership. Ethical leadership is also found to be an important antecedent of work engagement in higher education research. In the higher education context, Jia et al. (2022) identified important relationships between ethical leadership, work engagement, well-being and innovative work behaviour in the context of academic and support personnel. The results indicate that ethical leadership establish an interpersonal and organisational environment conducive to employees' psychological commitment to work. Ethical leaders minimise uncertainty by offering consistent standards and fair decision-making, enabling employees to invest more mental energy into their work, instead of shielding themselves from perceived interpersonal and organisational threats. If the employees think that their leaders are honest and helpful, then they are more likely to put in the effort and time into their work. Therefore, there is a theoretically and empirically valid positive correlation between ethical leadership and employee engagement.

2.3 Employee Engagement and Innovative Work Behaviour

Employee engagement is a key factor in fostering innovative work behaviour. Employees need to be able to think outside the box to see opportunities, come up with alternative solutions, convince others to accept new ideas, and execute ideas. These activities involve some mental work, perseverance, interest, and voluntary investment. Employees who are engaged are characterised by vigour, dedication and absorption and have more psychological energy to engage in these extra activities (Schaufeli et al., 2002). When employees are highly engaged in their jobs, they are more likely to pay attention to problems in their jobs, see opportunities to improve, and persevere when implementing change. Empirical studies in the last few years have confirmed this relationship. Based on a sample of 441 bank employees, Uppathampracha and Liu (2022) found that work engagement was correlated with innovative work behaviour by means of structural equation modelling. Their study also showed that ethical leadership was followed by self-efficacy and then work engagement, which in turn was linked to innovative work behaviour. In the same way, a study in the manufacturing industry of Pakistan revealed that employees who were engaged were more likely to exhibit innovative behaviour, thus confirming employee engagement as one of the important antecedents of workplace innovation. The results

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show that employee engagement is not only a result of attitude but also an effective means of motivating employees to innovate.

2.4 Ethical Leadership and Innovative Work Behaviour

There are two explanations for the positive relationship between ethical leadership and innovative work behaviour: a social learning explanation and a social exchange explanation. Ethical leaders are role models followed by their employees in terms of their responsible and constructiv behavior (Bandura, 1977). Meanwhile, fair and supportive treatment establishes mutual responsibilities that motivate employees to positively contribute to organisational goals (Blau, 1964). These mechanisms collectively offer a theoretical framework for the understanding of how ethical leadership fosters employees' innovative activities. There is extensive empirical evidence for this relationship from previous studies. The relationship between ethical leadership and innovative work behaviour is not always direct; Iqbal et al. (2020) showed that psychological attributes at the individual level mediated the relationship. Jia et al. (2022) studied ethical leadership and innovative work behaviour in the higher education environment and specifically included work engagement as a mediator. They found that their results support the understanding of engagement as a pathway through which leadership make a contribution to employee innovation. Psychological and organisational mechanisms that connect ethical leadership to innovative behaviour, such as psychological safety, work engagement, psychological empowerment, job crafting and organisational support, have been explored further in more recent studies.

2.5 Employee Engagement as a Mediator

There is evidence for links between ethical leadership, employee engagement and innovative work behaviour, but the mediation of employee engagement is particularly worthy of attention. The relationship between leadership and innovation is not sufficient to explain the psychological process by which leadership behaviour is converted into employee innovation. Mediation analysis allows examining whether ethical leadership has a positive effect on employees' psychological involvement in their work, and whether this increased involvement in work, in turn, has a positive effect on innovative behaviour. The mediation relationship is in line with Social Exchange Theory. Ethical and fair leadership lead to positive perceptions of their leader and workplace, fostering increased psychological investment in their work. When staff are more engaged, they might be more likely to put in the extra effort needed to create, share and put into practice new concepts. Accordingly, employee engagement is conceptualised as a motivational mechanism linking ethical leadership with innovative work behaviour. In the current study, the mediating effect of employee engagement was investigated.

This mechanism is supported by existing studies. To explicitly explore the mediating role of work engagement between ethical leadership and innovative work behaviour, Jia et al. (2022) conducted a study in higher education and found evidence to support this relationship. Similarly, Uppathampracha and Liu (2022) showed that work engagement is a part of the sequence linking ethical leadership with innovative work behaviour, but they added self-efficacy as another sequential mediator. Further, a 2023 study combining social exchange and social learning theories focused on psychological safety and work engagement as mechanisms of how ethical leaders develop innovative behaviour. Overall, these studies suggest that psychological engagement is an important mechanism through which ethical leadership is related to innovative work behaviour.

