



# “SME innovation and employee creativity: The role of entrepreneurial leadership”

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<b>ARTICLE INFO</b>	Mohammad Naushad (2022). SME innovation and employee creativity: The role of entrepreneurial leadership. <i>Problems and Perspectives in Management</i> , 20(4), 560-572. doi: <a href="https://doi.org/10.21511/ppm.20(4).2022.42">10.21511/ppm.20(4).2022.42</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/ppm.20(4).2022.42">http://dx.doi.org/10.21511/ppm.20(4).2022.42</a>
<b>RELEASED ON</b>	Monday, 26 December 2022
<b>RECEIVED ON</b>	Tuesday, 18 October 2022
<b>ACCEPTED ON</b>	Tuesday, 13 December 2022
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<b>JOURNAL</b>	"Problems and Perspectives in Management"
<b>ISSN PRINT</b>	1727-7051
<b>ISSN ONLINE</b>	1810-5467
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

**62**



NUMBER OF FIGURES

**2**



NUMBER OF TABLES

**5**

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## BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10,  
Sumy, 40022, Ukraine  
[www.businessperspectives.org](http://www.businessperspectives.org)

**Received on:** 18<sup>th</sup> of October, 2022

**Accepted on:** 13<sup>th</sup> of December, 2022

**Published on:** 26<sup>th</sup> of December, 2022

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**Conflict of interest statement:**

Author(s) reported no conflict of interest

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# SME INNOVATION AND EMPLOYEE CREATIVITY: THE ROLE OF ENTREPRENEURIAL LEADERSHIP

## Abstract

Entrepreneurial leadership and innovation are needed for small and medium enterprises (SMEs) to survive and grow. Entrepreneurial leaders must unlock and use their employees' creativity to innovate. Moreover, they should foster creativity, risk-taking, and teamwork to secure business growth and success. Therefore, this study analyzes the link between entrepreneurial leadership, creativity, and innovation among SMEs. The aim is to identify the traits that lead to entrepreneurial leadership which helps in fostering creativity and innovation among SMEs in Saudi Arabia.

The study is based on primary data from employees, managers, and owners of SMEs in the capital region of the Kingdom of Saudi Arabia. Two hundred and eighty-one responses were collected. However, only two hundred and forty-eight responses were left for the final analysis. The results of the study indicate that entrepreneurial leadership positively influences organizational innovation and employee creativity among SMEs, where the coefficient was found to be significant. Next, no mediation relationships involving creativity were noted between entrepreneurial leadership and organizational innovation. However, entrepreneurial leadership has been identified as a critical driver of innovation and employee creativity in SMEs. Furthermore, the study suggests that SMEs need to foster a culture of innovation to unleash employee creativity. Finally, the study can have important implications for practitioners and academic scholars.

## Keywords

SMEs, innovation, creativity, entrepreneurial leadership, Saudi Arabia

## JEL Classification

M10, M12, M13, O30

## INTRODUCTION

SMEs are the backbone of every economy, and their success depends on innovation and creativity (Eggers, 2020). Employees are the driving force behind these SMEs, and it is essential that they feel empowered to be creative and innovative (Mazzei et al., 2016). This is where entrepreneurial leadership comes in. Entrepreneurial leaders create an environment where employees can thrive, providing the necessary support to experiment and take risks (Mokhber et al., 2016; Naushad, 2021). Moreover, entrepreneurial leaders always strive for novel prospects and yield calculated risks to achieve their goals (Harrison et al., 2016; Kuratko, 2007). As a result, SMEs that embrace entrepreneurial leadership are more likely to be successful, create value for their employees, and foster a culture of innovation and creativity, giving them a competitive advantage (Hunter & Lean, 2014; Naushad, 2021; Sari & Ahmad, 2022).

In recent years, there has been a growing body of evidence to suggest that SMEs are more innovative than large businesses (Cai et al., 2019; Chen, 2007). This is due to several factors: SMEs are more agile and adaptable and tend to have a more entrepreneurial culture (Chan et

al., 2019). In addition, employee creativity is more highly prized in SMEs. SMEs also have the potential to create new jobs and spur economic growth. However, SMEs are often more unlikely to invest in employee training and development than larger firms. Finally, SMEs provide an essential source of entrepreneurial leadership. In many cases, SME owners are entrepreneurs who bring new ideas and energy to their businesses (Naushad, 2021). As a result, they can be instrumental in driving innovation and creativity within their organizations.

