Traversing the Pathway from Authentic Leadership to Extra-Role Performance: Decoding the Mediating Effects of Knowledge-Sharing Behavior and Employee Creativity

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**ABSTRACT**

This research’s primary aim was to analyze the significant influence of components of authentic leadership on knowledge-sharing behavior, employee creativity, and extra-role performance in Saudi Arabia’s healthcare sector. This research utilized the quantitative primary research design approach. For this approach, data were collected from the healthcare sector organizations within Saudi Arabia. The study included 362 healthcare members and the data were collected with the help of a questionnaire using self-administered and online methods. Data collection was conducted in three phases. SmartPLS4 and SPSS were used for data analysis. Statistical analysis, including descriptive statistics, Pearson correlation, composite assessment analysis, and structural equation modeling, was conducted for data reliability, validity, and hypothesis testing. The study results showed that authentic leadership is crucial in promoting knowledge sharing and employee creativity, enhancing extra-role performance. Moreover, knowledge-sharing behavior and employee creativity mediate the relationship between authentic leadership and employee extra-role performance. Overall, using authentic leadership to strengthen knowledge-sharing behavior, employee creativity, and extra-role performance has a powerful effect on healthcare organizations, improving patient care and organizational efficiency. The study also provides the implications and importance of authentic leadership in the Saudi healthcare sector, considering the changes the Saudi work environment faces because of the implementation of Vision 2030.
Leadership dynamics and employee performance have been dominated by academic and practical discussions in the rapidly changing healthcare sector of Saudi Arabia. These healthcare organizations are not only dealing with distinct combinations of operational, cultural, and inventive obstacles (Al Khashan et al., 2021); but also, managing worldwide technological changes and requirements of pandemic readiness (Capili et al., 2022).

Leadership involves multiple dimensions of a leader’s behavior. These leadership behaviors significantly influence employee outcomes (Liao et al., 2019). This study explores the impact of Authentic Leadership behavior (AL) on employee outcomes (i.e., Knowledge-Sharing Behavior (KSB), Employee Creativity (EC), and Extra-Role Performance (ERP), in Saudi Arabian healthcare employees. As per recent studies regarding leader’s unethical behavior, leaders should have authentic, fair, and transparent professional working relationships rather than engaging in manipulation or hidden agendas (Gardner et al., 2011; Kim et al., 2023). Authentic leaders have a firm self-awareness, engage in fair, unbiased, and objective knowledge sharing, develop open and honest working relationships, and maintain their values and beliefs (Jiang & Shen, 2023; Kim et al., 2023). Further investigation is required to ascertain the impact of AI on Saudi Arabia's cultural and professional healthcare landscape.

Saudi Arabia launched Vision 2030 in April 2016 as a major reform. Prince Mohammed bin Salman directed its creation. The strategic framework aims to reduce Saudi Arabia's oil dependence and expand public services. Tourism, cultural heritage, employment, women's empowerment, sustainable methods, renewable energy, technology, and digitalization are included (Al Naimi, 2022). Using technology and digitizing systems is crucial to meeting Vision 2030 goals. Vision 2030 presents many opportunities and challenges for Saudi leadership. In a fast-changing economy, public and private leaders must encourage innovation and train their staff (Al-Hanawi et al., 2018). Cultural norms must be changed to align with modern, environmentally friendly, and globally competitive business strategies. Vision 2030 is a bold and ambitious plan to transform Saudi Arabia's economy and society and achieve sustainable prosperity.

Healthcare is crucial to Vision 2030. It creates jobs for Saudis and expats and boosts the economy. Global healthcare technology is advancing rapidly. Social media data, e-health, and the internet can transform Saudi healthcare to meet Vision 2030 goals (Al-Surimi et al., 2017). Healthcare leaders must be trustworthy, authentic, fair, and transparent to implement these technologies and reduce employee resistance.

Extra-role performance includes voluntary employee activities that improve the organizational environment and effectiveness (Widyastuti et al., 2020). It includes helping coworkers, taking the initiative, promoting a positive work environment, volunteering for extra tasks, mentoring and training newer employees, flexibility, and punctuality (Spanouli & Hofmans, 2016). Healthcare teams are under pressure, so adding tasks can lower morale (Hassanie et al., 2021). Healthcare leaders can create a productive work environment that promotes healthcare collaboration by overcoming job description limitations. Healthcare organizations aim to provide excellent patient care. Overachievers often take proactive steps to improve patient care (Rasheed et al., 2023). These workers often help coworkers, volunteer for extra work, or plan patient care. Extra-role performance improves patient satisfaction, safety, and healthcare quality (Hassanie et al., 2021; Rasheed, 2023).
Healthcare is a priority in Saudi Vision 2030 (Hejazi et al., 2022). Saudi healthcare has changed rapidly due to technological advancement, economic and infrastructural revolution (Vision 2030), and patient needs. Healthcare organizations need employee involvement and trusted leaders to implement these changes. Despite not being stated in their job descriptions, healthcare workers' extra-role behaviors can boost efficiency and save money. Proactively seeking solutions, taking on more responsibilities, and helping colleagues can reduce overtime and staffing issues in resource-intensive healthcare.

The impact of AL on healthcare organizational culture is significant. Authentic leaders foster transparency, fairness, moral decision-making, and collective values in their organizations. AL cultures improve organizational performance, promote innovation, and create a system that efficiently manages the challenges of the healthcare system's drastic transformation (Walumbwa et al., 2008). Due to technological advances, patient demands, and policy changes, the healthcare system worldwide is changing rapidly, especially in Middle Eastern countries like Saudi Arabia, UAE, Oman, and Qatar. Authentic leaders can help organizations through uncertainty by staying true to their values and learning new things (Zeb et al., 2020). AL promotes knowledge sharing by creating a supportive environment, according to Asghar et al. (2023). In the healthcare industry, ongoing education and adaptation to new therapies and technologies are essential for quality care.