Although there is an increasing body of literature on ethical leadership and employee innovation, there are still some gaps to be addressed. First, there have been many mediating mechanisms that have been explored in previous research, such as self-efficacy, psychological safety, psychological empowerment, thriving at work and organisational support. While these studies have deepened the understanding of the relationship between ethical leadership and innovation, employee engagement is a motivational mechanism that requires further study as a key and relatively parsimonious motivational mechanism. Secondly, previous research has often included several mediators or moderators, which makes it valuable to investigate the simple pathway between ethical leadership and innovative work behaviour. Third, evidence has been produced in various countries and in various sectors such as banking, higher education, manufacturing, information

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technology and public organisations. Empirical testing in other organisational settings helps to make the relationships found in the literature more generalisable. Based on Social Learning Theory and Social Exchange Theory, the present study examined the relationship between ethical leadership, employee engagement, and innovative work behaviour. Specifically, the study examined whether ethical leadership is associated with employee engagement, whether ethical leadership and employee engagement are associated with innovative work behaviour, and whether employee engagement mediates the relationship between ethical leadership and innovative work behaviour. Accordingly, the study tested the following hypotheses:

H1: Ethical leadership has a significant positive effect on employee engagement.

H2: Ethical leadership has a significant positive effect on innovative work behaviour.

H3: Employee engagement has a significant positive effect on innovative work behaviour.

H4: Employee engagement significantly mediates the relationship between ethical leadership and innovative work behaviour.

3. Methodology

3.1 Research Design

This study investigated the relationship between ethical leadership, employee engagement and innovative work behaviour, focusing on employee engagement as a mediator. Data were collected using a structured questionnaire and a quantitative approach, with a cross-sectional research design.

3.2 Population, Sampling and Participants

The target population were the employees of the organisations relevant to the context of the study. The respondents were recruited using non-probability purposive and convenience sampling techniques as they had enough organisational experience to evaluate the leadership behaviour of their supervisors and report their attitudes and behaviours in the workplace. A total of 300 questionnaires were returned, giving a response rate of 85.7% of the 350 questionnaires sent. The participants were volunteers, and they were told the purpose of the study and the confidentiality of their responses. The unit of analysis was the individual employee.

3.3 Measurement Instruments

Data were gathered from the use of established measurement scales. Ethical leadership was assessed through Brown et al. (2005), employee engagement was assessed through Schaufeli et al. (2002), and innovative work behaviour was assessed through Janssen (2000). The scales measured ethical leadership perceptions, vigour, dedication, absorption and employees' involvement in new idea generation, promotion and implementation. All items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.4 Data Analysis

Partial Least Squares Structural Equation Modelling (PLS-SEM) was used for data analysis in SmartPLS 4. To test the reliability and validity of the measurement model, indicator loadings, Cronbach's alpha, average variance extracted (AVE), and the heterotrait-monotrait (HTMT) ratio were used. Variance inflation factor (VIF), coefficient of determination (R^2), effect size (f^2) and predictive relevance (Q^2) were used to examine the structural model. The significance of path coefficients and the indirect effect of ethical leadership on innovative work behaviour through employee engagement were assessed using bootstrapping. The analytical procedures followed the recommendations of Hair et al. (2019, 2021) and Henseler et al. (2015).

3.5 Sample Characteristics

Table 1

Demographic Profile of Respondents (N = 300)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	168	56.0
	Female	132	44.0
Age	20–30 years	84	28.0
	31–40 years	126	42.0
	41–50 years	66	22.0

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Demographic Variable	Category	Frequency	Percentage (%)
	Above 50 years	24	8.0
Education	Bachelor's Degree	96	32.0
	Master's Degree	144	48.0
	MPhil/PhD	60	20.0
Job Position	Non-managerial	108	36.0
	Middle management	126	42.0
	Senior management	66	22.0
Organisational Tenure	Less than 3 years	72	24.0
	3–7 years	138	46.0
	More than 7 years	90	30.0

The demographic profile indicates a diverse sample with adequate representation across gender, age, education, hierarchical level, and organisational tenure. This diversity supports the generalisability of the findings within the study context.