Bagheri et al. (2022a), Sarwoko (2020), Wibowo and Saptono (2018), Hoang et al. (2022), and Bagheri et al. (2022b) tried to apprehend the nexus between entrepreneurial leadership, innovation, and creativity across various contexts, datasets, and populations. While there is evidence that employee creativity is associated with SME innovation, no large-scale studies have examined this relationship. However, several questions need to be answered, such as whether employee creativity is necessary for SME innovation and, if so, what factors contribute to it. This is a significant gap due to the need for more data on entrepreneurial leadership in SMEs. However, Bagheri et al. (2022b) and Koryak et al. (2015) analyzed this issue but tended to focus on specific sectors or regions.

Therefore, the current study aims to understand entrepreneurial leadership role in driving innovation, fostering creativity among SMEs. Therefore, to do so the study assesses the effect of entrepreneurial leadership on employee creativity and the innovation performance of SMEs. The main objectives of this study are:

- 1) To draw a causative link between EL and employee creativity in SMEs.
- 2) To discover factors contributing to entrepreneurial leadership in SMEs.
- 3) To investigate the influence of entrepreneurial leadership on employee innovation.
- 4) To project the opportunities for innovation, creativity, entrepreneurial leadership, and the performance of SMEs in Saudi Arabia.

This study will help to understand how entrepreneurial leadership can inspire innovation and employee creativity in SMEs. Given the prominence of innovation and creativity for SMEs, this paper will provide valuable insights for SME owners, managers, and policy-makers.

## 1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Entrepreneurial leadership (EL) is usually considered the amalgamation of entrepreneurial and leadership characteristics of a leader (Harrison et al., 2016). It is characterized by “the capacity to encourage people to manage resources strategically, stressing both opportunity and advantage seeking” (Ireland et al., 2003). EL requires both an entrepreneurial capacity for identifying opportunities for change and a leadership capacity for motivating others and mobilizing resources to effect change (Renko et al., 2015). Thus, entrepreneurial leaders can explore their environment, identify exploitable opportunities, and motivate others to actively participate in the value-creation pro-

cess (Fontana & Musa, 2017; Soomro et al., 2019). Entrepreneurial leaders’ primary objective is to inspire an individual or group to generate novel, creative, and valuable ideas and take calculated risks (Chen, 2007; Harrison et al., 2016). This boosts employees’ motivation, enabling them to form strong bonds with their leaders and learn critical skills from them (Isaksen & Akkermans, 2011). Employees motivated by their boss’s behavior are more likely to propose novel work environment changes and solutions to problems (Bagheri et al., 2022a; Fontana & Musa, 2017).

### 1.1. Entrepreneurial leadership and organizational innovation

Entrepreneurial leadership is essential for organizational innovation (Freeman & Siegfried, 2015; Huang et al., 2014). This is because innovation requires

bringing new ideas to the table and thinking outside the box (Anderson et al., 2014). Entrepreneurial leaders are unafraid of taking risks and constantly seek ways to improve (Hejazi et al., 2012). In addition, they are excellent at problem-solving and have a strong vision for their organization (Cogliser & Brigham, 2004). As a result, they can create an environment conducive to innovation (Bagheri et al., 2022a; Naushad & Sulphrey, 2020). Furthermore, entrepreneurial leaders are excellent at mobilizing resources and rallying employees behind a shared goal. This allows organizations to achieve their full potential and attain breakthrough innovations.

Organizational innovation is the product of employees' innovative work behavior (Shanker et al., 2017). Innovative work behavior refers to employees engaging in new ways of thinking and acting that create value for their organization (De Jong & Den Hartog, 2010; Sulphrey & Naushad, 2019). This includes developing new products or services, improving processes, or finding new ways to interact with customers (De Jong & Den Hartog, 2010; Sulphrey & Naushad, 2019). On the other hand, organizational innovation is the implementation of new ideas or approaches within an organization (Lowman et al., 2012). For example, this could involve changes in how products are designed or manufactured, introducing new business models, or developing new organizational structures.

Bagheri et al. (2022b), Bagheri et al. (2022a), Li et al. (2020), Mehmood et al. (2019), Mokhber et al. (2016), Hu et al. (2014), Huang et al. (2014), and Park et al. (2014) discovered a correlation between EL and organizational innovation. However, organizational innovation's concepts here are conceived with diverse meanings. It deviates from innovative work behavior, exploratory and exploitative innovations, and team innovations behavior. The umbrella concepts of organizational innovation cover it in comprehensive and totality. Thus, it is evident that entrepreneurial leadership is crucial for driving organizational innovation.

