

# How Do Professional Self-Efficacy and Entrepreneurial Leadership Foster Internal Auditors' Creativity? The Moderating Influence of Job Satisfaction

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**Abstract:** This study aims to examine the influence of professional self-efficacy and entrepreneurial leadership on internal auditors' creativity. The study further examined job satisfaction as a moderator variable. The data was collected from 83 Heads of internal audit units in Jordanian-listed companies. The Partial Least Square was used to analyse the collected data. The finding shows that professional self-efficacy has a positive influence on internal auditors' creativity, but entrepreneurial leadership does not. Meanwhile, job satisfaction moderated the impact of professional self-efficacy and entrepreneurial leadership on the internal auditors' creativity. The authors used a cross-sectional design to collect data that may restrict causality. Still, the study suggests Jordanian-listed companies hiring internal auditors with professional self-efficacy would further encourage creativity. In addition, develop and implement entrepreneurial skills that foster internal auditors' creativity.

**Keywords—**professional self-efficacy; moderating effect of job satisfaction; entrepreneurial leadership; internal auditors' creativity; Jordanian-listed companies.

## 1. INTRODUCTION

Creativity is the ability to generate new, original, and valuable ideas, solutions, or products [1, 35]. It is a fundamental human trait that drives innovation and progress across various fields, from art and science to business and technology [2, 36]. Creativity involves thinking beyond conventional boundaries, challenging existing norms, and finding novel approaches to problems [33, 3]. It can manifest in many forms, including artistic expression, problem-solving, and the development of new processes or technologies [4, 34, 24]. At its core, creativity is fueled by imagination, curiosity, and a willingness to take risks. It often involves connecting seemingly unrelated concepts, allowing individuals to see possibilities where others might not [21]. While some view creativity as an innate trait, many experts believe it can be cultivated through practice, open-mindedness, and exposure to diverse experiences [13].

In internal audit settings, internal auditors' creativity refers to their ability to think innovatively and apply original approaches to auditing processes, problem-solving, and decision-making [8]. While internal auditing is traditionally seen as a highly structured and procedural profession, creativity is essential in enhancing audit effectiveness and adding value to organizations [20]. Auditors must often go beyond standard checklists and routines to identify potential risks, inefficiencies, and areas for improvement that might not be immediately apparent. This requires creative thinking, especially in complex or rapidly changing environments [21]. Further, creativity in internal auditing can involve developing new audit techniques, finding innovative solutions to

compliance issues, or using emerging technologies like data analytics and artificial intelligence to enhance audit processes [19].

By being creative, auditors can improve the depth and quality of their assessments, uncover hidden issues, and recommend more effective solutions to management [34]. Moreover, fostering creativity within internal audit teams can lead to more proactive risk management and better alignment with organizational goals. When internal auditors are encouraged to think creatively, they can drive continuous improvement and innovation within their departments, ensuring that auditing practices stay relevant in an increasingly complex and dynamic business environment.

However, internal auditors to be creative in their work it is imperative to get the professional self-efficacy. That to say high levels of self-efficacy instill the confidence to approach complex problems creatively. Auditors who trust in their skills and expertise are more likely to step outside conventional methods, use critical thinking, and develop unique solutions to audit challenges. This self-assurance motivates them to explore new auditing tools, techniques, or approaches, such as leveraging technology for more comprehensive risk assessments or applying innovative problem-solving strategies. Besides, the surrounded entrepreneurial environment of internal auditors is also imperative to be creative. Leaders with an entrepreneurial mindset encourage their teams to think creatively, challenge traditional practices, and embrace change. In the context of internal auditing, entrepreneurial leadership promotes an environment where auditors feel empowered to innovate and seek improvements in audit processes.