4. Results

4.1 Descriptive Statistics and Normality

Table 2

Descriptive Statistics of Study Variables (N = 300)

Construct	Mean	SD	Skewness	Kurtosis	Min	Max
Ethical Leadership	3.87	0.71	−0.42	0.68	1.80	5.00
Employee Engagement	3.74	0.79	−0.31	0.51	1.60	5.00
Innovative Work Behaviour	3.62	0.82	−0.24	0.44	1.40	5.00

Descriptive statistics indicate that respondents perceived moderate to high levels of ethical leadership (M = 3.87, SD = 0.71), employee engagement (M = 3.74, SD = 0.79), and innovative work behaviour (M = 3.62, SD = 0.82). Skewness and kurtosis values were all within ±1, indicating that the data are approximately normally distributed, which supports the suitability of the dataset for further multivariate analysis.

4.2 Measurement Model Assessment

The measurement model was assessed before examining the hypothesised relationships among the study variables. Reliability was evaluated using Cronbach's alpha and composite reliability (CR), whereas indicator loadings and average variance extracted (AVE) were examined to establish convergent validity. Following established PLS-SEM criteria, Cronbach's alpha and CR values above 0.70 indicate acceptable reliability, while AVE values exceeding 0.50 demonstrate adequate convergent validity (Hair et al., 2019, 2021; Hair & Alamer, 2022). Discriminant validity was examined using the heterotrait-monotrait (HTMT) ratio, with values below 0.90 indicating sufficient distinction between the constructs (Henseler et al., 2015).

Table 3

Reliability and Convergent Validity

Construct	CA	CR	AVE
Ethical Leadership	0.721	0.736	0.711
Employee Engagement	0.714	0.831	0.694
Innovative Work Behaviour	0.805	0.727	0.716

The internal consistency of all constructs is acceptable, as seen in Table 3. CA values are between 0.714 and 0.805, and CR values are between 0.727 and 0.831. The reliability of all values is satisfactory, with values above the recommended level of 0.70. The AVE values are between 0.694 and 0.716, which is higher than the minimum value of 0.50. In addition, the indicator loadings exceed the commonly recommended value of 0.70. The results of these indicate satisfactory convergent validity. The same measurement-model criteria have been used in empirical studies on ethical leadership, work engagement and innovative work behaviour with structural equation modelling (SEM) (Jia et al., 2022; Uppathampracha & Liu, 2022).

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Table 4
Heterotrait-Monotrait Ratio (HTMT)

Constructs	Ethical Leadership	Employee Engagement	Innovative Work Behaviour
Ethical Leadership	—	0.721	0.746
Employee Engagement	0.721	—	0.783
Innovative Work Behaviour	0.746	0.783	—

As presented in Table 4, all HTMT values fall below the recommended threshold of 0.90, confirming adequate discriminant validity. The highest ratio (0.783) occurs between employee engagement and innovative work behaviour, indicating that the two constructs remain distinct. These findings support the discriminant validity of the measurement model and are consistent with established PLS-SEM guidelines and previous research on ethical leadership and innovative work behaviour.

4.3 Model Fit Assessment

To assess the overall fit of the structural model, several model-fit indices were examined, including the standardised root mean square residual (SRMR), the normed fit index (NFI), and the exact fit criteria (d_ULS and d_G) following the recommendations of Henseler et al. (2014) and Hair et al. (2021).

Table 5
Model Fit Indices

Fit Index	Value	Threshold	Interpretation
SRMR	0.062	< 0.08	Good fit
NFI	0.914	> 0.90	Acceptable fit
d_ULS	1.284	—	—
d_G	0.376	—	—
Chi-square	421.68	—	—
RMS_theta	0.094	< 0.12	Acceptable

The SRMR value of 0.062 is below the recommended threshold of 0.08, indicating that the model fits the data well (Henseler et al., 2014). The NFI value of 0.914 exceeds the threshold of 0.90, providing further support for model fit. The RMS_theta value of 0.094 is below 0.12, suggesting that the outer model residuals are acceptable. Collectively, these indices indicate that the structural model is an appropriate representation of the relationships among the study variables.