## 1.2. Entrepreneurial leadership and employee creativity

Employee creativity is crucial for any organization wishing to stay ahead of the curve (Anderson et al., 2014). Employee creativity entails the involvement

of individual employees in creating new and valuable ideas, products, processes, and values (Cai et al., 2019). Creativity is "the cognitive and behavioral processes applied when attempting to generate novel ideas" (Hughes et al., 2018). However, harnessing employee creativity can be challenging. Traditional hierarchical structures often stifle creativity, as employees are reluctant to speak up or challenge the status quo (Mascitelli, 2000). In contrast, entrepreneurial leadership styles are far more likely to foster an environment where creativity can flourish (Cai et al., 2019). Newman et al. (2018) found that employees are more creative when working under strong entrepreneurial leadership in a team.

Similarly, Islam and Asad (2021) found that entrepreneurial leaders significantly impact employee creativity. Cai et al. (2019) revealed that EL positively relates to employees and team creativity. Moreover, this relationship is mediated by employees' self-efficacy and team creativity. Mehmood et al. (2020) concluded that EL influences employee creativity, and this relationship is mediated by knowledge sharing. Similarly, Koh et al. (2019), Mehmood et al. (2021), Ribeiro et al. (2020), and Shafique et al. (2020) found that leadership influences creativity. However, a few studies revealed strong correlations or, indeed, no correlations between EL and employee creativity. For example, Aristana et al. (2022) did not note any significant positive impact of entrepreneurial leadership on employee creativity. Unfortunately, such studies are scarce in number. Moreover, studies drawing an impact in the SME context are scarce.

## 1.3. Entrepreneurial leadership, employee creativity, and organizational innovation

Employee creativity is one of the most critical aspects of EL (Bagheri et al., 2022a). Employee creativity refers to the ability of employees to come up with new and innovative ideas that can help improve the business (Anderson et al., 2014). Without employee creativity, businesses would quickly become stale and outdated (Lee et al., 2020). EL encourages and empowers employees to be creative (Naushad, 2021). This means creating an environment where employees feel comfortable taking risks and exploring new ideas (Lee et

al., 2020; Naushad & Sulphay, 2020; Renko et al., 2015). It also means giving employees the necessary resources to bring their ideas to life. When entrepreneurial leaders encourage employee creativity, they open up a world of possibilities for their businesses. However, by encouraging employees to think outside the box, companies can ensure that they remain at the forefront of innovation. Therefore, at first glance, it seems that creativity mediates between entrepreneurial leadership and innovation.

The literature explored the mediating role of various factors between EL and innovations. For example, Akbari et al. (2021) found that EL affects innovative work behavior among ICT SMEs. Furthermore, employees' creative self-efficacy and leadership support for innovation mediate this relationship. Similarly, Bagheri et al. (2022a) support the notion of individual and team's creative self-efficacy. Iqbal et al. (2020) added creative self-efficacy, affective commitment, and psychological safety as mediators for predicting organizational performance. The study concludes that EL, in combination with other variables, helps employees demonstrate innovative behavior, resulting in enhanced innovation performance at the organizational level. Moreover, Li et al. (2020), Mokhber et al. (2016), and Nguyen et al. (2021) took a range of indicators to understand the mediated mechanism of EL and innovation. On the other hand, Akbari et al. (2021), Bagheri et al. (2022a), and Cai et al. (2019) illustrate the direct mediation effect of creativity between EL and organizational innovation.

#### 1.4. Entrepreneurial leadership, employee creativity, organizational innovation, and SMEs

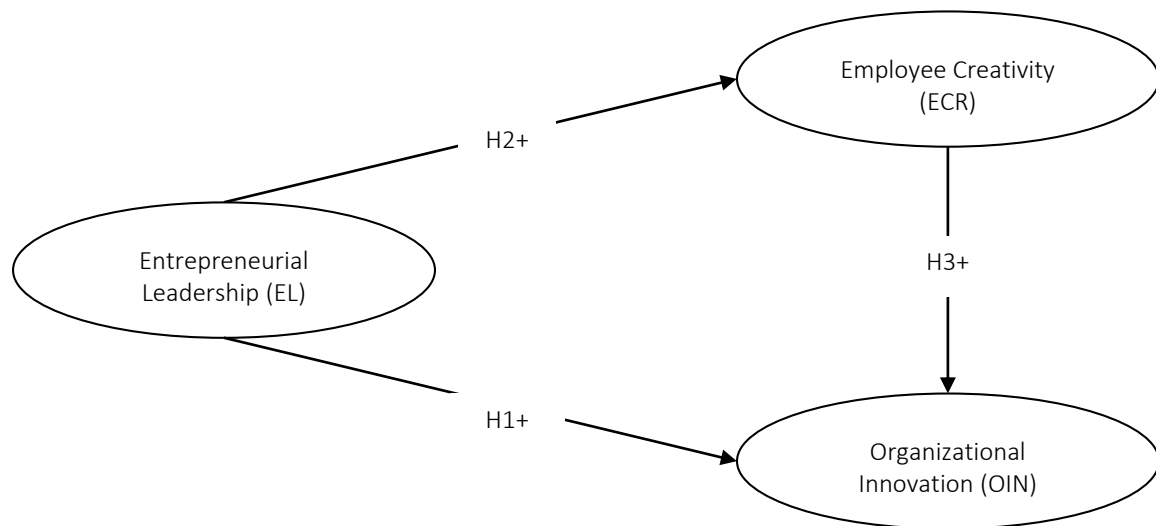
EL is a crucial success factor for SMEs (Koryak et al., 2015). Unlike large corporations, which tend to be risk-averse and slow to innovate, SMEs must be nimble and proactive to survive and thrive. As such, entrepreneurial leadership is critical for driving innovation and creativity within SMEs. Entrepreneurial leaders are typically highly proactive, results-oriented, and passionate about their work. It refers to a leadership style associated with innovation and creativity and often

