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Sustainable leadership, interpersonal emotion regulation, job characteristics, and employees' behavioral outcome in SMEs

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Abstract: The study aims to examine the quality of leader-member exchange (LMX) as a mediator, as well as leader interpersonal emotion regulation (LIER) and job characteristics (JC) as moderators, in the relationship between sustainable leadership (SL) and employee-related innovative work behaviors (IWB). Using a sample of 207 employees of SMEs in Saudi Arabia, the authors found that SL did not significantly influence IWB through LMX quality. The empirical findings confirm that the direct relationship between SL and LMX quality was significantly dependent on LIER. Moreover, JC did not moderate the relationship between LMX and IWB. This work contributes to the knowledge about the emerging leadership style of SL and the role of emotions in leading people. It is the first to apply the LMX theory in research on SL, and it adds to the understanding of the antecedents of various employee-related outcomes.

Keywords: emotions; task independence; job security; leadership effectiveness; quality relationship

1. Introduction

Current sustainability challenges related to the reduction of waste, air pollution, and social inequity, for example, justify the need to drive organizations toward sustainable development. Embracing organizational activities in sustainable development should be viewed not as a regulatory constraint but as a way to achieve a competitive advantage [1,2]. Therefore, there is a need to explore sustainable leadership (SL) as an emerging leadership style that can drive organizational success but also contributes positively to the well-being of individuals, communities, and the planet [3]. SL derives some inspiration from transformational leadership (through practicing idealized influence, intellectual stimulation, inspirational motivation, and individualized consideration), servant leadership (through prioritizing the fulfillment of the needs of employees rather than satisfying their personal needs), spiritual leadership (through putting into practice spiritual values such as honesty, integrity, and humility and creating the self as an example of someone who can be trusted), shared leadership (through sharing leadership roles with employees), as well as ethical leadership (through promoting ethical conduct with the use of reinforcement and two-way communication) [4]. Although all the above leadership styles prioritize ethical behavior and positive impact, only sustainable leaders focus on responsible and holistic organizational success. They are familiar with sustainability challenges and, without neglecting the needs of shareholders in the form of profits (economic sustainability), they strive to fulfill the needs of other company stakeholders by striving for social development (social sustainability) and caring for the natural environment (environmental sustainability). While making decisions, they predict

the long-term consequences and involve all stakeholders. They also stimulate experimentation and innovation [5]. At large, this draws attention to the incremental validity of sustainable leadership over traditional frameworks; whereas conventional leadership styles primarily emphasize localized or short-term follower outcomes [6], sustainable leadership practices uniquely respond to the broader macroeconomic and ecological stakeholder needs, establishing distinct explanatory value in predicting innovative behaviors within modern organizations [7,8].

Previous studies researching employee-related outcomes have provided evidence that SL positively impacts psychological empowerment [9], employees' intrinsic motivation and job satisfaction [10], organizational commitment [11], employees' well-being [12,13], organizational learning [14], innovative behavior [7], job performance, and organizational citizenship behavior [15]. However, the above studies were conducted in different industries and countries, and none of them tested an integrated research model covering employee behavioral outcomes in the form of innovative work behavior (IWB). On one hand, leadership is a complex and multifaceted concept. On the other hand, for organizational sustainable development, it is not enough to have employees who know what their job should produce and who only complete their in-job requirements. It is crucial to have employees who will "go the extra mile" out of personal motivation, engage in organizational activities beyond their formal job requirements, and participate in the implementation of innovation [16]. Examining employees' IWB in the presence of multiple conditional factors such as SL, job characteristics, leader-member exchange quality, and interpersonal emotion regulations in one study allows for a richer, more holistic understanding of leadership's impact, enabling researchers and practitioners to make more informed decisions and interventions that lead to positive changes in organizations. Therefore, this study aims to fill the above research gap.

In addition, the central questions in leadership theories are what makes leaders effective in motivating employees and how they achieve the desired outcomes [17]. The leader-member exchange (LMX) theory argues that leaders build and maintain positive "leader-follower" relationships through the exchange of different resources [18]. Low-quality LMX reflects only the mandatory fulfillment of formal work duties [19]. In turn, the attributes of high-quality exchanges are mutual respect, trust, and liking; they stimulate employees' well-being and job performance [20]. Incorporating LMX into the examination of SL could provide a more nuanced understanding of how sustainable practices manifest in day-to-day interactions between leaders and team members. It would offer insights into the interpersonal aspects of SL's impact on individuals. However, none of the previous studies on SL examined the mechanism in the form of LMX between this leadership style and IWB, which is another research gap filled by this study.