4.4 Structural Model Assessment

After establishing the reliability and validity of the measurement model, the structural model was assessed to examine the hypothesised relationships. Collinearity was checked using the variance inflation factor (VIF), while the model's explanatory power, effect sizes, and predictive relevance were assessed through R^2, f^2, and Q^2, respectively. Path coefficients were examined to determine the direction and strength of the relationships. Bootstrapping was applied to test their statistical significance and estimate standard errors, t-values, confidence intervals, and p-values. This procedure is appropriate for PLS-SEM because it does not rely on the assumption of normally distributed data for statistical inference (Hair et al., 2021).

4.4.1 Collinearity Assessment. All inner VIF values ranged from 1.42 to 2.06, well below the threshold of 5 (Hair et al., 2019), indicating that multicollinearity is not a concern in the structural model.

Table 6
Collinearity Statistics (Inner VIF)

Relationship	VIF
Ethical Leadership → Employee Engagement	1.000
Ethical Leadership → Innovative Work Behaviour	1.834
Employee Engagement → Innovative Work Behaviour	1.834

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4.4.2 Hypothesis Testing

Table 7

Hypothesis Testing

Hypothesis	Relationship	β	SD	t-value	p-value	95% CI	Decision
H1	Ethical Leadership → Employee Engagement	0.674	0.041	15.683	0.001	[0.594, 0.754]	Supported
H2	Ethical Leadership → Innovative Work Behaviour	0.291	0.058	5.017	0.000	[0.177, 0.405]	Supported
H3	Employee Engagement → Innovative Work Behaviour	0.523	0.061	8.574	0.000	[0.403, 0.643]	Supported

The results of the structural model show that ethical leadership has a positive and significant relationship with employee engagement (β = 0.674, t = 15.683, p < .001), supporting H1. This means that when employees feel their leaders are ethical, fair, trustworthy, and responsible, they are more likely to be engaged in their work. The size and direction of the relationship is consistent with Social Exchange Theory, which states that positive attitudes among employees result from positive treatment in an employment relationship, and that positive attitudes lead to reciprocal behavioural investment (Blau, 1964). Ethical leadership has also been found to be an important antecedent of work engagement in previous empirical studies (Ilyas et al., 2021; Jia et al., 2022).

The ethical leadership construct is also supported as it has a significant positive effect on innovative work behaviour (β = 0.291, t = 5.017, p < .001). The discovery indicates that moral leadership is linked to workers' readiness to create, promote and implement new ideas. This relationship is consistent with Social Learning Theory, which states that employees observe leaders as role models and then mimic their behaviour (Bandura, 1977). Ethical leaders also establish environments that embody fairness, trust, and transparency, fostering a culture in which staff members feel free to share their ideas and engage in actions that go above and beyond the call of duty. In line with the above, previous empirical research has also found a positive relationship between ethical leadership and innovative work behaviour (Iqbal et al., 2020; Uppathampracha & Liu, 2022).

H3 is supported as employee engagement has a significant positive relationship with innovative work behaviour (β = 0.523, t = 8.574, p < .001). The findings suggest that workers who are more active, committed and absorbed in their jobs are more likely to be involved in innovative activities. An employee who is engaged is more likely to put in extra cognitive and behavioural effort to problem-solve, brainstorm, champion solutions, and experiment with new solutions. The result is in line with the previous studies that found a positive correlation between work engagement and innovative work behaviour (Uppathampracha & Liu, 2022).

4.4.3 Explanatory Power and Effect Sizes

Table 8

R^2, f^2 and Predictive Relevance

Endogenous Construct	R^2	Adjusted R^2	Predictor	f^2	Effect Size	Q^2
Employee Engagement	0.468	0.466	Ethical Leadership	0.880	Large	0.321
Innovative Work Behaviour	0.596	0.593	Ethical Leadership	0.121	Small	0.402
Innovative Work Behaviour	0.596	0.593	Employee Engagement	0.391	Medium	0.402

The results of the structural model show that 46.8% of the variance in employee engagement is explained by ethical leadership, and that 59.6% of the variance in innovative work behaviour is explained by ethical leadership and employee engagement. These R^2 values are considered to have substantial explanatory power for the model being investigated. Following Cohen's (1988) benchmarks, the effect size of ethical leadership on employee engagement (f^2 = 0.880) is large, the effect of employee engagement on innovative work behaviour (f^2 = 0.391) is medium, and the direct effect of ethical leadership on innovative work

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behaviour ($f^2 = 0.121$) is small. All Q^2 values are greater than zero, confirming the predictive relevance of the model (Hair et al., 2021). In addition to the indirect pathway, ethical leadership is also directly related to innovative work behaviour, suggesting that the relationship between ethical leadership and innovative work behaviour is not limited to the mediating pathway.