takes place in SMEs. They possess a strong vision for their business and can inspire others to buy into it. In addition, they are willing to take risks and embrace change. As the world becomes more globalized and competitive, entrepreneurial leadership will become increasingly important for SMEs. This sort of leadership can be beneficial in stimulating growth and guaranteeing the long-term viability of SMEs. Entrepreneurial leaders often profoundly understand their customers and needs and can adapt quickly to changing market conditions. They are also able to motivate and inspire others to achieve common goals. In short, EL can be an essential driver of innovation and growth in SMEs. EL is a term that is often used interchangeably with innovation and creativity. However, there is a distinct difference between the two concepts. Entrepreneurial leadership involves using creative abilities to identify and solve problems. Innovation, on the other hand, refers to implementing new ideas. The ability to develop fresh ideas is creativity. To be an effective entrepreneur, one must possess all three of these competencies.

Therefore, from the above discussion, (1) most of the studies are in the contextual forum; (2) entrepreneurial leadership has been measured by applying the cursory questionnaire, and no comprehensive questionnaire has been utilized; and (3) no study has been cited in the Saudi context.

Therefore, in the current study, these three constructs are combined against the backdrop of SMEs in one of the crucial developing economies, i.e., Saudi Arabia, which has a very ambitious vision of diversification from an oil economy to a non-oil-dependent economy. In this journey, SMEs, organizational innovation, creativity, and centrally entrepreneurial leadership will play a pivotal role. Figure 1 depicts the proposed hypothesized model of the current study. The following hypotheses are tested to support the objectives of this study:

- H1: Entrepreneurial leadership has a positive and significant impact on organizational innovation.*
- H2: Entrepreneurial leadership has a positive and significant impact on employee creativity.*



**Figure 1.** Proposed hypothesized model

*H3: Employee creativity mediates the relationship between entrepreneurial leadership and organizational innovation.*

## 2. METHODOLOGY

The current study is based on a primary survey (Table A1). The data were obtained from employees, managers, and SME owners from the Riyadh region of Saudi Arabia. The survey instruments used for the study were adopted from various sources. The EL questionnaire was adopted from Gupta et al. (2004), considered the most comprehensive instrument for entrepreneurial leadership, and consists of twenty-five items with five sub-constructs. The instrument measuring employee creativity was adopted from Farmer et al. (2003). Furthermore, the last construct measuring organizational innovation was taken from Paudel (2019), consisting of ten items.

The questionnaire was designed as per the Likert scale. The scale varies from one to seven, where 1 indicates “disagree strongly” and 7 “agree strongly.” There were overall two hundred and eighty-one responses collected. The data were cleaned from missing data and outliers. Therefore, in the end, only two hundred and forty-eight responses were left for final analysis. The data were analyzed using SmartPLS software. The research model was examined using PLS-SEM, a variance-based approach (Hair et al., 2016). However, the basic checks and balances were established before delving into the study’s analytical process, e.g., data

exploration, cleaning, and exploratory factor analysis. In order to further analyze and report results, the most recent guidelines were consulted, and the most recent version of SmartPLS V.4 was utilized.

Moreover, to set the analysis and meet the factorial requirements, some items were eliminated from the EL constructs. First, the items with a threshold limit of less than 0.70 were eliminated. In this way, from the EL constructs, item numbers 1, 4, 6, 9, 10, 11, 12, 20, 21, 22, 23, 24, and 25 were eliminated as these items were either below the threshold limit or crossed loaded heavily to other constructs. In the final analysis, only 12 items were left out of 25. However, other items loaded successfully with a high threshold limit to their respective constructs. Therefore, other items were in their present number and remained untouched.