Furthermore, the extant literature shows that leaders who engage in interpersonal emotion regulation (LIER)—i.e., modifying, inducing, and modulating emotions in others—achieve better leadership outcomes [21]. Their emotion-oriented attempts have been found to be crucial in developing positive leader-member exchanges as well [22]. The implications of LIER in the workplace require further research [23]. In particular, there is a research gap related to examining LIER in terms of specific leadership styles [24] because previous studies focused on a general notion of leadership [25]. Considering sustainable leaders' responsiveness to employees' emotions in interpersonal relationships may increase the understanding of social exchange between these parties; this study further aims to examine the moderating

role of LIER on the “SL–LMX” relationship.

Finally, this study considers the arguments of the job characteristic theory, which states that various job characteristics (JC) are key to an employee’s motivation and thus influence employee behavioral outcomes. There are five components of job characteristics: job identity, job significance, skill variety, feedback, and autonomy [26]. Even if sustainable leaders develop positive LMX, employees may experience more or less variety, for example, in their daily routine because JC are to some extent independent of leaders, being formed according to the requirements of professions or related technologies. This justifies the need to include JC as a moderator in the relationship between LMX and employee IWB. Accordingly, the present study aims to examine how sustainable leadership predicts employee-related IWB through LMX; LIER is explored as a moderator in the relationship between SL and LMX; and JC is evaluated as a conditional factor in the “LMX–employee IWB” relationship.

Empirical research was conducted for this study in the form of a three-stage survey among employees of SMEs in Saudi Arabia. Saudi Arabia is the largest economy in the Middle East/North Africa (MENA) region. Its SMEs comprise approximately 20% of all SMEs in the MENA region [27]. SMEs represent almost 90% of all firms and generate 25% of the employment opportunities in Saudi Arabia, yet their contribution toward GDP (20%) in Saudi Arabia is lower than in other emerging markets. The program Saudi Vision 2030 aims to increase this figure to 35%. However, SMEs in Saudi Arabia are facing challenges such as bureaucratic procedures, funding, skilled employees, technical know-how, IT infrastructure, and mentoring support [28]. Along these lines, employee-related behavioral outcomes are vital to the effective and efficient operation of SMEs [29].

This study contributes to the leadership literature in the following ways. It increases the knowledge about the emerging leadership style of SL and adds to the understanding of the antecedents of employee-related behavioral outcomes. In particular, its theoretically grounded framework is the first to apply the LMX and LIER theories in research on SL. It extends the research on social exchanges between a leader and their followers as well as on the role of emotions in leading people. It is the first study to verify the above-described complex research model, which comprises one mediator (LMX) and two moderators (LIER and JC). It also determines the role of JC in developing employee-related outcomes other than the broadly explored concept of task performance.

2. Theoretical background and hypothesis development

2.1. LMX as a mechanism between SL and employee innovative work behavior

Past studies have claimed a significant impact of LMX on task-related job performance [30,31], organizational citizenship behavior as well [31,32], and employees’ sense of energy, which in turn drives their IWB [33].

As indicated in the Introduction, SL derives inspiration from transformational leadership. The latter has been found to be a strong predictor of high quality of the “leader-follower” relationship [18]. In particular, individualized consideration and intellectual stimulation—which are practiced by SL—have been proven to play a significant role in forming the LMX.

In the LMX process, leaders may provide employees with task-related resources (e.g., preferred projects), psychological resources (e.g., autonomy), and social resources (e.g., friendship behaviors) [34]. High-quality LMX is based on respect,

mutual trust, and obligation toward each other [20]. In the LMX theory, trust is further associated with a leader's authentic behavior. Sustainable leaders develop trust in teams and show true concern about employees; they serve people. Moreover, in the LMX process, employees should be provided with new traits, skills, and competencies [35]. Sustainable leaders value and develop the competencies of their followers and stimulate knowledge sharing [36]. For a high-quality LMX to develop, leaders should also support employees, use employee participation in decision-making, and provide fair access to rewards [18]. All these characteristics are typical of sustainable leaders [37].