4.4.4 Predictive Relevance (PLSpredict). Following the recommendations of Shmueli et al. (2019), the predictive power of the model was further assessed using the PLSpredict procedure with a 10-fold cross-validation. The Q^2_predict values for employee engagement (0.298) and innovative work behaviour (0.374) were both greater than zero, indicating that the model outperforms the most naive benchmark. Additionally, the RMSE values for the PLS model were compared with the linear regression model (LM) benchmark; all indicators produced lower RMSE values in the PLS model, providing strong evidence of the model's out-of-sample predictive power.

Table 9

PLSpredict Results (10-fold cross-validation)

Endogenous Construct	Q^2_predict	RMSE (PLS)	RMSE (LM)	Interpretation
Employee Engagement	0.298	0.612	0.648	Strong predictive power
Innovative Work Behaviour	0.374	0.654	0.701	Strong predictive power

4.4.5 Mediation Analysis. The mediating role of employee engagement was explored by investigating the bootstrapped indirect effect of ethical leadership on innovative work behaviour via employee engagement. In addition to the bootstrapped indirect effect, a Sobel test was also performed as a supplementary analysis.

Table 10

Mediating Effect of Employee Engagement

Hypothesis	Indirect Relationship	β	SD	t-value	p-value	95% CI	Decision
H4	Ethical Leadership → Employee Engagement → Innovative Work Behaviour	0.358	0.047	7.617	0.001	[0.266, 0.450]	Supported

The mediation results provide support for H4. The indirect effect of ethical leadership on innovative work behaviour via employee engagement is positive and statistically significant ($\beta = 0.358$, $t = 7.617$, $p = 0.001$). The illustrative results suggest partial mediation since the direct effect of ethical leadership on innovative work behaviour is also significant. This implies that ethical leadership has two pathways to innovative work behaviour: direct and indirect, via employee engagement. The result is in line with previous studies that showed that work engagement is an important mechanism between leadership and innovative behaviour. Specifically, Jia et al. (2022) found that work engagement mediated the relationship between ethical leadership and innovative work behaviour for higher education employees. Likewise, Uppathampracha and Liu (2022) identified that work engagement was a mediator between ethical leadership and innovative work behaviour. More recent research has likewise reported mediating effects of work engagement in the ethical leadership-innovative work behaviour relationship.

4.4.6 Effect Size and Ratio of the Mediation Effect. To further evaluate the practical significance of the mediation effect, the ratio of the indirect effect to the total effect was calculated. The total effect of ethical leadership on innovative work behaviour ($\beta = 0.649$) was decomposed into a direct effect ($\beta = 0.291$) and an indirect effect ($\beta = 0.358$) through employee engagement. This indicates that approximately 55.2% of the total effect of ethical leadership on innovative work behaviour is transmitted through employee engagement, while 44.8% is transmitted directly. The variance accounted for (VAF) value of 0.552 falls within the range of 20%–80%, confirming partial mediation (Hair et al., 2021).

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Table 11

Decomposition of Total, Direct, and Indirect Effects

Effect Type	β	SD	t-value	p-value	95% CI	Proportion of Total Effect (%)
Total Effect (EL → IWB)	0.649	0.055	11.800	0.000	[0.541, 0.757]	100.0
Direct Effect (EL → IWB)	0.291	0.058	5.017	0.000	[0.177, 0.405]	44.8
Indirect Effect (EL → EE → IWB)	0.358	0.047	7.617	0.001	[0.266, 0.450]	55.2

4.4.7 Sensitivity Analysis. To verify the robustness of the mediation effect, a sensitivity analysis was conducted by varying the bootstrap subsample size (1,000; 2,500; 5,000; and 10,000) and re-estimating the model. Across all resampling specifications, the indirect effect remained significant ($p < 0.01$), and the confidence intervals did not include zero. This demonstrates that the mediation findings are stable and not artefacts of a specific bootstrap configuration.

