



The influence of ethical leadership on job embeddedness and engagement among nurses in Musoma municipality, Mara Region, Tanzania

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ABSTRACT

Ethical leadership has been linked to favorable outcomes for nurses and healthcare organizations. Nurses who work for ethical leaders are committed, empowered, and do their best for their healthcare organizations. Job embeddedness and engagement are key for nurse commitment, innovation, performance, and satisfaction. This study investigated the influence of ethical leadership on job embeddedness and engagement among nurses in Musoma Municipal Hospital (MMH) and Mwalimu Nyerere Regional Referral Hospital (MNRRH) in Tanzania. The research employed a quantitative study approach and used the cross-sectional survey as the study design. The study population was 425 employees, and the sample size was 250 nurses. In this study, quantitative data were gathered using questionnaires and analyzed using descriptive statistics and multivariate regression analysis with the aid of the Statistical Package for the Social Sciences tool. The results showed a positive significant relationship between job embeddedness and engagement and leaders' value, voice, and virtue ($p=0.000$). However, ethical voice had no relationship with job embeddedness ($p=0.840$). The findings indicated that ethical leadership theory can be applied in understanding job embeddedness and engagement among nurses. TANESCO and other public institutions should focus on fostering supportive managerial practices and reinforcing performance reforms. These behavioral interventions can complement technical reforms to enhance service delivery and institutional performance. The study recommends implementing policies that promote ethical leadership, transparency, and professional growth. Strengthening nurse engagement will improve workforce well-being and contribute to better patient care and healthcare system performance.

Keywords: Engagement, Job Embeddedness, Leader's Values, Leader's Virtue, Leader's Vision, Leader's Voice

1. INTRODUCTION

In today's competitive, globalized environment, organizations encounter various obstacles in their pursuit of goals. Achieving organizational goals appears unattainable without the embeddedness and engagement of the workforce (Boğan et al., 2020). Job embeddedness is a crucial element concerning employee loyalty and retention, encompassing a range of factors influencing nurses' decisions to stay (Ahn et al., 2018). Unlike turnover, the concept of job embeddedness places a strong emphasis on strategies to retain employees rather than the psychological processes leading to resignation (Badrinarayanan et al., 2021). Employee engagement is defined as the level of emotional investment, sense of purpose, and motivation employees have toward contributing to organizational objectives (Ferreira et al., 2017). Many experts believe that an organization's success and growth rely on employees' willingness to exceed their duties and engage in additional activities (Harari et al., 2016). Factors like ethical climate, trustworthiness, leaders' respect, and care for employees' emotions have a significant impact on employee behavior and perception of the organization (Zamanzadeh et al., 2019). Leaders play a vital role in making decisions that benefit both the organization and individuals, ensuring that their choices positively affect both parties (Jami et al., 2023).

Ethical leadership is defined as the proper steps leaders take to create an environment and culture that are marked by morals and a service-oriented culture. Having qualities like honesty, trust, and fairness prioritizes the acts (Walumbwa et al., 2011). It is the display of normatively acceptable behaviors by one's own actions and social contacts, as well as the transfer of proper behaviors to followers via reward, two-way communication, and sensible decision-making (Brown et al., 2005). Positive ethical behavior at work fosters an environment that is fair, honest, and charismatic; this behavior in turn affects embeddedness and work engagement (Enwereuzor et al., 2020). In healthcare settings, ethical leadership has been found to influence employee job embedding and engagement. Studies such as Ferreira et al. (2017) have found that ethical leadership influences job embeddedness and engagement among healthcare workers, when the employees perceive the leaders as fair in the distribution of rewards and treatment of their efforts, trust in the leaders will increase



that would lead to a climate in which employees are engaged in their work, the embeddedness and engagement help to reduce employee turnover.

Studies have revealed that ethical leadership has positive outcomes in organizations; for example, Brown et al. (2005), found that moral leaders foster social exchange ties with their followers. Leaders are influenced by the relationship to treat subordinates with respect and decency, which in turn affects employees' moral behavior and fosters moral trust. According to Jami et al. (2023), this in turn increases workers' commitment and level of engagement at work. Performance is likely to improve when employees participate in return. According to Naburi et al. (2017), research indicates that moral leadership improves employee performance by raising motivation, engagement, and commitment. Ethical leadership fosters a welcoming atmosphere for motivated staff members. Ethical leadership has been linked to favorable outcomes for nurses and healthcare organizations. Nurses who work for ethical leaders are committed, empowered, and do their best for their healthcare organizations (Fan et al., 2024). They are more likely to have a sense of trust and well-being (Gentry & Fleshman, 2020). Studies have found that ethical leadership influences nurses work engagement and embeddedness. For instance, a study by (Song et al., 2024) in China found that ethical leadership creates a positive and psychologically safe work environment for health care staff which, in turns, enhances nurses commitment and attachment to their jobs.