Idea generation—embedded in IWB—requires a psychologically safe work environment; such an environment is fostered by sustainable leaders. However, IWB is more than mere creation (idea generation). It is a complex process that covers a combination of different motives and overcoming difficulties [38]. Therefore, sustainable leaders—when developing highly supportive relationships with their followers—provide employees with the resources needed to innovate. They also give autonomy to employees and enhance experimentation, which creates an innovative work atmosphere [39]. All this leads to the hypotheses below.

H1: LMX significantly mediates the relationship between SL and IWB.

2.2. The moderating role of LIER on the relationship between SL and LMX

As the literature shows, a leader's behavior influences their employees' perceptions of LMX, and one aspect of it is how a leader regulates the emotions of their followers [22]. Followers assess the responsiveness of a leader and use the results of this assessment in further evaluating, reciprocating, and maintaining their relationship with the leader [22]. In particular, leaders' active and conscious behaviors to either enhance positive emotions or reduce negative ones among their subordinates influence the quality of the relationships with the leader [23]. These attempts can take the form of modulating the emotions that followers experience, helping them to modify or select affect-laden situations, and reappraising or deploying their focus from affect-eliciting events [21]. Furthermore, emotional regulation primarily drives the mutual trust and relational calculus to develop high-quality LMX [25]. Upon establishing this dyadic trust, the translation of LMX into behavioral outcomes like IWB is more heavily dependent upon structural and task boundaries rather than emotional intervention [31,39]. Accordingly, this study has positioned LIER as a first-stage moderator on the relationship of SL with LMX. Hence, the following hypothesis is developed:

H2: LIER significantly positively moderates the “SL–LMX” relationship.

2.3. The moderating role of JC in the relationship between LMX and IWB

The job characteristic model elaborates on the job characteristics that play important roles in motivating people, and thus impact work-related outcomes. These characteristics cover task significance (the degree to which the job affects other people's lives), job identity (the degree to which the job requires the employee to identify and complete a task with a visible outcome), skill variety (the degree to which a job requires various activities), feedback (the degree to which the employee receives information about the results), and autonomy (the decision-making power about, e.g., the methods for executing tasks) [26].

Previous research provided evidence that task significance, job identity, and skill variety enhanced the meaningfulness of the work through intrinsically high motivation. This motivation is needed for all types of employee behavioral outcomes.

For example, Marić et al. [40] found that JC positively impacted OCBO through work engagement. However, as Pohl et al. [41] concluded, task significance and autonomy increase the level of individual responsibility experienced, which in turn leads to higher prosocial behavior. Moreover, job autonomy allows employees to create and try new solutions, and thus enhances IWB [42]. Finally, if employees receive constructive feedback, their motivation increases because they become more confident in different aspects of their performance—which may include IWB [43]. They learn which activities they should minimize and which they should intensify to improve their results. In light of the above arguments, the following hypotheses were formulated.

H3: JC significantly positively moderates the “LMX–IWB” relationship.

The research framework that covers all the above-presented relationships is depicted in **Figure 1**.

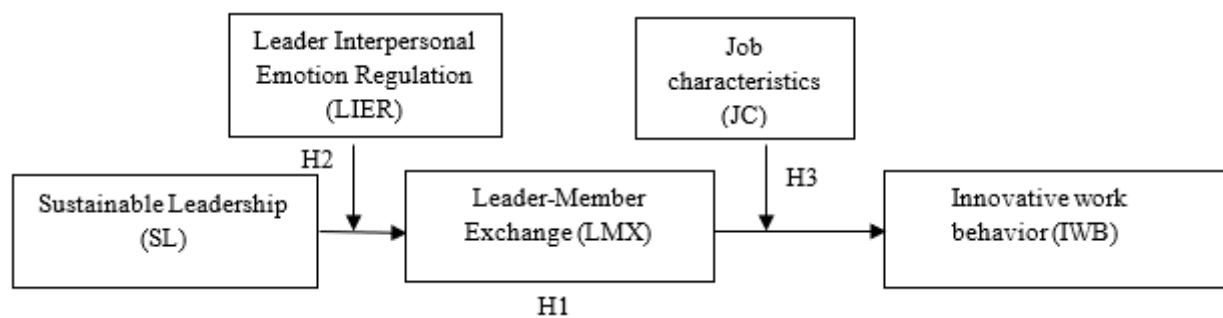


Figure 1. Research model.

