“Enhancing professional skepticism through simulation-based learning: Evidence from the UAE insurance industry”

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ARTICLE INFO	Amer Morshed and Hanadi A. Salhab (2026). Enhancing professional skepticism through simulation-based learning: Evidence from the UAE insurance industry. *Insurance Markets and Companies*, *17*(1), 1-16. doi:10.21511/ins.17(1).2026.01
DOI	http://dx.doi.org/10.21511/ins.17(1).2026.01
RELEASED ON	Saturday, 27 December 2025
RECEIVED ON	Saturday, 22 November 2025
ACCEPTED ON	Monday, 22 December 2025

JOURNAL	"Insurance Markets and Companies"
ISSN PRINT	2616-3551
ISSN ONLINE	2522-9591
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
60	1	6

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

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ENHANCING PROFESSIONAL SKEPTICISM THROUGH SIMULATION-BASED LEARNING: EVIDENCE FROM THE UAE INSURANCE INDUSTRY

Abstract

Growing regulatory demands and operational complexity in the insurance industry require professionals with strong analytical reasoning and professional skepticism, yet traditional training often fails to develop these competencies. This study aims to evaluate the effectiveness of simulation-based experiential training in enhancing professional skepticism and analytical reasoning among insurance professionals and to examine how the organizational learning climate influences this relationship.

A quasi-experimental study was conducted between May and September 2025 across eight insurance companies in the United Arab Emirates, involving 160 early-career professionals (mean age = 27.3 years, SD = 2.5) organized into 40 teams. Teams were randomly assigned to either simulation-based experiential training or conventional instruction. Data were collected at three stages – pre-training, post-training, and eight weeks after training – and analyzed using multilevel structural equation modeling.

Participants who received simulation-based training showed a 0.42-point increase in professional skepticism and a 0.78-point improvement in analytical reasoning compared with the control group, both statistically significant at $p < 0.001$. Analytical reasoning mediated 57% of the training's total effect on skepticism (indirect effect = 0.24, $p < 0.001$). The organizational learning climate significantly moderated this relationship (interaction effect = 0.21, $p < 0.001$), with greater gains observed in firms that promoted reflection and feedback.

The findings confirm that simulation-based experiential learning, reinforced by a supportive organizational climate, substantially enhances analytical, skeptical, and ethical judgment essential for accurate claim evaluation, risk assessment, and fraud prevention in the insurance sector.

Keywords simulation, skepticism, reasoning, learning, insurance, UAE

JEL Classification G22, M53, D91

Type of the article: Research Article

Received on: 22nd of November, 2025
Accepted on: 22nd of December, 2025
Published on: 27th of December, 2025

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Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

The insurance industry operates in an environment of increasing complexity, regulatory scrutiny, and ethical accountability. As digitalization transforms claims management, underwriting, and fraud detection processes, professionals are required to exercise a high level of judgment, skepticism, and analytical reasoning. However, despite the industry's reliance on these competencies, evidence suggests that traditional training models often fail to cultivate the depth of critical thinking required for reliable and ethical decision-making. This shortfall has led to errors in claim assessment, mispricing of risks, and vulnerabilities to fraudulent activities, all of which undermine the credibility and financial stability of insurance institutions.

The central scientific problem underpinning this study concerns the development and reinforcement of professional skepticism and analytical reasoning within the organizational context of insurance companies. While these skills are vital for maintaining decision accuracy and ethical integrity, they are influenced not only by individual cognitive processes but also by workplace learning conditions and cultural norms. The challenge lies in understanding how professional competencies can be effectively enhanced through experiential learning mechanisms and how organizational environments shape the transfer and sustainability of these skills.

This problem situates the research within the broader field of behavioral and cognitive learning in professional settings, addressing a critical gap between formal instruction and real-world application. Its resolution holds direct implications for improving decision quality, ethical standards, and governance across the insurance sector.

1. LITERATURE REVIEW

The insurance industry is a cornerstone of economic stability and resilience, providing mechanisms for risk transfer and financial protection. In recent years, the sector has undergone significant transformation driven by technological innovation, regulatory reform, and global uncertainty. These developments have increased the complexity of insurance decision-making and heightened the importance of sound professional judgment. Within this context, the concept of professional skepticism, defined as a questioning attitude and a critical assessment of information, has become central to ensuring high-quality and ethical decisions (Kelly & Larres, 2025; Rautiainen et al., 2024). Although widely examined in auditing research, professional skepticism is equally relevant in insurance, where underwriters, claims assessors, and compliance officers must analyze ambiguous data, assess evidence reliability, and evaluate competing narratives before forming conclusions (Hemrit & Belgacem, 2024; Nagarajan & Duggal, 2024).