AL-ERP analysis is crucial, especially in Saudi Arabia's healthcare sector. Optimizing workforce performance is essential for quality care and institutional resilience as Vision 2030 transforms the Saudi healthcare system (Hejazi et al., 2022). Vision 2030 requires major cultural and organizational changes in Saudi healthcare. AL steers changes well. Grošelj et al. (2021) report that AL effectively manages change by emphasizing fundamental principles in a setting that respects conventional standards. By understanding how this AL style affects ERP, which is crucial in situations requiring adaptability and initiative, institutions can develop leadership practices tailored to their unique challenges. By examining KSB and employee creativity, the study provides a framework for organizations to promote collective learning and innovation. Such insights are crucial in a field where knowledge transfer and creative problem-solving affect patient outcomes and organizational efficiency (Batool et al., 2022).

**Gap Analysis**

As most Middle Eastern countries (Saudi Arabia, Qatar, Oman, UAE) are transforming, studies on AL, KSB, EC, and ERP interactions are scarce. Thus, this study could inform leadership on training, organizational policy, and strategy formulation, shaping the region's healthcare leadership narrative. Most of the recent studies conducted in Middle Eastern countries such as Alilyyani et al. (2022) and Alshaar (2023) focus on the influence of AL on employee or organizational outcomes at only the nursing level of the healthcare sector, while the current study does not only involve all levels of healthcare sector but also analyze the individual relationship of AL dimensions with KSB, EC, and ERP. The interaction between leadership styles (AL) and Saudi Arabia’s cultural traits like collectivism and uncertainty avoidance could greatly impact the study’s results. The study also thoroughly investigates the mediators (i.e., KSB and EC) in the relationship between AL and ERP. These mediators could significantly impact the process of enhancing ERP in healthcare organizations.
**Literature Review**

**Theoretical Framework**

AL is a concept that is receiving much attention. It refers to leaders who possess self-awareness, moral grounding, transparency, and fairness in their interactions with their subordinates (Kelly, 2023; Walumbwa et al., 2008; Zheng et al., 2023). These leaders cultivate trust and respect, essential for promoting behaviors beyond formal job duties, referred to as ERP (Ismail et al., 2023; Kumari et al., 2022; Malik et al., 2021).

Social Exchange Theory (SET), derived from Blau’s (1964) research, posits that social behavior results from a reciprocal exchange process. The theory postulates that these transactions strive to optimize advantages and minimize drawbacks. Within an organizational setting, when employees perceive AL, they experience a sense of being esteemed and honored, which fosters a feeling of duty to respond with positive behaviors in the workplace (Redín et al., 2023; Semedo et al., 2019).

KSB is an essential component in the process of organizational learning and innovation (Olan et al., 2022). How leaders lead substantially influences the behaviors related to sharing knowledge. AL fosters an environment that promotes the unrestricted sharing of ideas and information due to their transparent and supportive demeanor (Tran, 2019). The presence of an open and trusting atmosphere, as defined by SET, fosters a mutually beneficial relationship where employees are more likely to KSB, which goes beyond their formal job responsibilities and contributes to the organization's success (Afshari et al., 2023; Fong et al., 2018).

AL can impact ERP by fostering creativity in the workplace (Hanaysha, 2022). ALs who promote inclusivity and value diverse viewpoints inherently cultivate a conducive atmosphere for creativity thriving (Yıkılmaz & Sürücü, 2023). According to SET, when employees are aware of the genuine support provided by their leaders, in exchange they experience a greater sense of ease in expressing innovative ideas and engaging in risky endeavors (Gelaidan et al., 2023; Yıkılmaz & Sürücü, 2023). This creative expression is a type of performance that goes beyond normal job duties and can greatly enhance the achievement of organizational goals (Zeb et al., 2020; Ribeiro et al., 2022).

**Authentic Leadership (AL)**

AL approach focuses on the importance of self-aware, sincerity, and consistency in the behaviors, beliefs, and values of a leader (Kelly, 2023; Ogunyemi & Ogunyemi, 2020). This leadership style places great emphasis on cultivating honest and transparent relationships with followers, which are built upon an ethical foundation. ALs are characterized by their commitment to SA, an IMP, BP, and RT (Zheng et al., 2023). SA of a leader includes how well they know their strengths, weaknesses, and other traits. SA includes leaders' understanding of their potential impact from other perspectives. Numerous authors argue that AL requires SA (Chaudhary & Panda, 2018). RT is a leader's willingness to share information, thoughts, and feelings without deceiving others (Gill & Caza, 2018). ALs balance processing by carefully examining relevant information before making impartial decisions (Oh et al., 2018). An IMP evaluates a leader's morality (Walumbwa et al., 2008). Leaders having IMP follow the values, preferences, and needs of their team (Oh et al., 2018).
**Extra-Role Performance (ERP)**

ERP has been defined as an activity that primarily enhances the psychological, social, and organizational aspects while indirectly contributing to the primary work (Widyastuti et al., 2020). ERP encompasses activities that go beyond the prescribed duties outlined in formal job descriptions yet significantly contribute to the psychological and social fabric of the organization (Ain et al., 2022; Spanouli & Hofmans, 2016). ERP involves actions that are crucial to an organization's efficient operation but are not explicitly rewarded or requested (Podsakoff et al., 2009). According to Alnaimi and Rjoub (2021), the discretionary actions in question directly influence an organization's outcomes. Moreover, in crisis situations, they serve as important indicators of both individual and organizational effectiveness and service innovation.