Note. The interaction effects ($SL \times LIER$ and $LMX \times JC$) are tested as product terms in the PLS-SEM analysis, as specified in Hypotheses H2 and H3.

3. Research methodology

3.1. Context, sample, and data collection

This study focuses on SMEs. Small enterprises have 6–49 employees with an annual revenue of SAR 3–40 million; medium-sized enterprises have 50–249 employees, and their annual revenue is SAR 40–200 million [44].

In the MENA region, social sciences research comes across methodological challenges when surveying because of the unique political and sociocultural context, including authoritarianism and social desirability [45]. Moreover, these countries have a rentier economy, which highly depends on an unskilled and skilled migrant workforce to cope with its shortfall in different industries, such as construction, education, and services [46]. Therefore, employees of firms in the region are both citizens and expatriates. However, employees with such diversity have different points of reference for responding to various survey items [47]. As compared to expatriates, employees who are local citizens understand the local culture and business practices, drive higher productivity, lower operational expenses, and promote diversity [48]. Therefore, in this study, the authors collected data only from those employees of SMEs who are Saudi citizens. To cope with survey field worker identity, the authors were assisted by local faculty members in their respective areas. It was further ensured that participants respond to the survey form voluntarily. We also asked them to sign an informed consent form.

Considering the common method bias stemming from a single source [49], data for this study were collected from SME employees in three stages, ensuring an

assessment of the independent variable, mediator, and outcome variables at three different points in time, with a delay of four weeks. The authors also tried to prevent common method bias by encouraging employees to participate voluntarily and to use an arbitrary four-digit code so that their survey forms from three time points could be matched.

As there was no sampling frame, the authors adopted a convenience sampling approach to collect data from SME employees in Saudi Arabia. Moreover, a screening question was also added to ensure that respondents were Saudi citizens. In the study, the software application G*Power [50] mandated 108 as the minimum number of responses required to deliver reliable and valid results. Considering an average response rate of 35.70% in the social sciences [51] and this minimum sample size, the online survey form was initially shared with 500 SME employees in different regions of Saudi Arabia at Time-point I. They were requested to rate the SL practices in their companies. The authors received 247 responses.

After one month, the authors again shared the survey form, which covered demographic information and measured LMX, LIER, and JC, with all the participants who responded at Time-point I. This time, only 221 employees responded with completed survey forms. Later on, the authors again shared the online survey form with those 221 individuals in order to rate the employees' IWB after one month; 211 responses were received. After downloading the responses from a Google link, the authors matched the survey forms collected at the three stages and removed redundant responses. In the end, there were 207 cases, yielding a response rate of 56.60%. Here, the higher-than-average response rate for the social sciences might have emerged because of the involvement of local faculty members who played the role of liaisons in the field to assist with the steep attrition rates typical of multi-wave, time-lagged designs in the MENA region. In order to cope with social desirability or acquiescence associated with local faculty involvement, the authors adopted strict procedural steps where faculty members only helped to distribute the survey links but were offered no access to the data. Participants filled the survey form with full freedom, and used an arbitrary four-digit code to match responses at different phases anonymously. As participants were fully confident that their responses had no link to their employers or identities, this action helped to mitigate the social desirability or acquiescence bias in the current study. The authors then recorded the 207 valid responses in the statistical program SPSS v.23 for data screening and frequency and descriptive analysis. The authors conducted measurement model and structural model analysis in SmartPLS 3.0.

3.2. Measures

The study adopted measurement scales for all the continuous variables from past studies; the employees were asked to rate them based on a five-point Likert scale, ranging from "1" (strongly disagree) to "5" (strongly agree).

The authors asked the respondents to rate SL on the basis of a 15-item scale developed by McCann and Holt [52], which had previously been used in research on SMEs [53]. A sample item of the SL scale is "Your leaders make decisions while considering the entire organization."