## 3. RESULTS

### 3.1. Assessment of measurement model

The initial step in a PLS-SEM analysis is evaluating the measurement model. The objective is to ensure that the structural path model considers only constructs with adequate validity and reliability. This step assessed the internal consistency, indicator reliability, and convergent and discriminant validity (Iqbal et al., 2022; Hair et al., 2016). The assessment of the measurement model begins with testing for convergent validity using factor

loadings, composite reliability (CR), Cronbach's alpha, and extracted average variance (AVE). The variance inflation factor (VIF) is also taken into account. Table 1 displays the outcomes for these variables. According to Table 1, all of the factors loaded successfully into their respective constructs. All factors exceeding 0.70 were kept, while those below 0.70 were eliminated. Notably, EL factors exhibit some elimination, whereas, for other constructs, all factors loaded successfully with a value significantly above the threshold limit. The alpha value of the constructs is significantly higher than the threshold, indicating that they are reliable. The CR value, which indicates the extent to which the construct indicators indicate the latent construct, exceeded the recommended value of 0.7, as did the AVE, which reflects the total amount of variance in the indicators that can be attributed to the latent construct (Hair et al., 2013).

The next step consisted of evaluating the discriminant validity, which refers to the extent to which the measurements do not reflect other factors. Recently, two criteria have been proposed for determining discriminant validity. First, the criteria of Fornell and Larcker, which reflect modest correlations between the measure of interest and other variables, advocate employing a single measure (Fornell & Larcker, 1981). Table 2 shows that each construct's AVE (diagonal values) square root is greater than their respective correlation coefficients, demonstrating discriminant validity (Fornell & Larcker, 1981). The second criterion is the heterotrait-monotrait (HTMT) ratio, which states that the values for each construct cannot exceed 0.85, the HTMT ratio (Kline, 2006). If it exceeds the threshold for discriminant validity, there may be a problem. In this paper, all values fall well below the

**Table 1.** Construct reliability and validity

Constructs	Items	Loadings	VIF	Cronbach's alpha ( $\alpha$ )	CR	AVE
Entrepreneurial Leadership (EL)	EL2	0.828	2.995	0.794	0.795	0.617
	EL3	0.795	2.559			
	EL5	0.744	2.239			
	EL8	0.756	2.544			
	EL11	0.771	2.761			
	EL12	0.770	2.648			
	EL13	0.792	2.913			
	EL14	0.745	2.541			
	EL15	0.827	3.710			
	EL16	0.767	3.440			
	EL17	0.749	2.547			
	EL18	0.822	3.899			
	EL19	0.716	2.091			
	EL23	0.775	2.551			
EL24	0.773	2.676				
Employee Creativity (ECR)	ECR1	0.778	1.791	0.953	0.954	0.602
	ECR2	0.792	1.900			
	ECR3	0.808	1.676			
	ECR4	0.764	1.499			
Organizational Innovation (OIN)	OIN1	0.810	2.504	0.934	0.937	0.628
	OIN2	0.749	2.096			
	OIN3	0.766	2.102			
	OIN4	0.836	3.235			
	OIN5	0.864	4.035			
	OIN6	0.778	2.467			
	OIN7	0.719	1.961			
	OIN8	0.824	2.731			
	OIN9	0.767	2.329			
	OIN10	0.805	2.632			

Note: VIF = Variance Inflation factor, CR = Composite Reliability, AVE = Average Variance Extracted.

threshold limit (Table 3). Therefore, these findings demonstrate that the model is adequate for structural analysis.

**Table 2.** Discriminant validity (Fornell-Larcker criterion)

Constructs	ECR	EL	OIN
ECR	0.786	–	–
EL	0.370	0.776	–
OIN	0.344	0.598	0.793

Note: EL = Entrepreneurial Leadership, ECR = Employee Creativity, OIN = Organizational Innovation.