Employees with AL experience feelings of appreciation, trust, and moral motivation (Hadian & Afshari, 2019; Malik et al., 2021). As a result of experiencing these emotions, employees exhibit a heightened motivation to engage in activities beyond their prescribed job responsibilities, enhancing their ERP and fostering the development of a robust and prosperous organization (Hejazi et al., 2022). Leroy et al. (2015) stated that followers are more inclined to exhibit organizational commitment and trust toward their leaders when they perceive themselves to be treated with authenticity. Trust plays a pivotal role in fostering a sense of security and motivation among workers, encouraging them to surpass their formal obligations, exhibit proactive behavior, and contribute to the organization's overall achievements (Kumari et al., 2022). This contributes to the team's welfare and the organization when they perceive a psychologically safe environment and a higher level of trust, irrespective of whether such behaviors are explicitly mandated by their job responsibilities (Ismail et al., 2023).

**H1:** Authentic leadership has a direct and significant impact on extra-role performance.

**Knowledge-Sharing Behavior (KSB)**

The concept of KSB implies to sharing of task-related information (Explicit) and expertise (Tacit) with coworkers. The aim of KSB is to facilitate coworkers in problem-solving or to implement organizational policies and procedures (Swanson et al., 2020; Tran, 2019). Some authors classified KSB as a form of extra-role behavior because of its voluntary nature (Akram et al., 2017; Bao et al., 2016). According to Tran (2019), multiple conditions have been suggested to facilitate knowledge sharing, which involves management support and organizational culture. The presence of KSB among employees can develop a social interaction culture, where employees share their knowledge (both explicit and tacit), experiences, and skills (Afsar et al., 2019).

ALs who know their strengths and weaknesses appreciate explicit and tacit knowledge shared with them and others. Knowing how their actions affect followers, these leaders publicly recognize knowledge contributors. Relational transparency lets ALs voice their opinions and feelings without manipulation (Gill & Caza, 2018). Leader information may be “justified true belief” or knowledge to recipients. Knowing this helps solve leader-member issues and achieve goals. Learning and net loss reduction are possible under ALs. Leaders who share knowledge inspire others (Tran, 2019). When their leader values their knowledge, knowledge contributors...
may feel valued by the organization. Employees receive honest feedback from balanced-processing leaders to improve their ideas. When ALs give feedback, followers can compare their knowledge to what they learn. Finally, a moral leader serves collective interests (Walumbwa et al., 2008). A leader who values knowledge sharing is likelier to promote it among colleagues (Edú-Valsania et al., 2016).

**H2:** Authentic leadership has a direct and significant impact on employee's knowledge sharing behavior.

**Employee Creativity (EC)**

Ribeiro et al. (2022) stated that creativity benefits employees and organizations by generating innovative and useful solutions to organizational challenges, resulting in tangible and advantageous outcomes for an organization. The process reduces numerous obstacles, including risks, conflicts, difficulties, failures, and ethical issues (Mubarak & Noor, 2018). EC can be an employee outcome and an employee process (Ribeiro et al., 2022). However, this study includes EC as an employee process of generating novel and valuable ideas, and focuses on employee outcomes (i.e., extra-role performance).

Leroy et al. (2015) and Imam et al. (2020) have shown AL's strong and positive influence on EC. ALs cultivate a trusting and psychologically safe environment by exhibiting SA, BP, IMP, and RT. This environment encourages employees to tap into their creative abilities and engage in innovative behaviors (Walumbwa et al., 2008). ALs foster a sense of psychological safety that empowers employees to share their ideas without apprehension of punishment or disapproval, thus promoting innovative thinking (Bao et al., 2016). Establishing a trusting environment and ethical climate by such leaders promotes and motivates employees to explore new and innovative ideas and approaches, resulting in a positive association between AL and EC (Zeb et al., 2020). According to Beghetto and Corazza (2019), AL not only demonstrates ethical and transparent behavior, but also supports employees’ self-concepts and values, and motivates employees to participate or be involved in creative activities (in-role and extra-role).

**H3:** Authentic leadership has a direct and significant impact on employee creativity.

In organizations that depend severely on knowledge and information, the pivotal role of KSB in enhancing EC is increasingly recognized (Afsar et al., 2019). KSB improves the understanding and perceptions of individual employees and work groups, resulting in enhanced cognitive abilities and collective ideas (Elrehail et al., 2018). By strengthening cognitive diversity in work groups, KSB can improve team creativity (Elrehail et al., 2018; Mubarak & Noor, 2018). Organizations that give high value to KSB in their environment and culture, their employees are more motivated to exhibit creativity in the organization. By motivating the employees to share tacit and explicit knowledge among employees, organizations develop cognitive diversity, a nurturing organizational environment, and a focus on learning, resulting in enhancing EC (Ribeiro et al., 2022).

**H4:** Knowledge-sharing behavior has a direct and significant impact on employee creativity.
Akram et al. (2017) stated that KSB results in the growth of cognitive capital and high ERP, which supports organizations in developing their knowledge competencies. The sharing of knowledge, expertise, and ideas among employees is essential for organizational performance (Afsar et al., 2019). Knowledge-sharing activities develop trust and openness among employees resulting in collaboration and teamwork, which improves ERP. KSB creates interdependent relationships between coworkers, fostering collaboration (Cross et al., 2016). Such environments encourage ERP because employees are more likely to help each other outside of work, which boosts teamwork (Swanson et al., 2020).

