

## How Scientific Research Influences Audit Technology Adoption in Lebanon: A Qualitative Study

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### ABSTRACT:

The rapid evolution of emerging technologies such as Artificial Intelligence (AI), blockchain, and big data analytics is reshaping traditional auditing processes worldwide. This qualitative study investigates the influence of scientific publications on the adoption of these technologies within Lebanese auditing practices. To achieve this, semi-structured interviews were conducted with 15 members of the Lebanese Association of Certified Public Accountants (LACPA). Data were analyzed through Braun and Clarke's (2006) thematic approach, enabling the identification of recurring patterns and perceptions among participants. The findings reveal four key barriers that limit the impact of academic research: restricted accessibility to scholarly publications, limited contextualization to the Lebanese audit environment, weak collaboration between academia and practitioners, and conditional openness to technological adoption. These barriers highlight a persistent gap between academic output and the professional needs of auditors working in fragile contexts. Based on these insights, the study recommends actions for policymakers, universities, and professional bodies to enhance knowledge dissemination, encourage research-practice collaboration, and foster digital transformation in Lebanon's audit sector.

**Keywords:** *Emerging technologies, Auditing, Scientific publications, Lebanon, Qualitative research, Knowledge transfer, Blockchain, Artificial intelligence, Big data*

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### INTRODUCTION

The global auditing landscape is being reshaped by the rapid advancement of emerging technologies such as artificial intelligence (AI), blockchain, and big data analytics (Chukwuani, 2023). These technologies are transforming the way auditors perform risk assessments, detect irregularities, and ensure financial transparency. They offer the potential to enhance audit quality by automating routine tasks, improving decision-making accuracy, and enabling real-time data analysis (Deliu & Olariu, 2024). As these innovations become more embedded in global auditing practices, they have also spurred a

parallel increase in academic research aimed at understanding and optimizing their impact on the profession (Sari *et al.*, 2024).

Scientific publications on audit technology have become vital tools for sharing insights, proposing frameworks, and guiding implementation strategies (Sewpersadh, 2025). In principle, they are intended to serve a broad range of beneficiaries, including professional auditors, audit firms, members of regulatory bodies such as the Lebanese Association of Certified Public Accountants (LACPA), academic institutions, and policymakers. These stakeholders rely on

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timely, evidence-based knowledge to make informed decisions about training, technology adoption, curriculum reform, and regulatory innovation (Nelson *et al.*, 2018). In developed countries, robust institutional frameworks and strong university–industry linkages allow for the relatively seamless transfer of academic knowledge into professional practice (Benabdellah & Diani, 2025; Curtis & Turley, 2007; Hay *et al.*, 2014). However, in fragile and resource-constrained environments such as Lebanon, the pathways through which scientific research informs practice are significantly more complex and often underdeveloped.

Lebanon faces a unique set of challenges that impede the integration of scholarly advances into auditing practice. These include prolonged political and economic instability, severe currency devaluation, limited public investment in higher education, and widespread institutional fragility. While LACPA plays a central role in regulating the profession and promoting continuing education, it too faces structural and financial constraints that limit its ability to facilitate research dissemination or promote technological innovation. Furthermore, academic institutions in Lebanon often operate in silos, with limited engagement with the auditing profession. This disconnect means that even when high-quality, peer-reviewed research is produced, it often fails to reach those who need it most or is dismissed as irrelevant to local realities (Miao *et al.*, 2025).

Despite these constraints, there is growing awareness among Lebanese auditors of the need to modernize their practices and align with global audit trends. Yet little is known about how they engage with academic literature on emerging technologies or whether they find it accessible, applicable, or useful in shaping their day-to-day professional decisions. Although international literature has addressed the relationship between academic research and audit practice in technologically advanced markets (Issa *et al.*, 2016; Yoon *et al.*, 2015), there is a notable absence of empirical studies examining this issue in the Lebanese context or the broader Middle East and North Africa (MENA) region. A thorough review of regional journals, professional publications, and academic databases (e.g., Arab Researcher, LACPA bulletins, and MENA-based academic journals)

reveals a significant gap in localized research examining the role of scientific publications in audit innovation within Lebanon (Davidaviciene & Al Majzoub, 2022). This observation aligns with findings by Baroma (2025) and Alayli (2022), who note a scarcity of contextualized audit research in Egypt and Lebanon, and Majzoub *et al.* (2022), who document barriers to research dissemination in MENA audit practices. Similarly, Hamadeh *et al.*, (2025), highlights the uneven adoption of audit innovations across the region, with Lebanon lagging behind Gulf states in academic–practitioner collaboration. This makes it difficult to assess the current state of knowledge transfer and to design policies that could improve it.