**Table 3.** Discriminant validity (heterotrait-monotrait ratio)

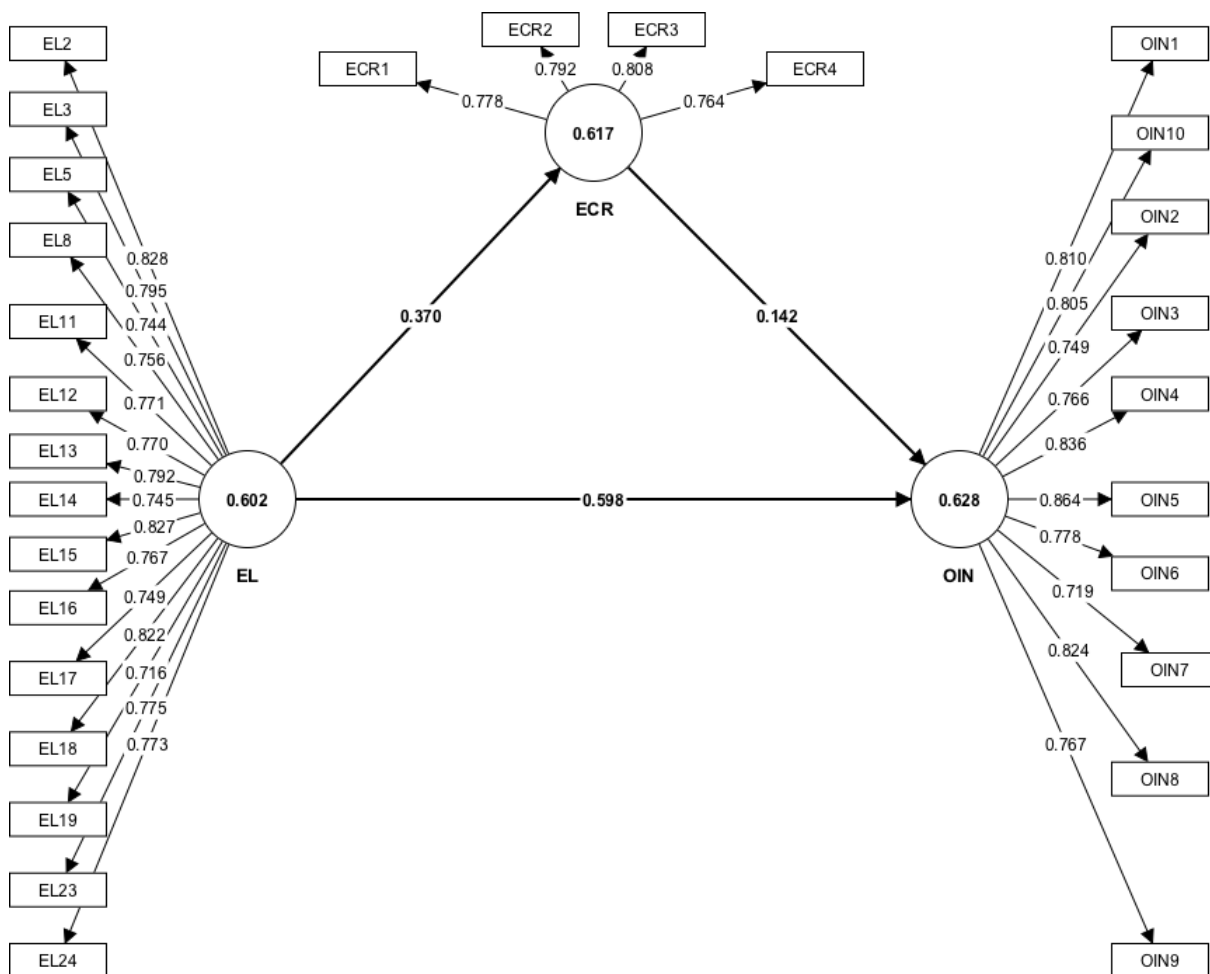
Constructs	ECR	EL	OIN
ECR	–	–	–
EL	0.413	–	–
OIN	0.404	0.618	–

Note: EL = Entrepreneurial Leadership, ECR = Employee Creativity, OIN = Organizational Innovation.

### 3.2. Assessment of structural model

The structural model corresponds to the hypothesized pathways in the research framework. The structural model evaluation aims to determine whether model paths are statistically significant. The study followed Hair et al.'s (2016) guidelines for structural model evaluation. Initially, the structural model was analyzed for potential collinearity affecting path coefficients. However, the VIF values for all predictor components are significantly lower than the recommended value of 5.0 (Hair et al., 2016). Therefore, the structural model has no collinearity problems.

Next, the paper evaluated the model's predictive accuracy using the coefficient of determination ( $R^2$ ) and its predictive relevance using the cross-validated redundancy index (Stone-Geisser's  $Q^2$ ). The proposed model for the study reflects a 59.8% ( $R^2 = 59.8$ ) variance in organizational in-



**Figure 2.** Final structural model



novation (OIN) due to entrepreneurial leadership (EL). At the same time, EL explains the 37.0% ( $R^2 = 37.0$ ) variance in employee creativity. However, employee creativity did not show sufficient predictive capacity. These results demonstrate the model's predictive capacity and accuracy (Hair et al., 2016). On the other hand,  $Q^2$  values for employee creativity and organizational innovation are 0.123 and 0.346, respectively, which are greater than 0.0 ( $Q^2 > 0$ ). Notably,  $Q^2$  is calculated only for the latent or endogenous variables only. Hence, the predictive relevance of the endogenous constructs in the model was established.