Professional skepticism serves as both a cognitive and behavioral safeguard, promoting objective judgment and reducing vulnerability to bias. It allows professionals to challenge assumptions, verify evidence, and resist the influence of intuition or authority (Brazel et al., 2025). Research indicates that skepticism strengthens decision accuracy and ethical reasoning by promoting deeper cognitive engagement with evidence (Florio, 2024; Gui et al., 2024). In the context of insurance companies, such critical reasoning improves risk evaluation, fraud detection, and claims integrity. Skeptical professionals are more likely to detect inconsistencies in client information, question incomplete disclosures, and avoid overconfidence in underwriting judgments (Giordano & Victoravich, 2025; Tiron-Tudor et al., 2025). However, skepticism has traditionally been underemphasized in the professional training structures of insurance firms, where continuing professional development (CPD) programs often focus on compliance rather than cognitive and behavioral development (Childs et al., 2025). This gap suggests a need for training approaches that actively cultivate analytical reasoning and reflective judgment.

Experiential learning and simulation-based training have emerged as effective frameworks for fostering professional skepticism in complex decision-making environments (Ahuja, 2024). Experiential learning theory posits that individuals learn most effectively through a cyclical process of experience, reflection, conceptualization, and experimentation (Ajani & Matiyenga, 2025; Uppor et al., 2024). Simulation-based training (SBT) operationalizes these principles by recreating realistic professional scenarios within controlled environments (Muñoz-La Rivera et al., 2025). Such methods allow participants to make and reflect on decisions in a risk-free setting, thereby strengthening both technical competence and cognitive agility. In insurance companies, simulations can model real-world challenges such as assessing disputed claims, evaluating risk exposures, or handling large-loss scenarios (Yadav, 2025). Through repeated practice, feedback, and reflection, professionals develop the ability to think critically and maintain skepticism when interpreting uncertain or incomplete data (Nicolò et al., 2024; Waquar et al., 2025).

http://dx.doi.org/10.21511/ins.17(1).2026.01

Empirical research supports the view that simulation enhances both analytical and ethical dimensions of professional judgment. Studies demonstrate that scenario-based learning improves critical thinking, situational awareness, and adaptive reasoning (Georgiou et al., 2024; Soydan Oktay & Yüzer, 2024). For insurance companies, the use of simulation encourages staff to identify information gaps, test alternative assumptions, and evaluate decisions based on evidence rather than convention (Eling, 2024; Kuppan et al., 2024). The reflective debriefing process, where participants analyze the rationale behind their choices and discuss errors, further deepens learning by transforming experience into cognitive insight (Ajani & Matiyenga, 2025; Ponomariovienė & Jakavonytė-Staškuvienė, 2024). This reflective element is crucial because it encourages professionals to recognize their biases, question prior conclusions, and strengthen analytical consistency (Albaroudi et al., 2024; Ng et al., 2025). Consequently, simulation-based learning provides a structured mechanism for transforming procedural expertise into thoughtful, evidence-based skepticism.

The cognitive mechanisms that explain the link between simulation-based training and skepticism are best understood through dual-process theory, which differentiates between intuitive (System 1) and analytical (System 2) reasoning (Blum & Hatfield, 2025). System 1 operates quickly and efficiently but is prone to heuristics and emotional influences, while System 2 involves deliberate, logical analysis (Augusto, 2024; Oran, 2025). In the insurance context, professionals often rely on intuition when evaluating claims or pricing risk due to workload pressures or time constraints. While experience-based intuition can be useful, overreliance on it increases susceptibility to systematic errors such as anchoring or confirmation bias (Bourlier et al., 2024; Norman et al., 2024). Simulation-based learning activates System 2 reasoning by placing individuals in situations that require deliberate evaluation of data, multiple hypothesis testing, and evidence justification (Bauer et al., 2025; Hodwitz et al., 2025). Empirical studies confirm that engaging System 2 processes through structured exercises enhances reflective reasoning and professional skepticism (Abrahams & Phesa, 2025; Qian, 2025). In practice, this cognitive recalibration improves claim verification, underwriting accuracy, and fraud detection, leading to measurable improvements in insurance decision quality. Analytical reasoning thus mediates the relationship between simulation-based training and professional skepticism by providing the mental discipline necessary for reflective evaluation.