**H5:** Knowledge-sharing behavior has a direct and significant impact on extra-role performance.

The relationship between EC and ERP is delicate and beneficial (Ribeiro et al., 2022). Employees encouraged at their workplaces to be creative are more likely to perform more than their assigned tasks and would contribute to the organization's success (Mubarak & Noor, 2018). Creative employees often take initiative and show a great deal of autonomy. This creativity also helps them manage their tasks and workplace challenges (Fong et al., 2018). Creative employees actively seek diverse perspectives and understandings, creating a culture of knowledge-sharing and cooperation (Bednář et al., 2023). A culture of collaboration naturally encourages employees to help each other and share skills and knowledge outside of their formal duties (Le et al., 2020).

**H6:** Employee creativity has a direct and significant impact on extra-role performance.

Employees are more inclined to participate in KSB when they perceive a non-threatening and supportive atmosphere that values their contributions (Tran, 2019). AL encourages KSB among team members by fostering psychological safety (Edú-Valsania et al., 2016). KSB fosters an innovative and intellectually stimulating workplace (Ribeiro et al., 2022). When knowledge is disseminated openly, employees gain access to diverse information and insights, which can stimulate innovative problem-solving and creative thinking (Elrehail et al., 2018; Mrayyan et al., 2023). Creative employees, bolstered by a wealth of shared knowledge, tend to develop improved problem-solving skills, and demonstrate initiative (Cross et al., 2016). This initiative and ability to generate novel solutions frequently manifest in extra-role performances, in which employees voluntarily engage in behaviors outside of their formal responsibilities to promote organizational success (Fong et al., 2018). The theoretical framework is presented in Figure 1.

**H7:** The relationship between authentic leadership and extra-role performance is serially mediated by knowledge-sharing behavior and employee creativity.
Method

Sample
Public and private sector healthcare organizations in six major Saudi cities (i.e., Riyadh, Jeddah, Dammam, Madinah, Makkah, and Khobar) were selected based on population. The top five hospitals in each city were chosen based on the bed count. Participants in the study included Saudi and non-Saudi medical professionals and administrative staff members. From each hospital, by using the snowball sampling technique and with the help of friends family members, and research assistants, 20 participants were selected. The process of data collection continued until the required sample (600 responses) was reached. The targeted respondents received a formal email invitation to participate in the study. Participants received a consent form and study questionnaires in Arabic and English. Participants were informed that participation is voluntary and guaranteed data anonymity and confidentiality. They were also told data would be collected in three phases, and they could stop without reason. Six hundred participants received questionnaires in the first data collection phase. In all three phases, 385 people completed the questionnaire. Every hospital held a formal online debriefing for participants who completed all three questionnaire phases. The response rate was 64.16%.

After conducting the Cook and Leverage test for outlier detection, 23 responses were removed, and only 362 were retained for further analysis. Of 362 participants, 55.7% were male and 44.3% were female, 59.6% belonged to the age group of 25-35 years, and 40.4% were higher than 35 years.

Instruments

Demographic Information: Participants' demographic data were collected by utilizing self-report demographic questions. The demographic variables were age (less than 25 years, 25-30
years, 31-35 years, 36-40 years, 41-45 years, 46-50 years and above 50 years), gender categories (Male & Female), education level (Bachelor, Master, Ph.D., Others), and tenure (Less than one year, 1-5 years, 6-10 years, 11-15 years, 16-20 years and above 20 years).

**Authentic Leadership:** AL was measured based on the perception of the respondent’s immediate supervisor’s authentic behavior. The AL scale was constructed by Walumbwa et al. (2008) and comprises four dimensions (i.e., SA, RT, BP, and IMP), each containing four items. Respondents were asked to evaluate their supervisor’s authentic behavior on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The study utilized a second-order construct to measure respondents’ perceptions of AL. According to Rasoolimanesh et al. (2019), researchers should utilize criterion-related validity to measure formative credibility measures. The results of deleting formative items from a measure can be more severe than those of removing a reflective item from a measurement model. Therefore, SA, RT, IMP, and BP are not interchangeable and can create the respondent's perception of AL.

**Knowledge-Sharing Behavior:** KSB was measured based on the respondent's perception of their KS attitudes. KSB construct was measured by a 9-item (out of 16) scale developed by Ramayah et al. (2014) representing organizational communication and personal interactions. Sample item includes “I express ideas and thoughts in organizational meetings.” Respondents were asked to evaluate their KSB on a 5-point Likert scale ranging from 1 (Never) to 5 (Always).

**Employee Creativity:** EC was measured based on the respondent’s perception of their work/task creativity. EC was measured through a 03-item scale developed by Oldham and Cummings (1996). Sample item includes “I often come up with adaptive and practical work useful to the organization.” Respondents were asked to evaluate their work/ task creativity on a 5-point Likert scale ranging from 1 (Never) to 5 (Always).

**Extra-Role Performance:** ERP is measured based on the respondent's perception regarding their behaviors, such as helping peers, participating in team/group activities, volunteering for additional tasks, and demonstrating positive attitudes. A self-report ERP was measured from the individual work performance questionnaire (IWPQ) developed by Koopmans et al. (2012). Sample item includes "I kept looking for new challenges in my job." Respondents rated their contextual performance of the past three months using a 5-point Likert-type scale ranging from 1 (Never) to 5 (Always).