Therefore, Professional self-efficacy and entrepreneurial leadership play significant roles in fostering creativity among internal auditors by empowering them to think independently, take initiative, and explore innovative solutions within their auditing practices. When combined, professional self-efficacy and entrepreneurial leadership create a powerful dynamic that nurtures creativity in internal auditors. Auditors with high self-efficacy are more willing to embrace the opportunities provided by entrepreneurial leaders, pushing them to take calculated risks and innovate in their work. This combination leads to greater autonomy, confidence, and motivation, which are key drivers of creative thinking [27]. Hence, professional self-efficacy gives internal auditors the confidence to innovate, while entrepreneurial leadership provides the support and encouragement necessary to foster a creative work environment. Together, they enable auditors to go beyond standard procedures and contribute to more dynamic, value-driven internal audit functions.

Meanwhile, when internal auditors are satisfied with their jobs, their creativity is amplified, leading to greater innovation and improved audit outcomes [28]. Conversely, low job satisfaction can be reducing auditors' motivation to think creatively or embrace innovative practices. Further, job satisfaction reflects how positively employees feel about their work, environment, and overall job experience [42]. When internal auditors experience high job satisfaction, they are more engaged, motivated, and willing to go beyond basic job requirements. This creates an ideal condition for professional self-efficacy and entrepreneurial leadership to positively influence creativity.

In the context of this study, Jordanian listed companies operate in a dynamic business environment with unique cultural, regulatory, and market characteristics [13]. The internal audit function in these companies is critical for ensuring compliance, risk management, and financial integrity [6]. As these companies increasingly seek to adopt innovative practices to remain competitive, fostering creativity within internal audit teams becomes essential. Also, in Jordanian listed companies, job satisfaction could play a pivotal moderating role in the relationship between professional self-efficacy, entrepreneurial leadership, and creativity among internal auditors. High job satisfaction amplifies the positive effects of self-efficacy and entrepreneurial leadership, fostering a culture of innovation and creativity within audit teams. Conversely, low job satisfaction weakens this relationship, reducing auditors' motivation to think creatively or embrace leadership initiatives [42]. To enhance creativity in internal audit functions, Jordanian companies must focus on improving job satisfaction through supportive leadership, growth opportunities, and recognition, ensuring that auditors feel valued and motivated to contribute creatively. Therefore, this study proposed that the job satisfaction moderate the influence of professional self-efficacy and entrepreneurial leadership on creativity among internal auditors in Jordanian-listed companies.

The reasons behind conducting this study are most previous research on creativity has been conducted in the context of developed countries, and to the best of the researchers' knowledge [13, 24], no study has examined the combined effect of professional self-efficacy and entrepreneurial leadership on creativity among internal auditors, particularly within in Jordanian-listed companies. Additionally, previous studies have largely overlooked the role of job satisfaction as a moderator in the internal auditors' creativity field [16, 24]. Therefore, this study makes important contributions to Jordanian-listed companies. Firstly, while the majority of creativity research "focuses on developed countries, this study investigates key factors within a developing country, specifically" Jordan. "Secondly, it offers empirical evidence highlighting the significance of professional self-efficacy and entrepreneurial leadership" in fostering internal auditors' creativity at Jordanian-listed companies. Thirdly, this paper is the first to examine the moderating effect of job satisfaction on the relationship between the respective variable within Jordanian-listed companies. Lastly Understanding these factors is crucial for decision makers and regulatory bodies.

## 2. HYPOTHESES DEVELOPMENT AND RESEARCH MODEL

### 2.1 Professional Self-Efficacy and Internal Auditors' Creativity

Internal auditors' creativity refers to their ability to apply innovative thinking and develop novel approaches in performing audit tasks, identifying risks, and improving organizational processes [31]. Creativity in internal auditing involves more than just following established procedures; it requires auditors to think outside the box, explore new technologies, and adapt to changing regulatory and business environments [13]. Auditors who are creative can identify previously overlooked risks, propose innovative solutions, and improve audit methodologies by leveraging data analytics, artificial intelligence, or other emerging tools [24]. This innovative approach not only improves the quality of audits but also strengthens the organization's ability to navigate uncertainty and complex challenges [33].