Although training can enhance individual cognition, its long-term success depends on organizational context. The learning climate – a collective perception of how an organization supports inquiry, feedback, and experimentation – determines whether training outcomes are retained and applied (Zhou et al., 2024). The transfer of training depends on workplace factors such as managerial support, peer collaboration, and the opportunity to apply new knowledge (Al-Zoubi et al., 2025). In insurance companies, supportive learning climates promote the application of skeptical inquiry and analytical reasoning developed through simulation training (Morshed, 2025b). Empirical studies confirm that when employees perceive their environment as open to dialogue and feedback, they are more likely to apply critical thinking skills and challenge assumptions in their daily work (Alberti et al., 2022; Morshed, 2025a). Conversely, rigid hierarchies and punitive management structures discourage questioning and reduce the lasting impact of training.

In emerging insurance markets such as the UAE, organizational learning climates are evolving alongside regulatory modernization. While many companies are aligning with global standards of governance and risk management, they still face cultural challenges rooted in hierarchical authority and procedural rigidity (Elhabib, 2024). These dynamics can limit the effectiveness of experiential training if employees feel constrained from voicing critical observations or challenging established practices. To address this, insurance companies must foster learning environments that value curiosity, feedback, and reflection. Organizations integrating reflective learning into their operations experience more sustainable behavioral change, with skepticism becoming an embedded norm rather than an individual characteristic. Cultivating such climates allows insurance firms to convert individual learning into collective competence, reinforcing both ethical and operational performance (Christou et al., 2024; McElroy et al., 2024).

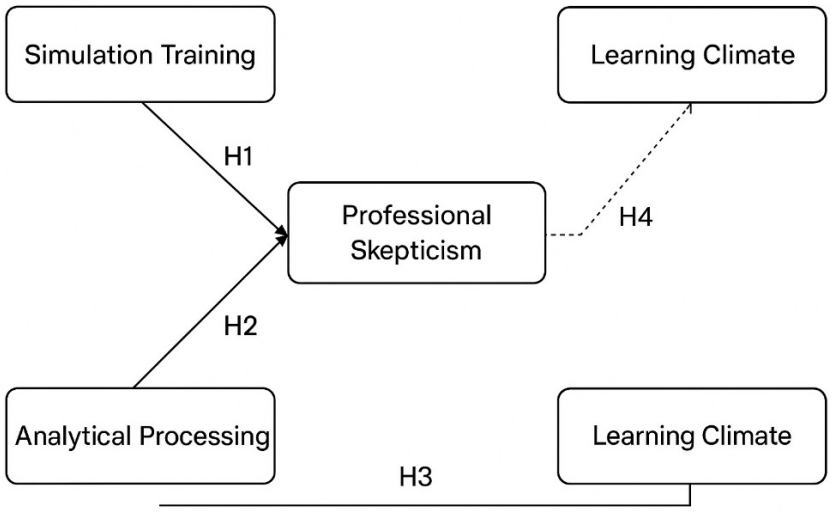

Figure 1. Conceptual model

Integrating these insights reveals that professional skepticism in insurance companies is shaped by the interplay of individual cognition, experiential learning, and organizational culture. Simulation-based training stimulates analytical reasoning and reflective thinking, while supportive learning climates reinforce these behaviors through social and managerial mechanisms (Coulon et al., 2025; Singh-Pillay, 2024). This framework aligns with Baldwin and Ford's model of training transfer, which underscores the importance of connecting learning interventions with workplace conditions (Tafvelin & Stenling, 2025). By adopting simulation-based training within a learning-oriented culture, insurance companies can enhance decision accuracy, ethical conduct, and governance quality, ensuring that critical thinking becomes an institutional capability rather than a sporadic individual behavior.

In summary, the reviewed literature indicates that professional skepticism is not a fixed personality trait but a developable professional skill. Simulation-based experiential learning provides an effective means of cultivating skepticism and analytical reasoning by immersing professionals in realistic decision contexts. However, these benefits are sustained only when supported by positive learning climates that encourage dialogue, reflection, and feedback. For insurance companies, the integration of experiential learning and organizational support structures represents a strategic approach to strengthening professional judgment, ethical behavior, and decision-making quality.

The purpose of this study is to examine how simulation-based experiential training influences professional skepticism and analytical reasoning among employees of insurance companies in the United Arab Emirates. It also investigates how organizational learning climates moderate this relationship. The study extends established theories from auditing and organizational learning to the insurance context, offering empirical insights into how cognitive and environmental factors jointly influence the development of skepticism and analytical decision-making in emerging insurance markets.