Recent research has highlighted numerous critical concerns, including the critical roles of job embeddedness in influencing employees' performance (Ferreira et al., 2017). Job embeddedness has been investigated as a preventive measure against turnover intentions through factors such as links, emphasizing positive working relationships and connections with individuals, teams, and organizations. The study by Hellin et al. (2022) found a significant positive effect of employee engagement on job performance. Employee engagement refers to the level of enthusiasm, dedication, and emotional commitment an employee feels toward their job and organization (Ferreira et al., 2017).

Worldwide, a staggering 87% of workers are disengaged, leading to significant losses in productivity annually (Eldor et al., 2020; Bakker & Albrecht, 2018). In the US alone, disengagement results in approximately \$300 billion in losses each year. Disengaged employees often lack enthusiasm and drive for their jobs. The relationship between workers and their leaders plays a vital role in either fostering engagement or causing disengagement. Ethical leadership behaviors have a positive impact on employee engagement, with integrity and fairness being key factors (Guo et al., 2023). Research indicates that nurses who perceive their leaders as ethical tend to exhibit higher levels of engagement, including enthusiasm, dedication, and absorption in their work (El-Sayed et al., 2023).

In Tanzania, there is inadequate researches on how ethical leadership influences nurses' job embeddedness and engagement. Nurses play a crucial role in providing ongoing care to the community, tending to the sick, injured, disabled, and terminally ill. As influencers in executing their duties successfully, nurses are essential in promoting and ensuring the health of individuals and the community as a whole (Kim & Park, 2023). Nursing is a challenging and complex career that demands a strong desire to promote population health and well-being as well as a profound dedication to learning. Additionally, it offers the opportunity to work in a field that is dynamic and always changing.

Tanzania is one of many countries facing challenges within the health sector due to constrained resources. Nurses in particular face numerous challenges, including long working hours, limited resources, high patient-to-nurse ratios, and harassment. Examining ethical leadership on job embeddedness and engagement is important to improve nurses' engagement and embeddedness, hence improved nurses' performance and health service provision. The purpose of this study was to examine the influence of ethical leadership on job embeddedness and engagement among nurses in Musoma municipality, Mara Region, Tanzania.

1.1 Statement of the Problem

The significance of job embeddedness and engagement among nurses in Tanzania cannot be overstated (Isangula et al., 2022). Organizational embeddedness influences job-related attitudes such as efficiency, tardiness, and engagement while also improving worker retention (Hellín Gil et al., 2022). While highly engaged employees are more likely to invest additional effort in their job and are better prepared to navigate the dynamics of change

Understanding the impact of ethical leadership on these crucial factors holds immense implications for the healthcare sector in Tanzania (Dehghani-Tafti et al., 2022). Job embeddedness is a concept that measures how well employees fit in and connect with an organization. It is a useful personal resource for workers as fit and linkages are tools that help them accomplish their duties and objectives and allow them to acquire additional resources. Examining the influence of ethical leadership on job embeddedness and engagement was significant in this study as ethical leadership shapes employee attitudes and behavior leading to embeddedness and engagement of nurses. This can be achieved by providing a conducive work environment, making principled and fair choices, and involving employees in decision-making (Zhang et al., 2019). When employees perceive a trusting bond and a strong relationship with their leaders, they tend to work more effectively and view their job as a valuable investment (Song et al., 2024; Ramaite et al., 2022).

Although ethical leadership has been extensively studied in various contexts, there is limited research on its specific influence within the nursing profession in Tanzania (Masibo et al., 2024). Despite the healthcare sector's adherence to ethical guidelines, no studies have been conducted to demonstrate the importance of ethical leadership on job embeddedness and engagement among nurses in Tanzania. This could result in a rise in turnover, discontent, and lack of involvement of nurses in their duties, leading to inadequate healthcare services in Tanzania (Afsar et al., 2018). Therefore, it is essential to examine how ethical leadership, job embeddedness, and engagement are interconnected among nurses in Tanzania. By delving into this connection, healthcare leaders can better understand how to encourage ethical leadership behaviors and improve job embedding and engagement among nurses. This will enable the government to gather valuable insights for improving policies, training programs, and leadership development efforts to enhance the working conditions and overall welfare of nurses in Tanzania. As such, this research seeks to investigate the relationship between ethical leadership, job embeddedness, and engagement among nurses in Tanzania.