Meanwhile, internal auditors with high self-efficacy are more likely to take initiative, challenge conventional methods, and apply their expertise in novel ways. Their belief in their capabilities motivates them to seek out new auditing techniques, such as using data analytics or advanced technologies, and to think critically about how to improve audit processes [31]. This willingness to engage in creative problem-solving not only enhances audit quality but also helps auditors to identify risks and inefficiencies that might otherwise go unnoticed [39]. Additionally, Akbari et al. [1] discovered that employees' creative self-efficacy positively affects the "innovative work behavior of employees in information and communications technology" SMEs. Moreover, professional self-efficacy enables internal auditors to navigate challenges with resilience, which is crucial in dynamic business environments [17, 24]. As auditing tasks

become increasingly complex and expectations for added value grow, auditors with a strong sense of self-efficacy are better equipped to handle uncertainty and adapt creatively to changing regulations and organizational needs [17, 13]. In this way, self-efficacy serves as a foundation for creative thinking, driving innovation and enhancing the overall effectiveness of internal auditing functions [24]. Hence, in the context of this study, it is proposed that the internal auditors' creativity in the Jordanian listed companies increased when they have a high level of professional self-efficacy. This leads to the next hypothesis: H1. *The internal auditors' creativity in the Jordanian-listed companies is influenced positively by professional self-efficacy.*

## 2.2 Entrepreneurial Leadership and Internal Auditors' Creativity

Entrepreneurial leadership is a dynamic leadership style that combines the qualities of traditional leadership with an entrepreneurial mindset, characterized by innovation, risk-taking, and opportunity recognition [23, 25]. Leaders who adopt this approach are proactive in driving change, fostering creativity, and encouraging innovation within their teams or organizations [26]. Unlike conventional leadership, which may prioritize stability and efficiency, entrepreneurial leadership focuses on exploring new possibilities, challenging the status quo, and navigating uncertainty with confidence [4, 7]. Further, Islam and Asad [23] suggested that entrepreneurial leaders are known for their creative and innovative abilities, therefore, such leaders drive the process of creativity.

However, entrepreneurial leadership has a profound impact on internal auditors' creativity, driving innovation and fostering a culture where auditors feel empowered to think beyond traditional boundaries [44]. Entrepreneurial leaders encourage experimentation, risk-taking, and proactive problem-solving, which are essential traits for promoting creativity in the internal audit function [2].

In contrast to conventional leadership, which often focuses on maintaining established processes, entrepreneurial leadership emphasizes continuous improvement, adaptability, and exploration of new ideas [4]. Under entrepreneurial leadership, internal auditors are more likely to embrace innovative audit techniques, explore emerging technologies such as data analytics and artificial intelligence, and identify novel solutions to complex organizational challenges [22, 24]. Leaders with an entrepreneurial mindset actively encourage their teams to think creatively, challenge the status quo, and look for opportunities to improve audit practices, risk management processes, and overall organizational performance [4, 44]. Thus, this study proposes that the internal auditors' creativity in the Jordanian listed companies increased when they working under a high level of entrepreneurial leadership. This leads to the next hypothesis: H1. *The internal auditors' creativity in the Jordanian-listed companies is influenced positively by entrepreneurial leadership.*

## 2.3 Moderating influence of Job Satisfaction

Job satisfaction reflects an individual's response to their work environment [11], and according to social exchange theory, satisfied employees are more likely to contribute positively to their organizations [13, 37]. Consequently, job satisfaction can influence employee behaviors related to organizational citizenship, turnover, and loyalty [43]. Since job satisfaction is a positive factor in the workplace, it can help reduce the stress associated with finding creativity solutions and is considered crucial in promoting creativity behavior among academic staff [5, 19].

However, job satisfaction plays a critical moderating role in influencing how professional self-efficacy and entrepreneurial leadership impact creativity among internal auditors in Jordanian-listed companies [38]. In an environment where job satisfaction is high, internal auditors are more motivated, engaged, and likely to leverage their self-efficacy and respond positively to entrepreneurial leadership, which enhances their creative capabilities. Conversely, when job satisfaction is low, even highly skilled auditors or those led by entrepreneurial leaders may struggle to apply creative thinking or embrace innovative practices.