Research hypotheses are as follows:

H1: Simulation-based training increases professional skepticism more than traditional continuing professional development (CPD).

H2: Simulation-based training enhances analytical reasoning more than traditional CPD.

H3: The effect of simulation-based training on professional skepticism is mediated by analytical reasoning.

H4: The effect of simulation-based training on professional skepticism is stronger in insurance companies with supportive learning climates.

http://dx.doi.org/10.21511/ins.17(1).2026.01

2. METHODS

This study employs a quasi-experimental, multi-firm research design to examine how simulation-based experiential training influences professional skepticism and analytical reasoning among employees in UAE insurance companies, as well as how organizational learning climate moderates these relationships. The design balances methodological rigor with ecological realism, allowing for observation of behavioral and cognitive changes within real insurance work environments (Mastrangelo Gittler & Lam, 2025).

A total of 160 early-career professionals from eight major insurance companies in the United Arab Emirates participated in the study conducted between May and September 2025. The sample included underwriters, claims officers, and risk analysts with less than five years of experience, representing the sector's emerging professional segment most affected by training reforms. Participants were organized into 40 teams of four members each, mirroring the collaborative structure of insurance operations. Teams were randomly assigned to either the simulation-based experiential training (experimental group) or the traditional continuing professional development (CPD) program (control group). Team-level randomization minimized cross-group contamination while maintaining ecological validity within actual organizational settings. The UAE insurance market was purposefully selected due to its rapid regulatory modernization and increasing emphasis on professional standards, ethical judgment, and analytical performance. Ethical approval was obtained from Al-Zaytoonah University of Jordan, and all participants provided informed consent prior to data collection (Alshehadeh et al., 2023; Shaban & Omoush, 2025).

Data were collected at three points in time: baseline (T1) prior to training, immediate post-training (T2), and follow-up (T3) eight weeks after training. This longitudinal approach made it possible to differentiate short-term training gains from long-term retention and behavioral transfer. The simulation-based experiential training was developed with senior insurance trainers to reflect realistic professional challenges, including fraudulent claim detection, catastrophic loss assessment, and ethical underwriting dilemmas. Each session followed a structured cycle of briefing, execution, and debriefing, where participants analyzed their decisions, discussed biases, and reflected on ethical implications. In contrast, the control group received traditional lecture-based CPD focused on technical updates, compliance, and regulatory procedures, without simulation or reflection components (Taqa, 2025).

All data used in this study were primary, collected directly from participants and participating firms. Instruments were adapted to the insurance context and included validated scales for the main constructs of interest, namely professional skepticism, analytical reasoning, and organizational learning climate. The complete questionnaire instrument used in this research is provided in Appendix A.

Insurance case materials for the simulations were derived from anonymized internal company records such as policy files and claim documents, ensuring realism while maintaining confidentiality. All instruments were delivered electronically using secure company intranets, and responses were automatically encrypted and time-stamped to preserve accuracy (Ahmed et al., 2023; Morshed, 2025d).

Data were prepared and analyzed using SPSS and Mplus. Missing values below five percent were imputed through the expectation–maximization

Table 1. Constructs, measures, and sources

Construct	Measurement Tool & Items	Scale Type	Source(s)
Professional Skepticism	Hurtt's 30-item scale adapted for insurance decision-making	7-point Likert	Hurtt (2010)
Analytical Reasoning	CRT (3 items) + 5 insurance decision scenarios	Correct count + scenario scores	Frederick (2005); adapted
Learning Climate	Tracey & Tews 8-item scale (supervisor support, collaboration)	7-point Likert	Tracey & Tews (2005)
Manipulation Checks	3 custom items (realism, engagement, relevance)	7-point Likert	Developed for this study
Controls	Age, tenure, workload, baseline skepticism	Mixed	Standard demographics

method. Negatively worded items were reverse-coded, and average composite scores were calculated for each multi-item scale. Cronbach's alpha coefficients above 0.80 confirmed internal consistency. Construct validity was assessed through confirmatory factor analysis (CFA), with factor loadings above 0.60 and average variance extracted (AVE) values above 0.50, indicating satisfactory measurement quality. Descriptive statistics such as means, standard deviations, and correlations were generated to profile the sample and verify assumptions (Al-Muntasir, 2022).