1.2 Research Objectives

- i. To examine the influence of ethical leader's vision on job embeddedness and engagement among nurses in Musoma municipal council.
- ii. To examine the influence of ethical leader's values on job embeddedness and engagement among nurses in Musoma municipal council.
- iii. To examine the influence of ethical leader's virtue on job embeddedness and engagement among nurses in Musoma municipal council.
- iv. To examine the influence of ethical leader's voice on job embeddedness and engagement among nurses in Musoma municipal council.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 4-V Model of Ethical Leadership

The 4-V model highlights the significance of leaders engaging in a personal process of integrity and committing themselves to the good of the group. The first stage involves individuals examining their core values, creating a vision for change, and identifying effective ways to communicate this vision. The second stage focuses on taking actions that have a positive effect on the community. The goal is to establish a society that is progressive and fair, enabling every individual to achieve their highest potential. The 4-V model is centered on four key components: values, vision, voice, and virtue, all of which are essential for ethical leadership. Values serve as the foundation for ethical leadership, while vision is about setting activities based on what should be. Voice refers to the ability to communicate the vision in a way that inspires others, and virtue is shown through morally correct behavior and decisions (Steenkamp, 2014). A study by Siva Vikaraman et al. (2021) on ethical leadership among school principals highlighted the importance of values, vision, virtue, and voice in creating a positive work environment, promoting innovation, and enhancing organizational performance and well-being.

The 4V model values, vision, voice, and virtue coincides with this research by offering a clear structure to understand how ethical leadership influences job embeddedness and engagement. Leaders who are guided by strong values and a clear vision provide nurses with a sense of purpose and direction. When leaders empower nurses by allowing them to express their opinions and consistently exhibit virtue, they foster trust, respect, and a supportive workplace. These actions strengthen nurses' emotional connection to the organization (embeddedness) and raise their motivation, commitment, and active involvement in their roles (engagement). Thus, the 4V model effectively explains the behavioral aspects of how ethical leadership positively affects organizational outcomes.

2.2 Empirical Review

2.2.1 Leader's Vision and Job Engagement and Embeddedness

The "leader's vision" is the state of having a clear, positive purpose for the group or organization that is consistent with moral principles and goals (Berson et al., 2001). The leader's decisions and actions are guided by this vision, which makes sure they are ethically sound and strategically centered on long-term goals. The idea is that a leader who has a clear and good purpose can inspire nurses to be committed and engaged (Kohnen et al., 2024). On the other hand, employees may become disengaged and unmotivated if there is no clear and positive purpose (Armstrong et al., 2021). A compelling and inspiring vision combined with ethical leadership has the power to inspire and encourage nurses.

This shared sense of purpose enhances their involvement and boosts their engagement in their work (George & Massey, 2020). A study conducted by Sulosaari et al. (2023) underscored the significance of visionary leaders by highlighting the importance of ethical transformation in vision, which enables effective decision-making for the benefit

of all individuals. Additionally, a study by Bish et al. (2015) revealed that employees who align themselves with their leaders' vision tend to experience higher job satisfaction. This is because, by comprehending their leader's vision, they gain a clear understanding of the organization's goals and are motivated to translate that vision into reality. Therefore, the study aligns with the model's premise that leaders with a clear and inspiring vision can foster engagement and commitment among nurses. Hence, based on these arguments, it is hypothesized that; Ha-1: There is a positive influence of ethical leader's vision on job embeddedness and engagement among nurses.

2.2.2 Leader's Value and Job Engagement and Embeddedness

Leader's value refers to the situation of holding and promoting ethical values and principles like honesty, integrity, fairness, respect, and responsibility (Shatalebi & Yarmohammadian, 2011). According to the hypothesis, if an organisation lacks these values, it may result in low member engagement and relationships, but if it does, it will increase employee engagement and embeddedness (Flores et al., 2023). This is due to the fact that moral leaders who uphold and exhibit fundamental principles like honesty, empathy, and decency foster a supportive workplace for nurses. Within the organisation, trust and respect are fostered when leaders regularly operate in accordance with these ideals. Nurses are more likely to align themselves with an ethical leader who upholds values that are consistent with their professional and personal beliefs, which leads to increased embeddedness and engagement. The study by Aggarwal et al. (2020) revealed that an individual who is morally attuned is able to make sound decisions in challenging circumstances by prioritizing ethics and values. A similar study by Malik et al. (2023) found that value is a significant contrast because a leader who is value-based utilizes their personal values, beliefs, or principles in developing strategies, navigating situations, and reaching decisions so as to create welfare and benefit for all individuals involved. Therefore, it is assumed that health care leaders who promote ethical values like integrity, fairness, respect, and compassion tend to create embeddedness and engagement among nurses. Hence, based on these arguments, it is hypothesized that; Ha-2: There is a positive influence of ethical leader's values on job embeddedness and engagement among nurses.

2.2.3 Leader's Virtue and Job Engagement and Embeddedness

Leader's virtue refers to the leadership approach that focuses on the moral character and virtues of a leader (Brown et al., 2005). The theories suggest that a good leader possesses and demonstrates qualities such as honesty, integrity, justice, compassion, and fairness, which in turn encourages subordinates to become more involved and committed. When leaders exhibit virtuous qualities like compassion, empathy, fairness, integrity, and honesty, they inspire their followers to internalize these values and apply them in their own work. This alignment of values between leaders and followers creates a sense of shared purpose and belonging, ultimately enhancing the level of engagement among nurses within the organization (Gentry & Fleshman, 2020). Additionally, virtuous leaders prioritize the well-being and professional growth of their team members by offering development opportunities and recognition (Sulosaari et al., 2023). These supportive actions contribute to nurse engagement by empowering them and providing a sense of fulfillment in their roles. A recent study conducted by Hendriks et al. (2020) on virtuous leadership revealed that it has a positive impact on work engagement and job satisfaction by promoting justice, courage, trust, and compassion. It assumed that ethical leaders who promote virtuous behaviors such as honesty, compassion, and trust will contribute to the embeddedness and engagement of nurses. Hence, based on these arguments, it is hypothesized that; Ha-3: There is a positive influence of ethical leader's virtue on job embeddedness and engagement among nurses.