Professional self-efficacy refers to an auditor's belief in their ability to perform tasks effectively, while entrepreneurial leadership encourages innovation and risk-taking. Both factors are key drivers of creativity, allowing auditors to think outside conventional frameworks, develop novel solutions, and improve audit processes [10, 41]. However, job satisfaction is what determines the degree to which these factors translate into actual creative behaviors. Satisfied auditors are more likely to apply their self-efficacy and align with the innovative direction set by entrepreneurial leaders, thereby fostering a culture of creativity and innovation within the audit function.

In Jordanian-listed companies, where internal auditors play a crucial role in compliance, risk management, and value creation, job satisfaction becomes even more essential [8]. A positive work environment with opportunities for growth and recognition not only enhances auditors' motivation but also amplifies the influence of self-efficacy and entrepreneurial leadership on their creativity. So, understanding and enhancing job satisfaction is crucial for organizations aiming to drive creativity in their internal audit teams and improve overall audit effectiveness. This leads to the following hypotheses:

H3a: *The influence of professional self-efficacy on the internal auditors' creativity in Jordanian-listed companies are moderates by the job satisfaction.*

H3b: *The influence of entrepreneurial leadership on internal auditors' creativity in Jordanian-listed companies is moderates by the job satisfaction.*

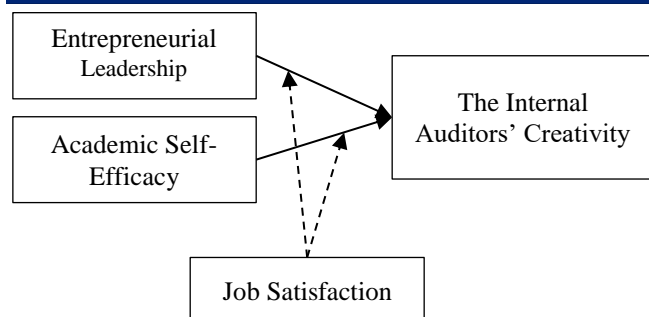


Fig. 1. Research Model

### 3. RESEARCH DESIGN

The current study focused on the influence of entrepreneurial leadership and professional self-efficacy on the internal auditors' creativity in Jordanian-listed companies, with the moderating influence of job satisfaction. The head of internal audit units were selected as the target sample due to their relevance as respondents for the survey, as they most relevant to answer on the survey. An online survey was distributed to the 174 internal audit managers. The questionnaire consisted of two sections. The first section asked participants about their demographic characteristics (such as gender, age, and work experience), while the second section required them to respond using a five-point Likert scale. Of the 174 questionnaires distributed, 83 were completed, yielding a response rate of 47.7%. The majority of respondents were male (N = 61, 73%), aged between 40 and 50 years (N = 55, 83%), and had 10–20 years of work experience (N = 57, 68.7%).

### 4. DATA ANALYSIS AND RESEARCH FINDINGS

This study is an attempt to examine the influence of entrepreneurial leadership and professional self-efficacy on the internal auditors' creativity in Jordanian-listed companies, under the moderating influence of job satisfaction. The study collected data from the head of internal audit units within Jordanian-listed companies. The study applied Smart-PLS.4 analysis in two stages with maximum likelihood [13, 14, 24, 30]. This study employed Smart-PLS.4 software to validate the study variables and test the hypotheses. Smart-PLS was chosen for its capability to handle reflective designs and complex models (including interaction effects) even with a small sample size [14, 18, 29].