The respondents rated LMX on the basis of a 7-item scale adopted from a study by Scandura and Graen [54]. Walumbwa et al. [55] tested this scale in the context of Chinese pharmaceutical companies and found it to be highly reliable. A sample item of the LMX scale is "How well do you feel that your immediate supervisor understands your problems and needs?"

In this study, LIER was evaluated using a unidimensional 20-item scale adopted

from a study by Hofmann et al. [56]. In the Turkish context, Gökdağ [57] confirmed the validity and reliability of this scale. A sample item of the LIER scale is “I like being in the presence of others when I feel positive because it magnifies the good feeling.”

Moreover, the authors asked employees to rate perceived JC using a 15-item scale of job diagnostic survey [26]. In the Pakistani and Indian context, Iqbal et al. [58] have also reported the validity of this scale. A sample item of the JC scale is “To what extent does your job permit you to decide on your own how to go about doing the work?.”

IWB was rated on the basis of a 9-item scale developed by Janssen [59], which was found to have acceptable reliability in the context of hotel employees in India [60]. A sample item of the IWB scale is “You create new ideas for difficult issues.”

Individual differences in demographic variables such as gender, age, and job tenure have been reported to significantly influence employees’ behaviors [61,62]. Therefore, the authors treated them as control variables in this study.

4. Results

4.1. Demographic analysis

There were many more male participants ($n = 173$, 83.57%) than female participants ($n = 34$, 16.43%). Most of the respondents ($n = 111$, 53.62%) had a bachelor’s degree; the next largest group was those with a master’s degree ($n = 77$, 37.20%). The authors also collected data from 11 doctors. The largest group (103 participants) had been working in their current company for 5–10 years, followed by those with 10–15 years of working tenure. Only three employees had been with their current employer for less than 1 year.

The largest group of participants ($n = 139$, 67.15%) came from small companies, followed by microenterprises ($n = 45$, 21.74%) and medium-sized enterprises ($n = 23$, 11.11%). Most of the SMEs involved were in the food and beverage industry ($n = 74$, 35.75%), followed by construction ($n = 59$, 28.50%), manufacturing ($n = 41$, 19.81%), social services ($n = 24$, 11.59%), and others ($n = 9$, 4.35%). Most of the companies were located in the Riyadh region ($n = 93$, 44.93%), followed by those from Makkah Al Mukarrama ($n = 61$, 29.47%), the eastern region ($n = 33$, 15.94%), Najran ($n = 11$, 5.31%), and others ($n = 9$, 4.35%).

4.2. Descriptive statistics

Data for this study were collected on the basis of five-point Likert scales. The values were low, moderate, or high if the mean value was ≤ 2.99 , between 3 and 3.99, or higher than 4, respectively (Iqbal et al., 2020). Among the surveyed SMEs in Saudi Arabia, this study revealed a high level of SL practices ($M = 4.062$), LIER ($M = 4.144$), JS ($M = 4.189$), and JA ($M = 4.249$). LMX ($M = 3.967$), JC ($M = 3.630$), JI ($M = 3.305$), JV ($M = 3.346$), JF ($M = 3.061$), and IWB ($M = 3.535$) were practiced at a moderate level in the surveyed Saudi Arabian SMEs.

4.3. Data screening

The authors checked the dataset for missing values, outliers, data normality, and common method bias. The current data were free of missing values because the participants were required to mark all items before submitting their responses. The Z-score analysis of all cases resulted in two cases with values above 3.29; these two cases were removed from the dataset. The Mahalanobis distance test was also run in order to identify any potential multivariate outliers. This test revealed that the data

were free of multivariate outliers. They also found that the skewness and kurtosis values of all continuous variables were in the range of ± 3 , which signified the absence of univariate normality in the dataset. As Mardia's kurtosis ($\beta = 173.649$, $\rho < 0.05$) and skewness ($\beta = 35.521$, $\rho < 0.05$) values were also significant, there was no issue with multivariate normality in this study.