### 3.3. Path coefficients and mediation analysis

Lastly, the importance of the path coefficients was assessed. The study evaluated hypotheses utilizing the bootstrapping technique with 10,000 bootstrap samples, the no sign changes option, and 95% bias-corrected confidence intervals. The path analysis for the structural model is shown in Table 4 and Figure 2. *H1* predicts that EL is positively related to innovative work behavior among SME employees ( $\beta = 0.598$ ,  $t = 9.476$ ,  $p < 0.001$ ). Hence, *H1* is supported. The second hypothesis for the study measured whether EL positively relates to employee creativity ( $\beta = 0.370$ ,  $t = 7.254$ ,  $p < 0.001$ ). Therefore, *H2* is supported. Table 4 summarizes the outcomes of the hypotheses testing.

The secondary focus of this study was to assess the mediated effect of employee creativity on organizational innovation. This indicates whether entrepreneurial leadership influences organizational innovation by inculcating creativity among employees. As hypothesized in *H3*, entrepreneurial

leadership fosters employee creativity, resulting in innovative behavior. In this mediation analysis, the indirect influence of the independent variable on the dependent variable via the mediator is examined. The results revealed that employee creativity mediates the relationship between entrepreneurial leadership and innovative behavior in a profitable and meaningful way ( $\beta = 0.053$ ,  $t = 2.458$ ,  $p < 0.01$ ). Therefore, even though EL significantly directly affects innovative behavior, employee creativity is not mediated. Variance accounted for (VAF), which refers to indirect to total effect proportion, supports this result (Nitzl et al., 2016). The value for the VAF ratio in the current case is 8.86%, which indicates "no mediation" per Hair et al.'s (2016) criterion.

## 4. DISCUSSION

This study showed that SMEs are crucial to innovation and that EL is a significant driver of employee creativity. The analysis reaffirms the importance of EL in promoting innovation and creativity among SMEs. It was found that EL among SMEs is more likely to promote employee creativity through workplace practices such as knowledge sharing, job rotation, and autonomy. In addition, SMEs are more likely to develop entrepreneurial leadership practices that support innovation.

The findings indicate that all three hypotheses set for the study found significant support from the analysis results. *H1* indicates that EL significantly impacts the creativity and innovation culture within the employees and overall organization. This confirms the findings of Bagheri et al. (2022b), Mehmood et al. (2019), Mokhber et al.

**Table 4.** Mediation analysis

Effects	Path coefficients	t-values	p-values
<b>Direct Effects</b>			
ECR → OIN	0.142	2.643	0.008**
EL → ECR	0.370	7.254	0.000***
EL → OIN	0.598	9.476	0.000***
<b>Indirect Effects</b>			
EL → ECR → OIN	0.053	2.458	0.014**
<b>Total Effect</b>			
EL → OIN	0.598	11.586	0.000***

Note: EL = Entrepreneurial Leadership, ECR = Employee Creativity, OIN = Organizational Innovation; Significance level = \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .

(2016), and Huang et al. (2014) found in diverse backgrounds. The second hypothesis was also supported and found to be significant, which indicates that EL significantly affects employee creativity among SMEs. Thus, these results were found to be in line with Cai et al. (2019), Islam and Asad (2021), Mehmood et al. (2021), and Newman et al. (2018). The study's third and final hypothesis was whether creativity mediates the relationship between organizational innovation and entrepreneurial leadership. However, the mediation analysis for the study did not provide any significant

support. Therefore, these findings contrast Akbari et al. (2021), Bagheri et al. (2022a), and Cai et al. (2019). It may be due to some reasons, i.e., this study uses data from SMEs. SMEs, itself, focused on innovation. Their innovation drive depends not solely on human resources but their vision and mission. However, entrepreneurial leadership has positively affected creativity, and employee creativity influenced innovation. Nevertheless, as per the current study's findings, employee creativity did not mediate the relationship between EL and organizational innovation.

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## CONCLUSION

This study analyzed how entrepreneurial leadership can boost innovation and employee creativity in SMEs. The findings suggest that SMEs need to foster a culture of innovation to unleash employee creativity. In addition, entrepreneurial leadership is essential for SME success, as it can help to harness the power of employee creativity and drive innovation. Entrepreneurial leadership is essential in driving this culture of innovation, as it provides a vision and direction for the business. It also creates an environment where employees feel empowered to take risks and experiment.

These findings have important implications for SME managers, who need to create an environment that supports innovation and allows employees to be creative. With the right policies and procedures, SMEs can thrive and significantly contribute to the economy.