**Procedures**

This study used three-phase data collection to eliminate common method bias (MacKenzie & Podsakoff, 2012). In the first phase, participants received an informed consent form, demographic questions (age, gender, education, tenure), and an AL scale. In this phase, 600 questionnaires were distributed per city. Data was collected until 600 responses were received. Participants who completed the first phase received the next link with random KSB and EC items after two months. The second data collection phase yielded 465 usable responses. Participants completed the ERP scale and were debriefed in the third/final phase two months after the second phase. The final data collection phase yielded 385 complete responses. The
researchers generated a unique code to match responses from different phases to protect participant anonymity. The number of respondents in each phase of data collection decreased due to (a) resignation or termination, (b) loss of interest in the research, or (c) migration. However, Saunders et al. (2016) say the sample size is representative.

All variables' data came from a single source, so Common Method Variance (CMV) could lower the result validity. Harman's single-factor analysis examined the four variables' items to capture distinct constructs without common source bias. This analysis used exploratory factor analysis without rotation. The first factor explains 24.37% of the variance (65.85%). Discriminant validity and no CMV were found in the four constructs.

Before hypothesis testing, the study used multiple analysis methods. First, construct validity was assessed for the four multi-item measures (AL, KSB, EC, and ERP). Second, the measurement model was analyzed for validity. Third, descriptive statistics and Pearson correlation analysis were conducted before using Smart PLS 4's mediated-mediation regression technique with Structural Equation Modeling (SEM). Conditional indirect effects with sequential mediation were examined using the SEM. Testing this study's hypotheses using data analysis was reliable and practical.

**Results**

**Confirmatory Composite Analysis**

Structural equation modeling was used to evaluate structural models because the framework comprises reflective (i.e., KSB, EC, and ERP) and composite constructs (i.e., AL) and is relatively complex. The initial emphasis was on establishing the reflective construct's validity, reliability, and multicollinearity. The reliability estimates (measured by Cronbach's alpha, composite reliability, and rho_A), average variance extracted (AVE), and assessment of multicollinearity were computed (refer to Table 1). The values for CA (.73 - .92), CR (.74 to .93), and rho_A (.75 - .93) exceed the recommended threshold of .70 (Hair et al., 2020). The estimated AVE values for KSB (.63), EC (.66), and ERP (.63) surpass the commonly acknowledged threshold of .50 (Fornell & Larcker, 1981). This implies that the amount of variability accounted for by the latent constructs is greater than that attributed to measurement error. According to Fornell and Larcker (1981), and Hair et al. (2020), the constructs' reliability and validity values, specifically CA, CR, rho_A, and AVE, exceeded the recommended threshold. Therefore, the convergent validity of the constructs was satisfactory, allowing for the continuation of data analysis. The factor loading for each item was higher than .40, and the variance inflation factor (VIF) was less than 3, representing no multicollinearity issue.
According to Walumbwa et al. (2008), AL was regarded as a composite construct. For analyzing the reliability and validity of the composite variable (i.e., AL), it was expanded to include four reflective aspects of AL: balanced processing (BP_AL), internalized moral perspective (IMP_AL), rational transparency (RT_AL), and self-awareness (SA_AL). The process outlined by Luthans et al. (2008) was adhered to derive a composite score for AL. Initially, the calculation of the items about each of the four dimensions was conducted to derive a composite average for each respective dimension. Then, the averages for the four dimensions were computed to determine the composite AL score (CA = .94, AVE = .77). Higher reliability scores and AVE indicate more robust manifestations of AL. For further data analysis, Smart PLS4 was used.

**Discriminant Validity**

The Fornell Larcker and HTMT criteria were employed to assess discriminant validity. The discriminant validity of the constructs is demonstrated by the results presented in Table 2, where it can be observed that the square root of each construct’s AVE is higher than its correlation with all other constructs. In addition, it can be observed that all HTMT values are below the threshold of .90, indicating the presence of discriminant validity among the scales employed and highlighting the distinct characteristics associated with each scale.

### Table 1

**Assessment of Reflective and Composite Measurements**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Type</th>
<th>Loadings</th>
<th>CA</th>
<th>Rho_A</th>
<th>CR</th>
<th>AVE</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>BP1-3</td>
<td>Reflective</td>
<td>.88-.92</td>
<td>.85</td>
<td>.89</td>
<td>.92</td>
<td>.69</td>
<td>1.30-2.24</td>
</tr>
<tr>
<td>IMP</td>
<td>IMP1-3</td>
<td>Reflective</td>
<td>.79-.82</td>
<td>.88</td>
<td>.88</td>
<td>.92</td>
<td>.70</td>
<td>2.07-2.43</td>
</tr>
<tr>
<td>RT</td>
<td>RT1-5</td>
<td>Reflective</td>
<td>.63-.74</td>
<td>.88</td>
<td>.89</td>
<td>.91</td>
<td>.69</td>
<td>1.91-2.51</td>
</tr>
<tr>
<td>SA</td>
<td>SA1-3</td>
<td>Reflective</td>
<td>.76-.84</td>
<td>.87</td>
<td>.88</td>
<td>.92</td>
<td>.71</td>
<td>1.94-2.15</td>
</tr>
<tr>
<td>KSB</td>
<td>KSB1-9</td>
<td>Reflective</td>
<td>.56-.66</td>
<td>.92</td>
<td>.92</td>
<td>.93</td>
<td>.62</td>
<td>2.03-2.45</td>
</tr>
<tr>
<td>EC</td>
<td>EC1-3</td>
<td>Reflective</td>
<td>.58-.71</td>
<td>.73</td>
<td>.74</td>
<td>.75</td>
<td>.65</td>
<td>1.34-1.63</td>
</tr>
<tr>
<td>ERP</td>
<td>EP1-7</td>
<td>Reflective</td>
<td>.57-.69</td>
<td>.90</td>
<td>.91</td>
<td>.92</td>
<td>.63</td>
<td>1.23-2.46</td>
</tr>
</tbody>
</table>