2.2.4 Leader's Voice and Job Engagement and Embeddedness

Leader's voice can be defined as encouraging openness, honest communication, active listening, and valuing diverse perspectives (Chen & Hou, 2016). Ethical leaders who create a culture of psychological safety tend to make their workers feel comfortable sharing their thoughts, opinions, and concerns, which promotes engagement and embeddedness (Zheng et al., 2022). It is assumed that when nurses have a voice and are encouraged to actively participate in decision-making processes, they feel a sense of ownership and empowerment within an organization. Song et al. (2017) conducted a study on on-work and off-work relationships that tends to look at an engagement model of how and when leader member exchange and leader member exchange promote voice behavior. It revealed that the voice of an ethical leader can affect their followers positively and lead to voice behavior in the followers. It is assumed that leaders who are willing to listen and respond diversely to their followers can affect the embeddedness and engagement of employees. This is through encouraging openness, effective communication, and active listening. Hence, based on these arguments, it is hypothesized that; Ha-4: There is a positive influence of ethical leader's voice on job embeddedness and engagement among nurses.

2.3 Conceptual Framework

Figure 1 research framework shows the relationship between independent variables which are leader's vision, leader's values, leader's virtue, and leader's voice and the dependent variables which are job embeddedness and job



engagement. Ethical leadership play a significant role in predicting both job embeddedness and engagement in various organizations and contexts. However, for a leader to be ethical he/she must hold various ethical characteristics, these include vision, values, virtue, and voice. Vision entails having a distinct and positive purpose for the organization or group that aligns with ethical values and principles. Leader’s voice can be defined as encouraging openness, honest communication, active listening, and valuing diverse perspectives. Leader’s virtue refers to the leadership approach that focuses on the moral character and virtues of a leader. Good leader possesses and demonstrates qualities such as honesty, integrity, justice, compassion, and fairness. Leader’s value refers to the situation of holding and promoting ethical values and principles like honesty, integrity, fairness, respect, and responsibility. When a leader holds four ethical leadership characteristics is believed to influence job embeddedness where individuals are interrelated and interconnected in the workplace, and job engagement where employees are engaged in performing their activities. This study argues that when hospital leaders are ethical they will influence job embeddedness and engagement.