Regarding the measurement model (as illustrated in Table 1), the outer loadings for all indicators exceed the expected threshold of 0.7, and the Composite Reliability (CR) test indicates that all study variables surpass the expected value of 0.7. The validity of the tool was confirmed by assessing both discriminant and convergent validity [18]. Additionally, the average variance extracted (AVE) serves as the criterion for testing convergent validity, aiming to measure the amount of

variance shared by the indicators with their respective variables [58]. The average variance extracted (AVE) values for all variables are above 0.5. Additionally, to assess how much a specific variable in the current study model differs from others, discriminant validity was evaluated [18]. As shown in Table 1, all AVE values exceeded the specified threshold, confirming discriminant validity [18]. Furthermore, Hair et al. [18] state that multicollinearity is not a concern when the Variance Inflation Factor (VIF) is below five. The results presented in Table 1 “indicate that there was no multicollinearity among the latent” variables. Therefore, based on the findings, it can be concluded that the measurement model is both valid and reliable. Thus, this measurement model is deemed suitable for further analysis.

Table 1: Measurement model results

Constructs Name	Item Name	Item Loading	CR	AVE	VIF
<b>Internal Auditors' Creativity (IAC)</b>	IAC 1	0.854	0.86	0.595	1.84
	IAC 2	0.745			
	IAC 3	0.840			
	IAC 4	0.852			
<b>Entrepreneurial Leadership (EL)</b>	EL1	0.726	0.84	0.64	1.21
	EL2	0.818			
	EL3	0.820			
	EL4	0.782			
	EL5	0.884			
<b>Professional Self-Efficacy (ASE)</b>	FSE1	0.734	0.80	0.60	1.82
	FSE2	0.764			
	FSE3	0.783			
	FSE4	0.782			
	ASE5	0.836			
<b>Job Satisfaction (JS)</b>	JS1	0.817	0.84	0.65	2.26
	JS2	0.831			
	JS3	0.823			
	JS4	0.827			
	JS5	0.857			

A primary goal of this study is to assess examine the influence of entrepreneurial leadership and professional self-efficacy on the internal auditors' creativity in Jordanian-listed companies, while also examining the influence of the job satisfaction as a moderator. The influence of the independent variables on the dependent variable and may differ if the model incorporates a moderating effect [18]. Therefore, the structural model in the Smart-PLS analysis should initially be conducted without the moderator, followed by a separate model to reliably investigate the moderation effect [18]. Consequently,



this study includes two distinct models: one for direct effects and another for interaction effects [40].

The model's validity is evaluated using the  $R^2$  value and the structural paths [10]. The  $R^2$  value reveals that approximately 26% of the variance in the internal auditors' creativity in Jordanian-listed companies are explained by the proposed framework, indicating a satisfactory level of explanation. Regarding the path structure, the study empirically tested the proposed relationships using a bootstrapping procedure. The path coefficients and t-values for each relationship are shown in Table 2.

**Table 2: Result of hypotheses testing of the study**

No.	Relationship		T-value	P-value	Sig.
	IV	DV			
H1	PSE $\longrightarrow$ IAC		2.753	0.008	Sig. +
H2	EL $\longrightarrow$ IAC		5.617	0.000	Sig. +
No.	IV	MOD	DV		
H3a	PSE	JS	BI	2.832	0.021
H3b	EL	JS	BI	3.618	0.011

The findings indicate that influence of professional self-efficacy on the internal auditors' creativity in Jordanian-listed companies is significant (T-value = 2.753;  $p < 0.01$ ), suggesting that an increase in professional self-efficacy among internal auditors to an increase in their creativity. Therefore, H1 is accepted. Regarding the influence of entrepreneurial leadership on the internal auditors' creativity in Jordanian-listed companies is also positive and significant (T-value = 5.617;  $p < 0.01$ ), indicating that as entrepreneurial leadership among head of internal auditors increases, the creativity of internal auditors within Jordanian-listed companies will also improve; thus, H2 is accepted.