However, the study is not free from limitations. One of the limitations is that it only focused on SMEs. While SMEs are a critical part of the economy, other businesses drive innovation and creativity. Moreover, larger businesses also play a significant role in these areas. Therefore, this study does not provide a comprehensive picture of all businesses contributing to innovation and creativity. In addition, this limited scope means that the findings may not be generalizable to other SMEs in other countries.

Another limitation is that the study relied on self-reported data from SME owners and managers. As a result, the data may be biased or inaccurate due to self-reporting or memory recall bias. Finally, the study did not include a control group, so it is difficult to isolate the impact of the interventions on employee creativity and entrepreneurial leadership. Overall, these limitations highlight the need for further research on this topic. Despite these limitations, the study provides valuable insights into how SMEs can promote innovation and creativity among their employees.

## AUTHOR CONTRIBUTIONS

Conceptualization: Mohammad Naushad.

Data curation: Mohammad Naushad.

Formal analysis: Mohammad Naushad.

Funding acquisition: Mohammad Naushad.

Investigation: Mohammad Naushad.

Methodology: Mohammad Naushad.

Project administration: Mohammad Naushad.

Resources: Mohammad Naushad.

Software: Mohammad Naushad.

Supervision: Mohammad Naushad.  
 Validation: Mohammad Naushad.  
 Visualization: Mohammad Naushad.  
 Writing – original draft: Mohammad Naushad.  
 Writing – review & editing: Mohammad Naushad.

## ACKNOWLEDGMENT

This project was supported by the Deanship of Scientific Research at Prince Sattam Bin Abdulaziz University under the research project (PSAU-2022/01/20421).

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## APPENDIX A

**Table A1.** Questionnaire

SN	Items	Items Code	Status	Constructs
1	Our leader is sensitive to department employees' responsibilities.	EL1	Dropped	Entrepreneurial Leadership
2	Our leader holds department employees to high ethical standards.	EL2	-	
3	Our leader does what he promises.	EL3	-	
4	Our leader encourages us to express ideas or suggestions.	EL4	Dropped	
5	Our leader listens to our ideas and suggestions.	EL5	-	
6	Our leader listens to our suggestions to make decisions that affect us.	EL6	Dropped	
7	Our leader gives us opportunities to voice our opinions.	EL7	Dropped	
8	Our leader listens to our ideas when he disagrees with us.	EL8	-	
9	Our leader balances concerns for day-to-day details.	EL9	Dropped	
10	Our leader displays wide-ranging knowledge and interests.	EL10	Dropped	
11	Our leader makes me feel like I work with him, not for him.	EL11	-	
12	Our leader works hard to find ways to help.	EL12	-	
13	Our leader encourages employees to be involved.	EL13	-	
14	Our leader emphasizes the importance of giving.	EL14	-	
15	Our leader encourages us to express ideas or suggestions.	EL15	-	
16	Our leader listens to our ideas and suggestions.	EL16	-	
17	Our leader listens to our suggestions to make decisions that affect us.	EL17	-	
18	Our leader gives us opportunities to voice our opinions.	EL18	-	
19	Our leader listens to our ideas when he disagrees with us.	EL19	-	
20	Our leader makes decisions that are not based only on his or her ideas.	EL20	Dropped	
21	Our leader conducts his personal life.	EL21	Dropped	
22	Our leader discusses business ethics or values with us.	EL22	Dropped	
23	Our leader sets an example of how to do things.	EL23	-	
24	Our leader defines success by more than results.	EL24	-	
25	When our leader makes a decision, he asks me, "What is the right decision?"	EL25	Dropped	
26	I try new ideas or methods first.	ECR1	-	Employee Creativity
27	I seek new ideas and ways to solve problems.	ECR2	-	
28	I generate ground-breaking ideas related to the field.	ECR3	-	
29	I can be considered a good role model for creativity.	ECR4	-	
30	Our firm frequently tries out new ideas.	OIN1	-	Organizational Innovation
31	Our firm introduces several new products, services, processes, or organization/management systems.	OIN2	-	
32	Our firm is the first to market new products or services.	OIN3	-	
33	Our management seeks out new ways to do things.	OIN4	-	
34	Our firm is creative in its methods of operation.	OIN5	-	
35	Our firm uses up-to-date technologies.	OIN6	-	
36	Our firm develops new market segments.	OIN7	-	
37	Our firm uses new marketing methods.	OIN8	-	
38	Our firm develops new ways of establishing relationships with customers.	OIN9	-	
39	Our firm spends resources on research and development for new products, services, or processes.	OIN10	-	