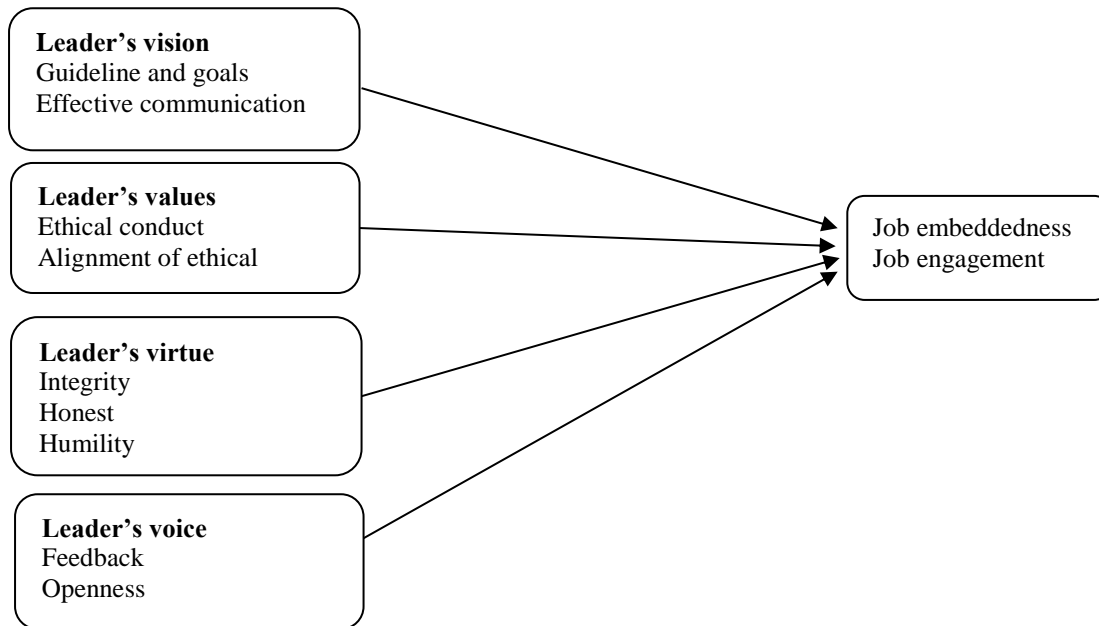


Figure 1
Conceptual Framework

III. METHODOLOGY

This research adopted quantitative research approach and a cross-sectional research design. This design was selected as it ensured data collection at a single point in time. The research was carried out in Tanzania, specifically in the Mara region, particularly in Musoma Municipality. Tanzania has identified issues of job embeddedness and engagement among nurses which is evidenced by nurses turnover and job dissatisfaction (Ayalew et al., 2021; Sirili & Simba, 2021; Naburi et al., 2017; Shemdoe et al., 2016). The aspect of ethical leadership and job embeddedness and engagement among nurses nursing profession remaining unexplored. The participants were chosen from Musoma Municipal Hospital (MMH), Butiama hospital, and Mwalimu Nyerere Memorial Regional Referral Hospital. The sample was drawn from 425 nurses (205 from MNRRH, 100 from Butiama Hospital, and 120 from MMH). The sample size for the study was calculated using the formula, which is shown below:

$$n = \frac{Z^2 pqN}{e^2(N-1) + Z^2 pq}$$

Whereas: n=Sample size, N=Population, p=Population reliability (or frequency estimated for a sample of size n), where p is 0.5, e=margin of error considered is 4% for this study, $Z_{\alpha/2}$ =normal reduced variable at 0.05 level of significance Z: is 1.96. Using the above formula, 250 nurses were obtained as the sample size. Also, simple random sampling was used to select nurses after obtaining the complete list of all nurses from two hospitals. The method of data gathering was a semi-structured questionnaire. A small number of questions were modified to account for the particular characteristics of the health sector, but the majority of the questionnaire was created using data from earlier studies that were validated and consulted by other academics. Next, to gather data, a semi-structured questionnaire was used (Ishtiaq, 2019). This study employed both dependent and independent variables to examine the influence of the ethical leadership 4V model (vision, value, virtue, and voice) on nurses' embeddedness and engagement in Tanzania. Respondents



indicated their agreement or disagreement using a 5-point Likert scale, where 5 represented "strongly agree" (SA), 4 represented "agree" (A), 3 represented "neutral" (N), 2 represented "disagree" (D), and 1 represented "strongly disagree" (SD). The use of a 5-point Likert scale helped to capture the true emotions of respondents and provided clear and relevant answers while sampling from a large audience. Descriptive statistics like mean, standard deviation, percentages and frequencies were used to show the extent to which leader’s vision, value, virtue and voice were perceived. Inferential statistics was used in analyzing the relationship between ethical leader’s vision, value, virtue and voice on job embeddedness and engagement among nurses, through inferential statistics researcher determined the multivariate analysis. Multivariate was useful the researcher had two dependent variables (Job engagement and embeddedness) and aimed to determine patterns, correlations, and impacts on specific outcomes. Before analysis, the data were checked for heteroscedasticity, linearity, reliability, and correlations.

IV. FINDINGS & DISCUSSION

4.1 Respondents Profile

Data was gathered to examine the impact of ethical leadership on job embeddedness and engagement among nurses in Tanzania. Nurses of varying ages, genders, educational backgrounds, current positions, and years of experience were surveyed. Table 1 provides an overview of the background characteristics of nurses. Males comprised 43.6% of nurses, compared to females' 56.4%. Age-wise, the group of nurses with the largest percentage belonged to the 31–40 age range (40.4%), followed by the 20–30 age range (39.6%). Just a small percentage of nurses held a degree (7.6%). Regarding work experience, the majority of nurses (82.4%) had one year and above of working experience.

Table 1
Background Profile of Nurses

Demographic	Response	Frequency	Percent	Mean	Std. Dev.
Age	20-30	99	39.6	1.88	0.894
	31-40	101	40.4		
	41-50	32	12.8		
	51-60	18	7.2		
Sex	Male	109	43.6	1.564	0.497
	Female	141	56.4		
Education Status	Certificate	106	42.4	1.652	0.61678
	Diploma	125	50		
	Degree	19	7.6		
Current Position	Nurse	105	42	1.71	0.682
	Assistant nurse	113	45.2		
	Nursing officer	32	12.8		
Experience	Less than 1 year	44	17.6	1.82	0.382
	1 year and above	206	82.4		

4.2 Descriptive Statistics

Table 2 presents the means and standard deviations of each variable. Leader’s virtue recorded the highest mean (M = 4.12), suggesting strong perceptions of ethical virtue among leaders. In contrast, leader’s value had the lowest mean (M = 3.34), indicating relatively lower agreement in that dimension. Leader’s voice had the largest standard deviation (SD = 1.864), implying greater variability in perceptions.