**Note.** CA = Cronbach Alpha; CR = Composite Reliability; AVE = Average Variance Extracted; VIF = Variance Inflation Factor; BCCI = Bias Corrected Confidence Interval

### Table 2

**Discriminant Analysis (HTMT and Fornell-Larcker Criterion)**

<table>
<thead>
<tr>
<th>Hetro-Trait Mono-Trait (HTMT) Criterion</th>
<th>Fornell-Larcker Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>.84</td>
</tr>
<tr>
<td>IMP</td>
<td>.54</td>
</tr>
<tr>
<td>RT</td>
<td>.69</td>
</tr>
<tr>
<td>SA</td>
<td>.49</td>
</tr>
<tr>
<td>KSB</td>
<td>.69</td>
</tr>
<tr>
<td>EC</td>
<td>.66</td>
</tr>
<tr>
<td>ERP</td>
<td>.65</td>
</tr>
</tbody>
</table>

**Note.** The bold numbers in diagonal in Fornell-Larcker section are the square root of AVE of each construct, and other numbers are correlations between constructs; Balanced Processing (BP); Internalized Moral Perspective (IMP); Rational Transparency (RT); Self-Awareness (SA); Knowledge Sharing Behavior (KSB); Employee Creativity (EC); Extra-Role Performance (ERP)
**Descriptive Statistics and Pearson Correlation**

Table 3 presents descriptive statistics (i.e., mean, and standard deviation) and Pearson correlation statistics for dimensions of AL, KSB, EC, and ERP. Based on the values presented in Table 3, there is a statistically significant positive correlation between AL ($r = .58, p < .01$), KSB ($r = .89, p < .01$), and EC ($r = .82, p < .01$) with ERP. According to Gannon et al. (2021), an examination was conducted to evaluate the relationship between the various dimensions of AL (i.e., BP, IMP, RT, and SA) and the ERP. The findings demonstrate a significant association between each aspect of AL and the extent employees engage in ERP.

Table 3

| Descriptive Statistics and Pearson Correlation Analysis |
|-----------------------------------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                               | Gender | BP | Gender | Age | SA | IMP | RT | AL | KSB | EC | ERP |
| Mean | S.Dev | .16 | .32 | .52 | .77 | .72 | .70 | .70 | .64 | .63 | .64 | .54 | .58 | .89 | .82 | 1 |
| 1.44 | 0.49 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |

Note. **. Correlation is significant at the 0.01 level (2-tailed).**

**Model Evaluation**

Evaluation regarding the model’s ability to forecast outcomes should predominantly be based on a single target variable (i.e., AL). Hair et al. (2020) in their study used a range of measures to predict and validate the variations in endogenous variables (i.e., KSB, EC, and ERP), and outcome of exogenous variables (i.e., AL). The study includes SRMR (Standardized Root Mean Square Residual) values that should be below .08, NFI (Normed Fit Index) values should be above .90, and $Q^2_{\text{predict}}$ values (explaining predictive relevance) exceeding .00. Based on the study of Shmueli et al. (2019), the endogenous variables exhibited in Table 4 show satisfactory $Q^2_{\text{predict}}$ values for KSB ($Q^2_{\text{predict}} = .72, Q^2 \text{ effect} = \text{Large}$), EC ($Q^2_{\text{predict}} = .61, Q^2 \text{ effect} = \text{Large}$), and ERP ($Q^2_{\text{predict}} = .60, Q^2 \text{ effect} = \text{Large}$). Moreover, the high values of $R^2_{\text{adj}}$ for the influence of AL on KSB (.73), EC (.82), and ERP (.84) show the significant and positive impact of AL on these endogenous variables. These findings imply that the proposed model of the study effectively depicts the empirical data and has a strong predictive capability. Additionally, the value of SRMR (.08) and the value of NFI (.94) show that the model has a satisfactory fit.

Table 4

| Model Evaluation |
|----------------|----------------|----------------|----------------|----------------|
| Variables | SRMR | $R^2_{\text{adj}}$ | NFI | $Q^2_{\text{predict}}$ | Q2 Effect |
|----------------|----------------|----------------|----------------|----------------|
| AL | .08 | .73 | .94 | .73 | Large |
| KSB | EC | .82 | .61 | Large |
| ERP | .85 | .60 | Large |

Note. SRMR (Standardized Root Mean Square Residual); NFI (Normed Fit Index); $Q^2_{\text{predict}}$ for Predictive Relevance
Structural Model Assessment

The findings of the hypothesis evaluation are shown in Table 5 and Figure 2. The findings show a clear and statistically significant impact of AL on ERP ($\beta = .78$, $p < .00$). Thus, giving proof in favor of $H_1$. Moreover, the findings provide evidence for the statistically significant influence of AL on KSB ($\beta = .85$, $p < .00$) and EC ($\beta = .77$, $p < .00$), therefore confirm $H_2$ and $H_3$. The results shown in Table 5 also provide proof for the influence of KSB on EC ($\beta = .90$, $p < .00$) and ERP ($\beta = .81$, $p < .00$). Therefore, the results of the study provide support for hypotheses $H_4$ and $H_5$. Table 5 highlights the significant influence of EC ($\beta = .66$, $p < .00$) on ERP, thus offer empirical support for $H_6$.