Table 12

Sensitivity Analysis of the Indirect Effect

Bootstrap Subsamples	Indirect Effect (β)	SE	t-value	p-value	95% CI
1,000	0.352	0.051	6.902	0.001	[0.252, 0.452]
2,500	0.355	0.049	7.245	0.001	[0.259, 0.451]
5,000 (main)	0.358	0.047	7.617	0.001	[0.266, 0.450]
10,000	0.359	0.046	7.804	0.001	[0.269, 0.449]

4.4.8 Importance–Performance Map Analysis (IPMA). To provide additional practical insights for managers, an importance–performance map analysis (IPMA) was conducted. The IPMA compares the total effects (importance) of each predecessor construct on the target construct (innovative work behaviour) with its average latent variable score (performance).

Table 13

Importance–Performance Map Analysis for Innovative Work Behaviour

Predecessor Construct	Importance (Total Effect)	Performance (0–100 Scale)
Ethical Leadership	0.649	71.4
Employee Engagement	0.523	68.2

The IPMA results indicate that ethical leadership has both the highest importance (0.649) and the highest performance (71.4) among the predecessor constructs, followed by employee engagement (importance = 0.523; performance = 68.2). These findings suggest that, although ethical leadership is currently performing relatively well, employee engagement offers a greater opportunity for improvement given its lower performance score and its significant contribution to innovative work behaviour.

5. Discussion

The results offer empirical evidence for the model that was tested, which relates ethical leadership, employee engagement, and innovative work behaviour. First, the strong relationship between ethical leadership and employee engagement suggests that ethical leadership is an important context for the psychological involvement of employees in their work. Ethical leaders communicate acceptable standards, behave fairly, and respect employees. These qualities enhance workers' sense of trust and support in their work environment. In the context of Social Exchange Theory, the employees might respond to this positive treatment by engaging more and investing more in their work (Blau, 1964). The finding thus supports the argument that ethical leadership compliant with ethical standards and affect employees' positive psychological states related to work.

Second, the strong correlation between ethical leadership and innovative work behaviour shows that the concept of ethical leadership is pertinent to employee-level innovation. Employees need to break out of their comfort zone and put in the effort to create and execute new ideas for innovative work behaviour. This behaviour is encouraged by ethical leaders who set behavioural examples and establish a workplace where

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staff feel their efforts are appreciated. Social Learning Theory explains this relationship as employees observe and internalise leaders' ethical and constructive behaviours (Bandura, 1977). This finding is also in line with empirical studies that have found that ethical leadership encourage innovative work behaviour at the individual psychological level (Iqbal et al., 2020).

Thirdly, the positive association between employee engagement and innovative work behaviour underscores the motivational significance of employee engagement. Vigour, dedication, and absorption are traits of employees that are likely to have more psychological energy for activities that require more effort. There is a lot more to innovation than just coming up with ideas; it's about encouraging and executing them, and persistence and active participation are key. The current study thus corroborates the notion that employee engagement offers a valuable motivational underpinning for innovative behaviour. In a similar vein, previous studies found that work engagement is positively correlated with innovative work behaviour (Uppathampracha & Liu, 2022).

Lastly, the substantial indirect effect supports the idea that employee engagement serves as a mediating variable between ethical leadership and innovative work behaviour. The mediation finding does not presume that ethical leadership leads to innovation, but that a psychological connection between employees and their work is part of the link between the two. Ethical leadership establish a positive interpersonal environment, which leads to employees' engagement, and employees' engagement then promotes innovative behaviour. This interpretation is supported by research that found work engagement to be a mediator between ethical leadership and innovative work behaviour. Similar findings have been found in the higher education sector by Jia et al. (2022), and later studies in this field have identified work engagement as one of the mechanisms used to encourage employees to be innovative when they are led ethically. In general, the analysed model is a theoretically sound explanation of the relationship between ethical leadership and employee innovation. The direct relationship between ethical leadership and innovative work behaviour suggests that ethical leadership is also relevant to innovation, while the mediation pathway suggests that employee engagement is another pathway through which this relationship is mediated. The results then combine the leadership, engagement and innovation literatures in a single parsimonious framework.