A multilevel analytical framework was employed to account for employees nested within teams and companies. This approach reflects the hierarchical structure of insurance organizations, where individual performance is shaped by team dynamics and company culture. Direct effects, mediation, and moderation were tested through successive models, summarized below (Sharabati, 2021).

The hypothesized relationships were tested using multilevel structural equation modeling (MSEM), which captures both individual- and organizational-level variance. The direct effects of training on professional skepticism and analytical reasoning were modeled as:

$$Outcome_{ij} = \beta_0 + \beta_1 \left(Training_{ij} \right) + u_j + e_{ij}, \quad (1)$$

where $Outcome_{ij}$ represents either professional skepticism or analytical reasoning for employee i in team j, β_1 captures the effect of training, u_j represents team-level random effects (such as managerial supervision or claim complexity), and e_{ij} is the individual residual.

Mediation (*H3*) tested whether analytical reasoning mediates the effect of training on professional skepticism using 5,000 bootstrapped samples. This assessed whether simulation-based exercises enhance skeptical judgment by improving reasoning processes in claim evaluation or underwriting tasks.

Moderation (H4) examined the role of organizational learning climate, modeled as:

$$\begin{aligned} \text{Skepticism}_{ij} &= \beta_0 + \beta_1 \left(\text{Training}_{ij} \right) \\ &+ \beta_2 \left(\text{Climate}_j \right) + \beta_3 \left(\text{Training}_{ij} \cdot \text{Climate}_j \right) \\ &+ u_j + e_{ij}, \end{aligned} \quad (2)$$

A significant β_3 indicates that employees in insurance companies with open, feedback-oriented climates derive stronger cognitive benefits from simulation-based training (Shaban & Barakat, 2023).

Model estimation used maximum likelihood with robust standard errors (MLR). Model fit was assessed using CFI (≥ 0.95), TLI (≥ 0.90), RMSEA (≤ 0.08), and SRMR (≤ 0.08). Intraclass correlation coefficients (ICCs) justified the multilevel approach, and robustness was tested by re-estimating models with alternative control variables and excluding influential outliers (Postelnicu et al., 2025).

All data were collected exclusively for this study. Participants were informed of the objectives, procedures, and confidentiality measures before taking part. Each insurance company verified the authenticity of its simulation materials. Anonymized datasets – including survey responses, CRT scores, and supervisor evaluations – were stored on encrypted drives accessible only to the research team. No financial or employment-based incentives were offered to avoid bias. Ethical approval for the study was obtained from Al-Zaytoonah University of Jordan, ensuring adherence to institutional and international research ethics standards.

This methodology integrates experimental precision with industry realism. By embedding simulation-based scenarios drawn from authentic insurance operations, it captures the interplay between cognitive skill development and organizational context. The multilevel, longitudinal design provides a robust framework for examining how

Table 2. Hypotheses and statistical tests

Hypothesis	Planned Analysis
H1	Multilevel regression: Training → Professional Skepticism
H2	Multilevel regression: Training → Analytical Reasoning
H3	MSEM with bootstrapped indirect effect (mediation)
H4	Cross-level interaction: Training × Learning Climate → Professional Skepticism

http://dx.doi.org/10.21511/ins.17(1).2026.01

training interventions enhance professional skepticism and analytical reasoning among insurance professionals working in dynamic and ethically sensitive decision environments.

3. RESULTS AND DISCUSSION

The empirical results from the multilevel analyses provide strong evidence for the effectiveness of simulation-based experiential training in enhancing both analytical reasoning and professional skepticism among insurance professionals. The results also confirm that the organizational learning climate significantly moderates this relationship, amplifying the benefits of simulation-based learning in firms that encourage collaboration and reflective practice.

Descriptive results for all key variables are presented in Table 3. At baseline, participants exhibited moderate levels of professional skepticism (M = 4.85, SD = 0.72) and analytical reasoning (M = 2.60, SD = 1.15), suggesting that while insurance professionals possessed a reasonable foundation of critical-thinking ability, there was substantial potential for improvement through targeted experiential learning. The average learning climate score (M = 5.12, SD = 0.81) indicates that most companies fostered supportive environments conducive to discussion and feedback, though some variation existed among firms. This variation justified its inclusion as a moderating factor, reflecting differences in how firms encourage reflection, feedback, and knowledge sharing. Data screening confirmed normal distribution patterns, verifying the appropriateness of multilevel modeling (Oreqat, 2021).