The product coefficient approach was used to evaluate the indirect influence of AL on ERP. The significant indirect effects were evaluated using the BCCI method, as explained by Gannon et al. (2021). The study findings show that AL has a significant indirect influence on ERP through the mediating variables of KSB and EC ($\beta = .51$, $p < .00$, BCCI = .43, .60). These results provide support for $H_7$.

Table 5

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Direct / Indirect Effects</th>
<th>$\beta$</th>
<th>$SD$</th>
<th>$t$</th>
<th>$p$</th>
<th>BCCI 2.50%</th>
<th>BCCI 97.50%</th>
<th>Hypothesis Support</th>
</tr>
</thead>
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<tr>
<td>$H_1$ AL $\rightarrow$ ERP</td>
<td>.78</td>
<td>.02</td>
<td>35.18</td>
<td>.00</td>
<td>.72</td>
<td>.81</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>$H_2$ AL $\rightarrow$ KSB</td>
<td>.85</td>
<td>.02</td>
<td>47.33</td>
<td>.00</td>
<td>.81</td>
<td>.88</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>$H_3$ AL $\rightarrow$ EC</td>
<td>.77</td>
<td>.01</td>
<td>35.93</td>
<td>.00</td>
<td>.72</td>
<td>.81</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>$H_4$ KSB $\rightarrow$ EC</td>
<td>.90</td>
<td>.01</td>
<td>82.99</td>
<td>.00</td>
<td>.88</td>
<td>.92</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>$H_5$ KSB $\rightarrow$ ERP</td>
<td>.81</td>
<td>.04</td>
<td>20.44</td>
<td>.00</td>
<td>.73</td>
<td>.88</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>$H_6$ EC $\rightarrow$ ERP</td>
<td>.66</td>
<td>.05</td>
<td>12.60</td>
<td>.00</td>
<td>.56</td>
<td>.77</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>$H_7$ AL $\rightarrow$ KSB $\rightarrow$ EC $\rightarrow$ ERP</td>
<td>.51</td>
<td>.04</td>
<td>12.07</td>
<td>.00</td>
<td>.43</td>
<td>.60</td>
<td>Supported</td>
<td></td>
</tr>
</tbody>
</table>

Note. Authentic Leadership (AL); Knowledge Sharing Behavior (KSB); Employee Creativity (EC); Employee Performance (EP); Bias Corrected Confidence Interval (BCCI)

Figure 2

Results of Hypothesis Testing
Discussion

This study shows that AL positively and significantly affects ERP, KSB, and EC. These findings support a growing body of research emphasizing AL's crucial role in shaping positive organizational behaviors. ERP and AL have a strong correlation, supporting previous research. Hadian and Afshari (2019) found that followers perform above and beyond their job duties when their leaders are authentic. AL needs trust, fairness, and moral and ethical guidance. Adil and Kamal (2020) argue that AL can boost employees' self-efficacy and create a psychologically secure environment, which increases discretionary work behavior (ERP). Our findings also support AL's role in EC and KSBs. Chaudhary and Panda (2018) found that ALs foster an environment where employees feel valued and trusted, enabling unrestricted information sharing. When leaders show genuine concern and integrity, employees feel more secure, motivated to KSB, and inclined to be creative (Edú-Valsania et al., 2016; Mubarak & Noor, 2018).

The study found that knowledge sharing improves EC and ERP. Employees with KS foster an environment that encourages creative thinking and independent decision-making, leading to improved organizational performance (Grošelj et al., 2021; Mrayyan et al., 2023). The knowledge creation theory emphasizes employee knowledge sharing in shaping EC and innovation. EC's effect on ERP also focuses on the associations of these variables. Creative employees are likelier to exhibit proactive and productive organizational behaviors beyond their job description (Imam et al., 2020; Ribeiro et al., 2022). Leaders can motivate employees to go beyond their job description and improve performance by creating a creative workplace (Nasir et al., 2022). The study shows that AL indirectly affects ERP by affecting KSB and creativity.

Authentic leaders can indirectly but positively affect ERP through KSB and EC (Bednář et al., 2023; Swanson et al., 2020). The study also strongly supports AL's impact on organizational outcomes. ALs can improve ERP by promoting EC and KSB (Fong et al., 2018; Rasheed, 2023). AL is transparent, but complete openness is not always appropriate or practical in some organizational situations (Alvesson & Einola, 2019). Authentic leaders may struggle to withhold information for legal, strategic, or privacy reasons. The AL approach relies on bias or flawed self-awareness, resulting in a gap between leaders' self-perception and others' (Gardner et al., 2021). Consequently, such behavior leads to ineffectual leadership.

Critical situations require direct, decisive leadership. AL may struggle to make quick decisions due to transparency and consent, worsening the crisis (Hadian & Afshari, 2019). Mergers and organizational transformations require rapid changes, but AL's soft approach is insufficient (Gardner et al., 2021). In organizations that value strategic planning and confidentiality, the AL approach's transparency may reveal strategic intent or weaknesses to competitors (Imam et al., 2020).