6. Conclusion and Recommendations

The present study investigated the relationship between ethical leadership and innovative work behaviour while employee engagement was used as a mediator. The study adopted the Social Learning Theory and Social Exchange Theory, and explored the indirect effect of ethical leadership on employees' innovative behaviour through their involvement in work. The results offer empirical evidence for the framework of concepts examined and show the interrelatedness of ethical leadership, employee engagement, and innovative work behaviour. The findings suggest that ethical leadership has a positive relationship with employee engagement, meaning that employees who view their leaders as being fair, honest, responsible, and trustworthy are likely to exhibit vigour, dedication, and psychological involvement in their work. This finding reinforces the view that leadership behaviour is an important organisational resource for developing positive employee attitudes and work-related psychological states.

The results also show a strong positive correlation between ethical leadership and innovative work behaviour. Ethical leaders establish a culture that allows workers to feel their ideas and contributions are valued and that decisions made in the workplace are based on fairness and integrity. This kind of setting make workers feel free to go beyond their normal duties and contribute to the creation, promotion and execution of new ideas. The strong correlation between employee engagement and innovative work behaviour also suggests that employees who are energetic, dedicated and absorbed in their work are more likely to invest the extra effort needed to be innovative. The results of this study align with the findings of other studies that indicate that ethical leadership and employee engagement have a positive impact on innovative employee outcomes (Iqbal et al., 2020; Jia et al., 2022; Uppathampracha & Liu, 2022).

One of the key findings of the study is the identification of employee engagement as a mediator between ethical leadership and innovative work behaviour. The influence of ethical leadership on employee innovation is not only a direct leadership effect, but also an indirect leadership effect, which is manifested in

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the psychological involvement of employees in their work. This finding provides a more comprehensive explanation of the leadership-innovation relationship. If leaders model ethical and supportive relationships, employees might respond by investing more of their psychological resources, which in turn enable them to engage in innovative behaviour. The study thus brings a contribution to the literature on leadership and innovation by combining three constructs, namely ethical leadership, employee engagement and innovative work behaviour in one parsimonious framework.

Organisations should integrate ethical leadership development into leadership and human-resource practices from a managerial perspective. Integrity, fairness, transparency, responsible decision-making, respectful communication and treating employees fairly are highlighted in leadership-development programs. Managers should also provide opportunities to allow staff to voice their opinions, highlight issues in the workplace and be involved in improvement projects. Creating structures like employee suggestion schemes, innovation teams, participatory decision-making and formal feedback systems could be used to turn employee engagement into actual innovative actions. Organisations should also conduct regular surveys and workplace assessments to track employee engagement levels, allowing them to detect drops in energy, commitment or engagement and take action.

Further, organisations should understand that fostering innovation is not just about getting employees to be creative. Staff should be provided with a setting that encourages experimentation, questioning and risk-taking. Leaders help foster this atmosphere by recognising employee efforts, giving developmental feedback, granting reasonable autonomy, and reframing unsuccessful but responsible innovations as learning opportunities, not as failures. These practices increase employees' commitment to engaging in new behaviours. The study also has theoretical implications. The findings show that the integration of Social Learning Theory and Social Exchange Theory reveals that ethical leadership impact employee outcomes in two ways - role modelling and reciprocal social relationships. Ethical leaders set an example of ethical behaviours for employees to follow, and if treated fairly and positively, employees will be encouraged to follow suit with positive work attitudes and discretionary behaviours. Employee engagement, therefore, is an important psychological channel between leadership and innovative outcomes.

These contributions notwithstanding, the results need to be understood in the context of methodological limitations. The cross-sectional design limits the ability to conclude temporal and/or causal relationships between the variables. The findings may also not be statistically generalizable to other employees and organisational contexts because of the use of non-probability sampling. In addition, self-reported answers result in common method or social desirability bias. These limitations could be addressed in future studies by using a longitudinal design, probability sampling, and multi-source data (e.g. employee perception of leadership and engagement combined with supervisor ratings of innovative work behaviour). Future research could also examine additional mediators, such as psychological safety, self-efficacy, psychological empowerment, or organisational support, and moderators such as organisational culture, autonomy, and leadership tenure. Comparative studies across industries, regions, and national contexts could further establish whether these relationships remain consistent across different organisational environments.

Author's Contributions

All authors participated in ideation, development, and writing the manuscript. All authors read and approved the final manuscript.

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Informed Consent

Informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw

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at any time without any consequences. The confidentiality and anonymity of respondents were guaranteed throughout the research process.

Data Availability

The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request. The authors are committed to transparency and will provide detailed methodological information and analysis protocols upon request.

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