The descriptive data confirm a balanced and heterogeneous sample representative of the UAE insurance workforce, with employees drawn from underwriting, claims management, and risk analysis functions. Variability across firms and roles underscores the relevance of studying simulation training in diverse organizational contexts.

The direct effects analysis (Table 4) revealed statistically significant improvements for both professional skepticism and analytical reasoning among employees who received simulation-based training compared with those who underwent traditional CPD (Morshed, 2025c).

The results in Table 4 demonstrate that simulation-based learning led to significant cognitive and behavioral gains. Employees who participated in simulations became more questioning, deliberate, and evidence-oriented in their professional judgments. In practical terms, this improvement translates into more accurate claim assessments, greater detection of potential fraud indicators, and enhanced judgment when evaluating complex underwriting scenarios. The increase of 0.42 in skepticism and 0.78 in reasoning scores underscores the substantial value of experiential learning in developing analytical capacity and reflective judgment, confirming *H1* and *H2*.

The mediation analysis further revealed that analytical reasoning served as a significant mechanism through which simulation-based training influenced professional skepticism (Table 5) (Roche et al., 2025).

The indirect effect ($\beta = 0.24$, $p < 0.001$) indicates that roughly 57% of the total effect of training on skepticism operates through improved reasoning ability, supporting *H3*. This finding suggests that simulation-based training strengthens skeptical behavior by enhancing cognitive processing skills required for assessing complex and uncertain insurance data. In real-world practice, employees who developed higher reasoning skills became

Table 3. Descriptive statistics of key variables (N = 160)

Variable	Mean	SD	Min	Max
Professional Skepticism (baseline)	4.85	0.72	3.2	6.3
Analytical Reasoning (baseline)	2.60	1.15	0	5
Learning Climate	5.12	0.81	3.1	6.8
Age (years)	27.3	2.5	23	32
Tenure (years)	2.2	1.1	0.5	4
Weekly Workload (hours)	46.7	5.3	38	60

Table 4. Multilevel regression results for direct effects (*H1, H2*)

Outcome	Predictor (Training)	β	SE	t	p
Professional Skepticism	Simulation vs. CPD	0.42	0.09	4.67	0.0002
Analytical Reasoning	Simulation vs. CPD	0.78	0.18	4.33	0.0005

Table 5. Mediation analysis: Indirect effect of training via analytical reasoning (*H3*)

Pathway	Estimate	SE	t	p
Training → Analytical Reasoning	0.78	0.18	4.33	0.0005
Analytical Reasoning → Skepticism	0.31	0.07	4.43	0.0004
Indirect Effect (bootstrapped)	0.24	0.06	4.00	0.0008

more adept at verifying documentation, identifying inconsistencies in client statements, and questioning unusual claim patterns before approval. Thus, the primary pathway through which simulation-based learning promotes skepticism lies in fostering deeper analytical thinking and reflective evaluation – critical competencies in insurance claim analysis and risk management.

The moderation analysis examined whether the organizational learning climate strengthened the relationship between simulation-based training and professional skepticism (Weismantel et al., 2024). Results in Table 6 confirmed a statistically significant interaction, validating *H4*.

As shown in Table 6, the positive interaction ($\beta = 0.21$, $p < 0.001$) indicates that insurance professionals working in organizations with strong learning climates derived significantly greater benefits from simulation-based training. Simple slopes analysis revealed that in firms where collaboration, feedback, and reflective dialogue were encouraged, training increased skepticism by approximately 0.58 points – nearly three times the improvement observed in firms with weaker climates (Stürmer et al., 2024).

This finding has important implications for insurance companies seeking to strengthen professional judgment and ethical standards. In supportive learning environments, employees not only gain new cognitive skills from simulation but also apply and reinforce them through post-claim discussions, peer feedback, and team-based reflection. Conversely, rigid environments that discourage questioning or open dialogue diminish the effectiveness of experiential training, resulting in smaller behavioral shifts. The moderation results confirm that learning culture acts as a critical organizational enabler that transforms individual training outcomes into collective improvements in analytical and skeptical performance.

The overall results across Tables 3-6 provide strong empirical support for all four hypotheses. *H1* and *H2* confirm that simulation-based experiential training directly enhances professional skepticism and analytical reasoning. *H3* confirms that analytical reasoning mediates the training–skepticism relationship, explaining the cognitive mechanism underlying improved professional judgment. *H4* establishes that the organizational learning climate moderates this relationship, amplifying training benefits in firms with supportive and reflective learning cultures.