Table 2
Mean and Standard Deviation

Variable	Mean	Standard Deviation
Leaders vision	3.88	1.132
Leaders virtue	4.12	1.214
Leaders value	3.34	1.494
Leaders voice	3.56	1.864
Job engagement	4.11	1.748
Job embeddedness	3.91	1.749



4.3 Data Exploration and Reliability Test

4.3.1 Reliability Test Results

To assess internal consistency, reliability tests were conducted using Cronbach's Alpha. As shown in Table 3, all constructs met the acceptable reliability threshold of 0.6 or above (Siswaningsih et al., 2017). Leader's virtue ($\alpha = 0.89$), job engagement ($\alpha = 0.88$), and job embeddedness ($\alpha = 0.86$) demonstrated high reliability, while leaders' vision ($\alpha = 0.76$), voice ($\alpha = 0.72$), and values ($\alpha = 0.69$) also indicated acceptable internal consistency.

Table 3

Reliability Tests

Variables	Number of Items	Cronbach's Alpha
Leaders vision	7	0.76
Leaders virtue	9	0.89
Leaders value	9	0.69
Leaders voice	8	0.72
Job engagement	8	0.88
Job embeddedness	8	0.86

4.3.2 Correlation Analysis

Table 4 shows the Pearson correlation coefficients between the independent variables (leaders' vision, values, virtue, and voice) and the dependent variables (job embeddedness and engagement). All variables showed strong positive correlations ($r \geq 0.635$, $p < .01$), with the strongest relationship observed between leader virtue and leader voice ($r = .929^{**}$). These findings confirm significant interrelationships among the constructs, supporting further regression analysis (Akoglu, 2018).

Table 4

Correlation Table

	Ethical Leader Vision	Ethical Leader Values	Ethical Leader Virtue	Ethical Leader Voice	Job Embeddedness	Job Engagement
Ethical Leader Vision	1					
Ethical Leader Values	.912**	1				
Ethical Leader Virtue	.813**	.919**	1			
Ethical Leader Voice	.777**	.829**	.929**	1		
Job Embeddedness	.857**	.851**	.879**	.813**	1	
Job Engagement	.637**	.651**	.676**	.635**	.804**	1

4.4 Multivariate Regression Results

A multivariate analysis was conducted to determine the true significance of the collected data and draw conclusions regarding the relationship between the variables in this study. The statistical significance between the independent variables (leader's vision, leader's values, leader's virtue, and leader's voice) and the dependent variables (job embeddedness, job engagement) was confirmed through regression analysis. The model $Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$, was used to calculate the relationship between dependent variables and independent variables. Where α is the estimated parameter for the dependent variable, β_n is the estimated parameter that measures the effect of X_n , and X_n represents the independent variables. Thus, Y_i (job embeddedness and job engagement) = $\alpha + \beta_1$ (leader's vision) + β_2 (leader's value) + β_3 (leader's virtue) + β_4 (leader's voice).

The two-way multivariate analysis of variance (two-way MANOVA) is utilized to determine if there is any difference between independent variables and dependent variables. Table 5 the multivariate test table displays the actual results of the two-way MANOVA. The table illustrates the impact of a leader's vision, leader's values, leader's virtue, and leader's voice. The statistical tests used to evaluate the significance of the independent variables include Pillai's Trace test, Wilks' Lambda test, Hotelling's Trace test, and Roy's Largest Root test, all conducted with a 95% confidence interval and p-value < 0.05 . Among these tests, Wilks' Lambda test is favored to assess the statistical significance of the various effects of the independent variables. Notably, as shown in Table 5, there was a statistically significant interaction between the leader's vision on job embeddedness and engagement ($F = 54.367$, $p = 0.000$; Wilks' Lambda = 0.690), the



leader's values on embeddedness and engagement ($F = 65.655, p = 0.000$; Wilks' Lambda = 0.513), the leader's virtue on embeddedness and engagement ($F = 50.237, p = 0.000$; Wilks' Lambda = 0.630), and the leader's voice on embeddedness and engagement ($F = 52.384, p = 0.005$; Wilks' Lambda = 0.658).

Table 5

Multivariate Tests

		Multivariate Tests ^a				
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.340	62.871 ^b	2.000	244.000	.000
	Wilks' Lambda	.660	62.871 ^b	2.000	244.000	.000
	Hotelling's Trace	.515	62.871 ^b	2.000	244.000	.000
	Roy's Largest Root	.515	62.871 ^b	2.000	244.000	.000
Leaders Vision	Pillai's Trace	.308	54.367 ^b	2.000	244.000	.000
	Wilks' Lambda	.692	54.367 ^b	2.000	244.000	.000
	Hotelling's Trace	.446	54.367 ^b	2.000	244.000	.000
	Roy's Largest Root	.446	54.367 ^b	2.000	244.000	.000
Leaders Values	Pillai's Trace	.087	11.655 ^b	2.000	244.000	.000
	Wilks' Lambda	.513	65.655 ^b	2.000	244.000	.000
	Hotelling's Trace	.096	11.655 ^b	2.000	244.000	.000
	Roy's Largest Root	.096	11.655 ^b	2.000	244.000	.000
Leaders Virtue	Pillai's Trace	.270	45.237 ^b	2.000	244.000	.000
	Wilks' Lambda	.630	50.237 ^b	2.000	244.000	.000
	Hotelling's Trace	.371	45.237 ^b	2.000	244.000	.000
	Roy's Largest Root	.371	45.237 ^b	2.000	244.000	.000
Leaders Voice	Pillai's Trace	.042	5.384 ^b	2.000	244.000	.005
	Wilks' Lambda	.658	52.384 ^b	2.000	244.000	.005
	Hotelling's Trace	.044	5.384 ^b	2.000	244.000	.005
	Roy's Largest Root	.044	5.384 ^b	2.000	244.000	.005