4.4. Common method bias

To prevent common method bias, the authors adopted a procedural remedy of collecting data at three points in time. The statistical tools used to assess the presence of common method bias were Harman's single factor test and the post hoc marker variable technique [63]. The former test revealed that first-factor variance only accounted for 23.190%, which is less than 50% [49]. Regarding the latter technique, the authors considered the second smallest correlation (0.009) coefficient value as a proxy on the basis of the initial correlation matrix. After removing this value, they did not see any significant changes in the correlation values. Thus, both Harman's single factor test and the post hoc marker variable technique confirmed the absence of a common method bias in this study. Moreover, the confirmatory factor analysis revealed that the baseline model, which is a 5-factor model (SL, LMX, LIER, JC, and IWB), was a good fit ($\chi^2 = 528.153$; $CFI = 0.967 > 0.950$; $GFI = 0.951 > 0.950$; $SRMR = 0.056 < 0.080$; $RMSEA = 0.078 < 0.080$) as compared to other, alternate models.

4.5. Measurement model analysis

The authors removed one item of SL because its factor loading was below 0.40. All items of other variables in this study were in the range of 0.613 and 0.935, meaning that all measurement items had acceptable indicator reliability. SL (0.939), LMX (0.951), LIER (0.947), JC (0.833), and IWB (0.812) had composite reliability values higher than 0.70, indicating that these variables had acceptable internal reliability. Moreover, all variables had average variance extracted (AVE) values greater than 0.50 (Table 1), which indicates their acceptable convergent validity. Furthermore, the inter-construct correlation values of all variables were lower than the square root of their AVE values (Table 1), meaning that they had acceptable discriminant validity.

Table 1. Mean, reliability, and validity.

Construct	1	2	3	4	5	6	7	8	9	10
1. Innovative work behavior (IWB)	0.713									
2. Leader Interpersonal Emotion Regulation (LIER)	0.377	0.763								
3. Leader-Member Exchange (LMX)	0.129	0.152	0.858							
4. Job identity (JI)	0.184	0.192	0.468	0.814						
5. Job significance (JS)	0.151	0.112	0.289	0.358	0.899					
6. Job variety (JV)	0.186	0.144	0.356	0.208	0.187	0.876				
7. Job autonomy (JA)	0.112	0.191	0.176	0.318	0.348	0.178	0.888			
8. Job feedback (JF)	0.138	0.126	0.375	0.238	0.181	0.183	0.169	0.812		

Continuation Table:

Construct	1	2	3	4	5	6	7	8	9	10
9. Job characteristics (JC)	0.157	0.142	0.37	0.613	0.666	0.763	0.679	0.806	<i>0.708</i>	
10. Sustainable Leadership (SL)	0.132	0.14	0.835	0.168	0.186	0.185	0.142	0.281	0.188	<i>0.746</i>
Mean	3.535	4.144	3.976	3.305	4.189	3.346	4.249	3.061	3.63	4.062
CR	0.78	0.947	0.951	0.853	0.927	0.908	0.918	0.853	0.833	0.948
AVE	0.509	0.582	0.736	0.662	0.809	0.768	0.788	0.659	0.502	0.557

*Bold, Italic values indicate the square root of AVE.

4.6. Hypothesis testing

The path model analysis demonstrated that LMX significantly mediates the relationships between SL and IWB ($\beta = 0.218$, $p < 0.050$). Therefore, Hypothesis H1 was supported. The path analysis revealed a significant, positive impact of the interaction term SL*LIER on LMX quality ($\beta = 0.103$, $p < 0.050$). Therefore, the results support Hypothesis H2. Nevertheless, the interaction term LMX*JC did not significantly and positively influence IWB ($\beta = 0.056$, $p > 0.050$). This means JC does not moderate the relationship between LMX and IWB. Hence, Hypothesis H3 is rejected in the current study.

Table 2. Hypothesis testing.

Hypothesis	β	S.D	T-value	P-value	LLCI	ULCI
SL > LMX > IWB	0.218	0.125	2.248	0.025	0.036	0.526
SL*LIER > LMX	0.103	0.047	2.169	0.031	0.028	0.212
LMX*JC > IWB	0.056	0.122	0.459	0.323	-0.145	0.257

5. Discussion

This study revealed a positive relationship between the adoption of high-quality LMX practices by sustainable leaders and employee behavioral outcomes. LMX mediates the relationship between SL and behavior-related variables such as IWB (H1). It also showed that with increasing LIER, there was a stronger effect of SL on LMX quality (H2). However, JC did not demonstrate a moderating effect on the relationship between LMX and IWB (H3). These findings enrich the body of knowledge on the antecedents of employees' behavior and provide managerial implications, which will be elaborated below.