Taken together, these findings provide compelling evidence that simulation-based experiential learning is an effective strategic approach for improving decision quality in the insurance sector. Employees who engage in realistic simulations become more analytical, skeptical, and ethically attentive – traits essential for accurate claim assessment, fair underwriting, and effective fraud prevention. Moreover, firms that complement training with open learning climates can expect not only higher individual performance but also

Table 6. Moderation analysis: Cross-level interaction with learning climate (*H4*)

Outcome	Predictor	β	SE	t	p
Professional Skepticism	Training	0.29	0.10	2.90	0.0047
Professional Skepticism	Learning Climate	0.33	0.08	4.13	0.0002
Professional Skepticism	Training × Learning Climate	0.21	0.06	3.50	0.0007

http://dx.doi.org/10.21511/ins.17(1).2026.01

stronger organizational integrity and compliance outcomes.

The findings of this study indicate that simulation-based experiential training significantly enhances both professional skepticism and analytical reasoning among insurance professionals, while a supportive organizational learning climate strengthens these effects. These outcomes suggest that experiential learning is an effective strategy for improving professional judgment and decision quality in the insurance industry, confirming the study's hypotheses.

The improvement in professional skepticism and analytical reasoning aligns with previous research in auditing and medical education that has found simulation-based learning to be superior to traditional instruction in fostering critical and reflective thinking (Ahuja, 2024; Georgiou et al., 2024). Similar to Ajani and Matiyenga (2025), this study shows that exposure to realistic, problem-based scenarios allows participants to practice decision-making under uncertainty, which enhances both analytical processing and ethical awareness. These results support Kolb's experiential learning theory, demonstrating that active engagement and reflection in simulated conditions promote higher cognitive functioning and professional judgment.

The mediation results further revealed that analytical reasoning acts as the mechanism through which training influences skepticism. This finding is consistent with Blum and Hatfield (2025) and Qian (2025), who reported that analytical engagement reduces intuitive bias and improves professional accuracy (Yaseen & Al-Amarneh, 2025). Within the insurance industry, this relationship suggests that simulation training helps professionals process complex claim information more systematically, reducing reliance on heuristics such as overconfidence or anchoring – biases frequently observed in claim assessment and underwriting (Bourlier et al., 2024).

The moderating effect of organizational learning climate confirms earlier work emphasizing that supportive environments enhance the transfer of training (Zhou et al., 2024; Al-Zoubi et al., 2025). Insurance companies with open communication, feedback, and reflection structures allow cognitive improvements to translate into behavioral change.

CONCLUSION

The purpose of this study was to examine how simulation-based experiential training influences professional skepticism and analytical reasoning among insurance professionals, and to assess the moderating role of the organizational learning climate. This research sought to determine whether experiential learning could enhance cognitive and ethical competencies that are essential for accurate decision-making in insurance practices such as claims evaluation, underwriting, and fraud detection.

The results demonstrated that simulation-based training significantly improved both analytical reasoning and professional skepticism compared to traditional CPD methods. Analytical reasoning was identified as the mechanism through which training enhanced skepticism, confirming that critical reasoning processes underpin sound professional judgment. Furthermore, the effect of training was found to be amplified in firms characterized by supportive learning climates that encourage reflection, feedback, and open communication.

From these findings, several conclusions can be drawn. First, professional skepticism in insurance is not an innate trait but a learnable competency that can be strengthened through well-designed experiential programs. Second, cognitive development and organizational culture interact to determine the effectiveness of professional training. Without a supportive learning environment, even advanced instructional methods may yield only temporary or limited benefits. Third, these results underscore the need for insurance firms to align training initiatives with cultural reinforcement mechanisms that sustain analytical and ethical decision-making over time.

Future research should explore the long-term effects of simulation-based learning on actual performance indicators such as claim accuracy, fraud detection rates, and client satisfaction. Comparative studies across regions or professional sectors may also reveal how regulatory and cultural contexts influence the sustainability of skeptical and analytical practices in the insurance industry.

AUTHOR CONTRIBUTIONS

Conceptualization: Amer Morshed, Hanadi Salhab.
Data curation: Amer Morshed.
Formal analysis: Amer Morshed, Hanadi Salhab.
Funding acquisition: Hanadi Salhab.
Investigation: Amer Morshed, Hanadi Salhab.
Methodology: Amer Morshed, Hanadi Salhab.
Project administration: Amer Morshed.
Resources: Amer Morshed.
Software: Amer Morshed, Hanadi Salhab.
Supervision: Amer Morshed.
Validation: Amer Morshed, Hanadi Salhab.
Visualization: Amer Morshed.
Writing – original draft: Amer Morshed.
Writing – review & editing: Hanadi Salhab.