Theoretical Implications

Collectivist Saudi healthcare organizations that value group harmony and in-group loyalty, AL characterized by genuineness, ethical standards, and open communication can significantly impact the social exchange dynamics of healthcare teams. Given the cultural emphasis on interpersonal relationships and respect for authority figures, AL may be more effective at
gaining employee trust and respect. Trust fosters a positive social exchange relationship, enabling employees to perform ERP. Healthcare employees must share knowledge, where patient care and safety are critical. AL can make employees feel valued and safe sharing their knowledge, ideas, and experiences. This is vital in a sector where mistakes can be costly. AL promotes openness and learning, which helps share critical knowledge for innovation, problem-solving, and better patient care. Inspired by their leaders’ genuine support, SET employees share knowledge as a social exchange. Healthcare employees are more likely to find creative solutions when supported by AL and engaged in frequent knowledge exchanges. Creative solutions to healthcare issues improve the organization’s adaptability and resilience (Al Khashan et al., 2021). SET views EC as a valuable resource more likely to contribute when leaders and colleagues interact positively.

For Saudi Arabian healthcare organizations, the theoretical model highlights the importance of developing AL to enhance ERP. By engaging in authentic social exchanges, AL can foster an environment where activities such as KSB and EC are part of the organizational culture, resulting in improving healthcare outcomes. This is specifically applicable in the healthcare sector where teamwork, continuous learning, and adaptability are essential for success. Within Saudi healthcare organizations, AL can significantly influence ERP by creating a positive cycle of social exchanges. This cycle begins with the establishment of trust and respect through authentic interactions, which leads to increased KSB, fostering EC. These factors mutually contribute to enhancing ERP, eventually enhancing the organizational ability to deliver high-quality patient care in a complex and dynamic environment.

**Practical Implications**
Honest, transparent, and ethical leadership boosts healthcare worker engagement (Zeb et al., 2020). Honest, supportive organizations and leaders can inspire healthcare workers to go above and beyond, improving patient care and organizational effectiveness. Motivated healthcare workers are more compassionate, focus on patient needs, and improve quality (Capili et al., 2022). Therefore, ALs in this sector can improve patient satisfaction and health. AL is crucial to shaping organizational culture. In the fast-paced healthcare industry, these leaders can foster openness, morality, and employee well-being (Aboramadan et al., 2021). Saudi healthcare organizations should develop AL. Teach empathy, ethical decision-making, and open communication. These workshops and courses can teach leaders from different sectors how to improve team performance outside work. Strategies that encourage AL could improve Saudi healthcare. This may include promoting AL, healthcare sector-focused ethics, leadership assessment, and performance measurement.

AL in healthcare organizations can create a safe and inspiring space for doctors to share knowledge, experiences, and best practices (Puni & Hilton, 2020). Information must flow freely to improve patient care and healthcare outcomes. AL can help doctors and nurses collaborate and communicate. AL can improve patient care and knowledge sharing across departments by promoting mutual respect and open communication. AL can improve the proactive sharing of patient care, medical errors, and effective treatments. This reduces medical errors and improves care. Healthcare workers in Saudi Arabia are multicultural. Culturally competent ALs understand and accept different cultures, improving employee KSB. Multicultural team
members understand and work together better, improving healthcare quality. This includes creating protocols and criteria to inspire, motivate, and recognize ALs that promote transparent and cooperative knowledge-sharing (Asghar et al., 2023).

ALs inspire their teams to innovate patient care and healthcare management (Imam et al., 2020). Innovative solutions are needed for complex healthcare issues. To boost EC, ALs encourage critical thinking and creative problem-solving in healthcare. This improves healthcare systems and patient care. Saudi Arabia’s healthcare workforce diversity may inspire innovation. According to Yıkılmaz and Sürücü (2023), ALs can boost creativity by incorporating diverse perspectives and backgrounds. Comprehensive and culturally sensitive healthcare can be improved with this approach. Due to the rapid growth of healthcare, employees must be involved in ongoing learning. AL prioritizes team development while staying current in medicine. A culture of continuous learning and development can result. This company culture encourages innovation. AL promotes EC by organizing problem-solving meetings and interdisciplinary collaboration.

Culturally sensitive KSB is needed in Saudi Arabia, which values hierarchy, culture, and tradition (Al Naimi, 2022). Respecting seniority and improving hierarchical communication can improve EC. Knowledge-sharing between senior and junior employees can help healthcare organizations integrate traditional and modern practices. Saudi collectivism and shared achievements can help KSB. Shared problem-solving works well in these cultures. Language barriers can hinder knowledge sharing in multicultural Saudi healthcare workplaces (Al Khashan et al., 2021). Use translation services or multilingual materials to improve communication, collaboration, and innovation.

Saudi culture values community and collaboration, so knowledge-sharing can improve EC and ERP (Hejazi et al., 2022). This approach should be carefully associated with cultural norms to encourage polite discussions and idea-sharing at all organizational levels. AL and cultural awareness training can boost employee performance in multicultural Saudi healthcare. Organizational practices should promote AL, KSB, and EC. This may include recognition and reward systems for exceptional ERP, knowledge and expertise-sharing platforms, and an environment that values diverse ideas. Saudi hierarchies may hinder KSB and EC. AL should guide these systems and support a more holistic and collaborative approach while respecting hierarchies and cultural norms.

**Conclusion**

This study examines the crucial role of AL in influencing ERP in the healthcare sector of Saudi Arabia. The study describes that KSB among healthcare employees creates a conducive workplace environment for the innovative generation of ideas and problem-solving. This environment motivates employees to go above and beyond their job descriptions, while significantly contributing to the quality of patient care and institutional effectiveness. In total, the merger of AL, ERP, KSB, and EC offers a powerful effect on healthcare institutions. The interaction of these variables can result in enhancing not only patient care but also the organizational efficiency of the overall healthcare sector.
Declarations

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