This study responds to the call for theories of leadership to be integrated with LMX [64] and extends the research that revealed a linkage between different leadership styles and LMX [18]. It demonstrates the power of SL in creating high-quality relationships between leaders and followers. SL enhances the obligation from employees to respond to the leader's support, involvement, trust, and other resources.

Considering behavioral LMX outcomes, the study revealed that in the presence of SL, LMX stimulates IWB. The results regarding the mediating impact of LMX on the relationship of SL with IWB are consistent with those in past studies [65–67]. Hoang et al. [65] have provided empirical evidence in favor of the indirect impact of entrepreneurial leadership on employees' innovative behavior through trust in leaders

in the hotel industry of Vietnam [68]. Taking into consideration water-conservation constraints, Selem et al. [66] collected data from hotel frontline employees in Egypt. Their empirical findings supported partial mediation of the LMX quality on the relationship of humble leadership with employee innovative behavior [66]. Employing quasi-experimental design in the service sector, it has also been claimed that paradoxical leadership indirectly influences innovative behaviors through enhancing followers' engagement [67]. In the Pakistani context, it was concluded that moral and authoritarian leaders indirectly affect employee voice behavior through LMX [69]. In health, it is proven that platform leadership both directly and indirectly influences frontline nurses' innovative behavior through LMX and relational energy [70]. This study indicates that employees perform their duties admirably when SL provides them with the required resources through high-quality LMX.

This study also adds to the discussion on LIER. Previous studies found a direct impact of LIER on LMX [22]. The current study is the first to examine the interaction between LIER and SL. It provides evidence that this interaction enhances LMX. This finding is also important for studies on SL. It indicates that although SL is oriented toward employees' needs, empowering and developing people [36], further regulation of the emotions of followers is needed to enhance LMX.

This study also increases the understanding of the role of JC in employee behavioral outcomes. Importantly, although the effects of JC on task performance have been confirmed in many studies [71], the findings show that JC does not moderate the relationship between LMX and IWB. However, its non-significant impact mandates methodological and theoretical scrutiny [43]. From a theoretical perspective, the extent studies have claimed JC as a direct predictor or mediator of LMX, this study posited job design as a moderator in the form of structural boundary constraints on employees' capability to convert relational trust into innovative behaviors. Several alternative theoretical models may offer insights into why JC failed to operate as a moderator in this study. Based on a resource redundancy perspective rooted in the conservation of resources theory, a high-quality LMX relationship is full of social, psychological, and task-related resources [34]. When sustainable leaders establish high-quality exchanges characterized by profound mutual trust, safety, and empowerment, these relational resources may fully satisfy the requirements needed to spark and sustain innovative work behavior [8,39]. In turn, the structural motivational properties embedded in JC become conceptually redundant; the leader-provided resource pool is already sufficient to drive innovation, making the external enrichment of the job itself less impactful as a boundary condition. In addition, the Job Characteristics Model operates primarily at the individual psychological level [26]. Conversely, LMX functions distinctly at the dyadic relational level [20]. Because IWB is an individual discretionary behavior heavily dependent on individual agency, the dyadic variance captured by LMX may dominate the psychological climate, rendering the individual-level task configuration captured by JC statistically decoupled from the interaction space. This misalignment between dyadic-level relational mechanisms and individual-level job design characteristics can dilute the cross-level interaction, resulting in the non-significant moderation observed in the current study. Finally, the structural interplay between these constructs may point toward a mediated pathway rather than a moderating framework. While the authors posited JC as a conditional variable, existing literature occasionally suggests that job characteristics are not entirely independent of leadership influence; rather, high-quality LMX often shapes how jobs are designed or perceived over time. The high-

quality LMX dyads frequently offer greater autonomy and task variety. Therefore, instead of interacting to influence IWB, LMX may directly cultivate richer job characteristics, which in turn stimulate innovative outcomes. This implies that the relationship is sequentially mediated rather than conditionally moderated by JC.