As outlined in H3a and Hb, varying levels of job satisfaction are expected to influence internal auditors' creativity, making it either less or more susceptible to the respective factors. However, the interaction effect between professional self-efficacy and job satisfaction on internal auditors' creativity shows a positive and significant t-value (t-value = 2.832,  $p < 0.05$ ). "This supports the moderating role of job satisfaction in the relationship between professional self-efficacy" and internal auditors' creativity, indicating that professional self-efficacy is a stronger predictor of internal auditors' creativity, when job satisfaction is high. Therefore, H3a is accepted. Similarly, "the interaction effect between entrepreneurial leadership and job satisfaction on internal auditors' creativity also shows a positive and significant t-value (t-value = 3.618,  $p < 0.05$ ). This reinforces the moderating effect of job satisfaction on the relationship between entrepreneurial leadership and internal auditors'

creativity, suggesting that entrepreneurial leadership is a more significant predictor of internal auditors' creativity at higher levels of job satisfaction. Consequently, H3b is accepted.

## 5. DISCUSSION AND CONCLUSION

The purpose of the study was to examine how professional self-efficacy and entrepreneurial leadership influence internal auditors' creativity. It also elucidated the moderating influence of job satisfaction on the influence of professional self-efficacy and entrepreneurial leadership influence internal auditors' creativity in Jordanian-listed companies.

Regarding the first hypothesis (H1), the findings indicated that professional self-efficacy motivates internal auditors' creativity, suggesting that adequate professional self-efficacy among internal auditors in the Jordanian-listed companies is essential for achieving creativity. If an internal auditor wants to create new and useful ideas, he or she needs to be professional self-efficacy [1, 39]. This finding aligns with previous studies [13, 24, 39]. For example, Akbari et al. [1] discovered that employees' creative self-efficacy positively affects the "innovative work behavior of employees.

Regarding knowledge sharing (H2), the findings revealed that entrepreneurial leadership has a significant impact on internal auditors' creativity in Jordanian-listed companies by fostering an environment that encourages innovation, risk-taking, and the pursuit of new ideas [24]. Meaning that, where procedures are often routine and compliance-driven, entrepreneurial leaders inspire auditors to go beyond traditional methods and embrace creative approaches to problem-solving and audit processes [4, 23, 26]. For instance, Islam and Asad [23] suggested that entrepreneurial leaders are known for their creative and innovative abilities, therefore, such leaders drive the process of creativity.

Regarding the indirect effect model, this study proposes that job satisfaction moderator the influence of professional self-efficacy and entrepreneurial leaders on internal auditors' creativity in Jordanian-listed companies. Consequently, the hypotheses H3a and H3b are linked to job satisfaction as a moderator. As shown in Table 2, the findings support both hypotheses. Specifically, the influence of professional self-efficacy on internal auditors' creativity in Jordanian-listed companies was positively and significantly moderated by job satisfaction (H3a). This indicates that while professional self-efficacy is crucial for fostering internal auditors' creativity, the presence of effective job satisfaction further enhances the influence of professional self-efficacy on internal auditors' creativity in Jordanian-listed companies. Additionally, the influence of entrepreneurial leadership on internal auditors' creativity in Jordanian-listed companies was also positively and significantly moderated by job satisfaction (H3b). This suggests that while entrepreneurial leadership is essential for promoting internal auditors' creativity, a high level of job satisfaction further enhances the influence of entrepreneurial leadership on internal auditors' creativity in Jordanian-listed companies [24]. This research offers insights for future

researchers in this area, demonstrating that different levels of job satisfaction can result in varying effects of entrepreneurial leadership on academic innovation behavior.

Furthermore, our results indicate that the factors influencing internal auditors' creativity can be significantly affected by varying levels of job satisfaction, particularly in Jordanian-listed companies. Therefore, stakeholders or decision-makers interested in enhancing creativity within internal audit units should consider the different levels of job satisfaction among academic staff across various institutions. Additionally, stakeholders or policymakers should prioritize developing strategies to improve internal auditors' creativity and provide resources and tools to facilitate entrepreneurial leadership.

However, future research could explore the effects of additional factors that may influence internal auditors' creativity. It's important to note that the findings of this study are based on internal auditors' creativity in Jordanian-listed companies, so any generalizations to other contexts should be made with caution. The results may vary in different sectors or countries. Despite these limitations, this study underscores the significance and relevance of scientifically investigating internal auditors' creativity and its determinants, particularly with the moderating effect of job satisfaction.

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