a. Design: Intercept + Leaders Vision + Leaders Values + Leaders Virtue + Leaders Voice

b. Exact statistic

4.4.1 Test between- subject effects

A test between subject effects was employed to determine if the two independent and two dependent variables are statistically significant. The findings were presented in Table 6.

Table 6

Test of between Subject Effects

Source	Dependent Variable	Type I Sum of Squares	df	F	Mean Square	Sig.
Corrected Model	Job Embeddedness	51.651	4	334.421	12.913	.000
	Job Engagement	27.526	4	56.773	6.882	.000
Intercept	Job Embeddedness	4382.975	1	113511.397	4382.975	.000
	Job Engagement	4789.046	1	39509.468	879.046	.000
Leader's vision	Job Embeddedness	44.840	1	1161.275	44.840	.000
	job Engagement	232.215	1	191.523	23.215	.000
Leader's value	Job Embeddedness	1.763	1	45.653	1.763	.000
	Job Embeddedness	1.668	1	13.759	1.668	.000
Leader's visual	Job Embeddedness	4.755	1	123.149	4.755	.000
	Job Engagement	2.639	1	21.768	2.639	.000
Leader's voice	Job Embeddedness	.294	1	7.605	.294	.006
	Job Engagement	.005	1	.041	.005	.840
Error	Job Embeddedness	9.460	245		.039	
	Job Engagement	29.697	245		.121	
Total	Job Embeddedness	4444.086	250			
	Job Engagement	4846.269	250			
Corrected total	Job Embeddedness	61.112	249			
	Job Engagement	57.223	249			

a. R Squared = .845 (Adjusted R Squared = .843)

b. R Squared = .481 (Adjusted R Squared = .473)



As shown in Table 6, the first hypothesis—that an ethical leader's vision has a positive influence on nurses' job embeddedness and engagement—is accepted ($p = 0.000$). The second hypothesis—that an ethical leader's values have a positive influence on nurses' job embeddedness and engagement—is also accepted ($p = 0.000$). The third hypothesis—that an ethical leader's virtue has a positive influence on nurses' job embeddedness and engagement—is similarly accepted ($p = 0.000$). However, the fourth hypothesis, which posited that an ethical leader's voice has a positive influence on job embeddedness, is accepted ($p = 0.006$), while its influence on job engagement among nurses is rejected ($p = 0.840$).

Table 6
Test of between Subject Effects

Source	Dependent Variable	Type I Sum of Squares	df	F	Mean Square	Sig.
Corrected Model	Job Embeddedness	51.651	4	334.421	12.913	.000
	Job Engagement	27.526	4	56.773	6.882	.000
Intercept	Job Embeddedness	4382.975	1	113511.397	4382.975	.000
	Job Engagement	4789.046	1	39509.468	879.046	.000
Leader's vision	Job Embeddedness	44.840	1	1161.275	44.840	.000
	job Engagement	232.215	1	191.523	23.215	.000
Leader's value	Job Embeddedness	1.763	1	45.653	1.763	.000
	Job Embeddedness	1.668	1	13.759	1.668	.000
Leader's visual	Job Embeddedness	4.755	1	123.149	4.755	.000
	Job Engagement	2.639	1	21.768	2.639	.000
Leader's voice	Job Embeddedness	.294	1	7.605	.294	.006
	Job Engagement	.005	1	.041	.005	.840
Error	Job Embeddedness	9.460	245		.039	
	Job Engagement	29.697	245		.121	
Total	Job Embeddedness	4444.086	250			
	Job Engagement	4846.269	250			
Corrected total	Job Embeddedness	61.112	249			
	Job Engagement	57.223	249			

a. R Squared = .845 (Adjusted R Squared = .843)

b. R Squared = .481 (Adjusted R Squared = .473)

The findings consistently indicate that leaders who establish and communicate a clear, inspiring vision are able to motivate their teams to achieve shared organizational objectives. This is achieved by building a sense of connection and intrinsic motivation among team members. A recent study by Cai et al. (2023) found that millennial employees who perceived their managers as champions of a distinct and ambitious vision showed greater levels of energy, commitment, and concentration at work, which in turn resulted in better job performance. Another dataset, published by Gupta et al. (2020), shows that leaders who intentionally combine aspirational communication with the organization's core values and end goals help build stronger pathways for retaining talent in their positions, thus increasing job embeddedness. Additional support for this connection comes from Yang and Yang (2024), who found that managers who deliberately adopt visionary behaviors can enhance psychological and behavioral engagement among frontline workers. In their research, bedside nurses whose leaders consistently shared a compelling vision, broke it down into achievable short-term goals, and entrusted patient care teams with responsibility not only reported higher levels of satisfaction but also showed greater discretionary effort and were more willing to adapt to real-time service demands.