Methodologically, the authors conducted supplementary post-hoc analyses to explore if the composite index masked specific sub-dimensional interactions. Examining each sub-dimension of JC independently unraveled the non-significant interaction paths, which has ruled out sub-dimensional masking. Instead, the present finding is strongly attributed to the statistical restriction of range within the dataset. The descriptive analysis demonstrated that core dimensions of JC such as job feedback ($M = 3.061$) and job identity ($M = 3.305$) operate at uniform and moderate levels with minimum variations. Such low level of variation and lack of range drastically reduced the statistical power of PLS-SEM to diagnose interaction effect. Accordingly, future studies are recommended to take into consideration highly polarized job environments to further explore these boundary constraints.

5.1. Practical implications

This study increases the understanding of the factors that impact selected employee behaviors in the context of SMEs in Saudi Arabia. It also emphasizes that it is worth developing SL in the participating organizations because this emerging leadership style—by shaping high-quality LMX—leads to many positive employee behavioral outcomes simultaneously. When facing problems with low IWB, companies should monitor LMX quality. Then—to increase this quality—they should provide training programs for managers on how to apply SL and LIER practices in their workplace. Saudi SMEs should implement a dual-module training architecture: Sustainable Leadership (SL) Foundations and Interpersonal Emotion Regulation (LIER) in Action. These sustainable leadership foundations must train managers on multi-stakeholder decision-making frameworks, shifting focus from purely immediate profits to long-term economic and environmental stewardship, which is crucial for aligning with Saudi Vision 2030 goals. Under the interpersonal emotion regulation module, leaders should receive tactical training in interpersonal situational reappraisal and affect deployment. This includes teaching managers how to actively reframe workplace setbacks (e.g., failed innovative ideas) as positive learning milestones to lower employee anxiety and build psychological safety. To measure and track LIER effectively without incurring expensive consulting costs, SME managers can utilize behavioral self-checklists alongside short, anonymous 360-degree emotional pulse feedback loops. Furthermore, HR professionals in resource-constrained SMEs do not need expensive software to audit relationship health. Instead, they can seamlessly embed a shortened or adapted version of the scientifically validated 7-item LMX scale [54]. Consistently tracking simple items regarding mutual trust, loyalty, and recognition allows HR to quickly flag low-quality dyads and intervene with targeted mentorship before poor relational quality bottlenecks employee innovation (IWB). Finally, since IWBs help companies to attain success, cooperation between practitioners and researchers is needed to further examine the practices or phenomena that could make the “LMX–IWB” relationship positive and significant.

5.2. Limitations and future research avenues

Although the data collection was lagged by four weeks, this study is based on data collected at a specific moment. The success of LMX relies on co-evolving interactions between leaders and employees, different practices, and changes in

perceptions. Therefore, it is recommended that future studies use a longitudinal approach to data collection. Secondly, because the authors collected data at three points in time, it is difficult to conclude causality in this study. Future studies should employ an experimental approach to better capture the causality between the variables under investigation in this study. Thirdly, although the authors adopted the time-lagged three-waves data collection approach to reduce the common method bias, it fundamentally remains a cross-sectional design. As a result, this study cannot infer true causality from the observed relationships. Future studies should adopt true experimental or longitudinal designs to definitively conclude the underlying causal mechanisms between these variables. Fourthly, while data collection from Saudi citizens was contextually justified, these boundary conditions hinder the generalization of current findings. The Saudi Arabian economy is heavily dependent on the diverse expatriate workforce to fulfill the talent needs within SMEs. As local citizens and expatriate workers operate under different cultural points of reference, institutional motivations, and psychological contracts, they may rate sustainable leadership practices and leader-member exchange (LMX) dynamics differently. Therefore, future studies are recommended to expand the horizons of their sampling frame. It is also recommended to conduct multi-group cross-comparative analyses to explore whether cultural distance, psychological contract, or religion moderate the relationship between sustainable leadership, interpersonal emotion regulation, and employee innovative work behaviors. Fifthly, the study tested the mediating role of LMX in the relationship between SL and employee IWB. Future studies are recommended to consider other potential mechanisms in this relationship, such as expertise creation, information availability, or organizational trust. Finally, this study secured a high response rate (56.60%) with the help of local faculty members. Future studies are recommended to replicate the findings using secondary data or entirely automated data to rule out any localized field-worker presence and cope with any potential boundary constraints.

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