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APPENDIX A. Research Instrument: Simulation-Based Learning and Professional Skepticism in the UAE Insurance Industry

Purpose and Structure

This questionnaire was designed to measure three main constructs: professional skepticism, analytical reasoning, and organizational learning climate among insurance professionals in the United Arab Emirates. It also collects demographic data and includes manipulation check items to assess realism and engagement with the simulation-based training. All responses were anonymous and collected between May and September 2025.

The study received ethical approval from the Al-Zaytoonah University of Jordan Research Ethics Committee (Approval No. AJU-INS-2025-03).

Section A. Participant Background Information

Please provide basic information about yourself. All responses are confidential.

1. Age: _____ years
2. Gender: ☐ Male ☐ Female ☐ Prefer not to say
3. Current role: ☐ Underwriter ☐ Claims Officer ☐ Risk Analyst ☐ Other: _____
4. Years of professional experience: _____ years
5. Average weekly working hours: _____ hours
6. Department or division: _____
7. Company name (optional): _____

Section B. Professional Skepticism

(Adapted from Hurtt, 2010; 7-point Likert scale: 1 = Strongly Disagree, 7 = Strongly Agree)

Please indicate the extent to which you agree or disagree with each statement.

No.	Statement
PS1	I frequently question whether the information I receive is complete and accurate.
PS2	I take time to verify data before accepting it as valid.
PS3	I am not easily convinced by first impressions.
PS4	I often seek alternative explanations for unusual results.
PS5	I challenge evidence that seems inconsistent with prior knowledge.
PS6	I remain alert for possible errors or biases in the information I review.
PS7	I am comfortable questioning opinions expressed by higher-ranking colleagues.
PS8	I prefer to confirm my findings from multiple sources before drawing conclusions.
PS9	I often consider how my own biases might affect my judgment.
PS10	I feel responsible for ensuring that decisions are ethically sound.

http://dx.doi.org/10.21511/ins.17(1).2026.01

Section C. Analytical Reasoning

(Adapted from Frederick's Cognitive Reflection Test [CRT, 2005] and domain-specific decision scenarios)

Part 1. Cognitive Reflection Test (CRT)

Please write your answer clearly.

1. A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

2. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days to cover the entire lake, how long will it take to cover half the lake?

Part 2. Insurance Reasoning Scenarios

1. Select the most appropriate action or response.

2. A claim is unusually large but supported by all documents. What should you do first?

☐ Approve immediately
☐ Request additional verification of supporting documents
☐ Wait for supervisor confirmation
☐ Other (specify): _____

3. A policyholder reports a theft, but no police report is attached. How do you assess claim credibility?

☐ Accept with caution
☐ Reject
☐ Request external verification (e.g., police confirmation)

4. You are asked to estimate flood risk using 10-year rainfall data. What is the best approach?

☐ Use average of past 10 years
☐ Examine outliers and climate trends before deciding
☐ Apply last year's figures

5. A colleague insists a client is trustworthy "based on history." What should you rely on?

☐ Data and evidence
☐ Intuition and relationships

6. When assessing a claim, which step is most important?

☐ Confirm the source and reliability of evidence
☐ Rely on client reputation

Scoring: Each correct or analytical response = 1 point. Total analytical reasoning score: 0–8.

Section D. Organizational Learning Climate

(Adapted from Tracey & Tews, 2005; 7-point Likert scale: 1 = Strongly Disagree, 7 = Strongly Agree)

Please indicate how accurately the following statements describe your workplace.

No.	Statement
LC1	My supervisor encourages me to apply what I learn during training.
LC2	Employees here share ideas and learn from each other.
LC3	Feedback on performance is constructive and regular.
LC4	Mistakes are treated as opportunities to improve.
LC5	Managers support experimenting with new approaches.
LC6	Learning is valued and rewarded in this company.
LC7	I feel comfortable discussing errors or uncertainties openly.
LC8	Team members reflect on past decisions to improve future ones.

Section E. Manipulation Check: Training Experience

(7-point Likert scale: 1 = Strongly Disagree, 7 = Strongly Agree)

No.	Statement
MC1	The simulation reflected real challenges I face at work.
MC2	The training kept me actively engaged throughout.
MC3	The learning activities were relevant to my professional responsibilities.

http://dx.doi.org/10.21511/ins.17(1).2026.01