Leaders' values are essential in building a committed and engaged workforce. This is achieved when decisions are made with fairness, honesty, and transparency, which fosters a culture of trust within the organization. Research has shown that a leader's values have a significant effect on how embedded and engaged employees feel in their roles. This aligns with the findings of Atiku and Van Wyk (2024), who found that leaders who display traits such as passion, creativity, and teamwork positively influence employee job engagement. These leaders contribute to the development of a supportive work environment that encourages innovation, collaboration, and a stronger sense of purpose. Similarly, Arefin et al. (2019) discovered that leaders who embody qualities like honesty, transparency, and fairness have a positive impact on employee commitment and their sense of belonging. These leaders are vital in fostering a supportive work culture that builds loyalty and a sense of connection among team members. Moreover, Mazzetti and Schaufeli (2022) emphasize the importance of leaders prioritizing and effectively communicating their values. Leaders who continuously act with integrity, respect their team members, and show genuine care for their well-being create an environment that inspires employees to feel a strong connection to their jobs and the company. As a result, these employees tend to show



higher levels of dedication, loyalty, and long-term engagement. By placing a strong emphasis on ethical principles, leaders can foster a positive work environment that encourages innovation and improves engagement.

Leaders' virtue is essential for cultivating trust, respect, and ethical behavior in an organization. It sets the tone for the entire team, influencing morale, productivity, and overall success. A leader's virtue acts as a guiding force, encouraging others to maintain high moral standards in their actions. Ultimately, leaders who exhibit virtuous qualities create a positive work environment where individuals feel valued and motivated to give their best. Study results show the beneficial impact of a leader's virtues on job engagement and embeddedness. These findings are supported by Lee and Lee (2022), who found that leaders who demonstrate such virtues establish a culture of trust and mutual respect, resulting in higher levels of job engagement among employees. These leaders serve as role models, encouraging team members to be more committed and enthusiastic about their work. Similarly, Al-Ghazali (2020) found that leaders who display these virtues and create a supportive, inclusive workplace lead to higher levels of job embeddedness among employees. These leaders inspire and motivate employees to feel connected and loyal to their organizations. A leader who consistently demonstrates virtuous behavior towards their employees is more likely to improve their engagement and embeddedness.

A leader's voice is an important element of effective leadership. When leaders communicate authentically, consistently, and with empathy, it inspires and motivates team members, fostering a culture of openness and trust. Findings highlight the negative impact of a leader's voice on job engagement. Nevertheless, the study by Gustiawan et al. (2023) found that leaders who use their voice to create a clear vision, promote collaboration, and provide recognition and feedback can enhance job engagement among employees. These leaders build open communication channels and empower their teams, which encourages a sense of involvement and commitment. Another study by Fan et al. (2024) found that leaders who use their voices to actively listen to employees, offer support, and encourage participation help increase job engagement. The study emphasized that leaders who value the opinions and ideas of their teams and foster a culture of open communication create an environment of trust and empowerment, resulting in higher job satisfaction and engagement. Employees feel appreciated and heard, which boosts their motivation and dedication. The ethical leader's vision, values, and virtues have a significant impact on the job embeddedness and engagement of healthcare workers. Leaders in various healthcare organizations should recognize this influence in order to strengthen employee connectivity and commitment, ultimately helping the organization achieve its goals.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Ethical leadership plays a crucial role in promoting job embedding and engagement among nurses. To address this issue so as to ensure connectivity and commitment among nurses, it is essential to develop target policies and programs aimed at fostering a culture of professional growth, transparency, and accountability within the health care sector. By prioritizing this effort, the overall well-being of its nursing workforce and ultimately enhance the quality of care provided to patients. By emphasizing the importance of ethical leaders' vision, values, virtue, and voice in shaping job embeddedness and engagement among nurses, this research can guide organizations in fostering a culture of integrity, trust, and respect in the workplace.

5.2 Recommendations

Implementing interventions that cultivate these ethical leadership qualities may result in increased job satisfaction, lower turnover rates, and higher levels of employee engagement among nursing staff. Additionally, by highlighting the role of ethical leadership in influencing job-related attitudes and behaviors, this study contributes to the advancement of knowledge on effective leadership strategies tailored to the specific needs of healthcare professionals. Lastly, the study's sample was restricted to the medical field. These conclusions cannot therefore be applied to other industries. Further studies on work embeddedness and engagement across various industries can validate these results

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