To address this gap, the present study explores how Lebanese Certified Public Accountants perceive and engage with scientific publications that focus on emerging audit technologies. Specifically, it investigates the accessibility of such research, its perceived relevance, and the barriers that prevent its effective integration into practice. Accordingly, this study is guided by the following research objectives:

- ✓ To assess Lebanese auditors' awareness of and access to scientific publications on emerging audit technologies.
- ✓ To examine auditors' perceptions of the relevance and applicability of academic research to the Lebanese auditing context.
- ✓ To identify the main barriers and challenges that hinder the integration of scientific research into audit practice in Lebanon.
- ✓ To explore auditors' openness to adopting emerging technologies when informed by academic knowledge.
- ✓ To propose actionable recommendations for improving the transfer of academic knowledge to professional audit practice in Lebanon.

This study is based on qualitative data gathered through semi-structured interviews with 15 auditors affiliated with LACPA, selected to reflect diverse regional and professional backgrounds. The data were analyzed using thematic analysis to identify key patterns and insights.

By offering a detailed account of practitioners' experiences, this research contributes to the literature in several ways. First, it provides an

empirical basis for understanding the audit profession's interaction with academic knowledge in a fragile state context. Second, it generates insights that can help professional bodies, universities, and policymakers develop more targeted and effective strategies for promoting knowledge transfer. Finally, it advocates for a more inclusive model of academic research—one that recognizes local constraints, responds to practitioner needs, and strengthens the bridge between theory and practice in Lebanon's evolving audit landscape.

### Literature Review

In recent years, the auditing profession has experienced transformative changes driven by emerging technologies such as Artificial Intelligence (AI), blockchain, and big data analytics (Alayli, 2022). These tools have been widely credited for enhancing audit efficiency, precision, and responsiveness. Numerous international studies have emphasized their value in automating routine audit tasks, improving fraud detection, and facilitating real-time data analysis (Yoon *et al.*, 2015; Dai & Vasarhelyi, 2017; Warren *et al.*, 2015). For instance, AI has been used to support judgment-intensive processes such as risk assessment and anomaly detection, while blockchain provides a decentralized ledger that enhances data integrity and transparency.

This study draws on two complementary theoretical perspectives — *Knowledge Transfer Theory* (Argote & Ingram, 2000) and the *Diffusion of Innovation Theory* (García-Avilés, 2020) to examine how scientific publications influence the adoption of emerging audit technologies in Lebanon. These theories provide a conceptual foundation to analyze the mechanisms through which academic knowledge informs professional practice and the factors that shape auditors' receptiveness to innovation.

**Knowledge Transfer Theory** focuses on how knowledge moves from its source (e.g., universities) to its destination (e.g., practitioners), emphasizing that successful transfer depends not only on the availability of knowledge but also on its relevance, contextualization, and the absorptive capacity of recipients. This theory is particularly relevant in fragile institutional contexts, such as Lebanon, where systemic

barriers — including limited access to resources, weak institutional linkages, and lack of enabling infrastructure — often hinder effective knowledge flow. In this study, Knowledge Transfer Theory informs the examination of auditors perceived barriers to accessing and applying academic research, addressing the first three research objectives: assessing awareness and access, evaluating perceived relevance, and identifying institutional and professional barriers (Singh & Dhir, 2024).

**Diffusion of Innovation Theory**, on the other hand, explains how new ideas, technologies, or practices spread through a social system over time. According to García-Avilés (2020), the rate and extent of adoption depend on perceived attributes of the innovation, including its relative advantage, compatibility, complexity, trialability, and observability. This framework helps to interpret auditors' openness — or resistance — to adopting emerging technologies when informed by academic research, aligning with the fourth research objective. It provides a lens to analyze how contextual factors, such as cultural norms and regulatory environments, influence auditors' willingness to experiment with innovations despite institutional constraints.

By integrating these two perspectives, the study develops a conceptual model where *knowledge transfer* represents the supply and accessibility of academic insights, while *diffusion of innovation* captures the demand-side dynamics of adoption within the auditing profession. Together, they frame the analysis of how academic knowledge is perceived, filtered, and acted upon by Lebanese auditors.

Based on these theoretical underpinnings, the study also proposes the following conceptual propositions to guide analysis:

- ✓ The accessibility and contextualization of scientific publications positively influence auditors' perceptions of their relevance.
- ✓ Stronger academic–practitioner linkages enhance the perceived usefulness and practical application of academic research.
- ✓ Auditors' openness to technological adoption is moderated by both individual perceptions of innovation attributes (e.g., compatibility, complexity) and institutional support mechanisms.

This theoretical foundation not only guides the data collection and analysis but also enables a structured interpretation of findings, ensuring that the study contributes meaningfully to both theory and practice.

Yet, while the potential of these technologies is consistently acknowledged, scholars differ in their assessment of how they are perceived and adopted in practice. On one hand, authors like Issa *et al.* (2016) argue that audit technologies, when supported by robust training and organizational incentives, can improve auditor performance and reduce cognitive bias. On the other hand, researchers such as Sirois *et al.* (2018) caution that the over-reliance on automation may undermine critical professional judgment and shift audit responsibility toward system designers and data scientists. These contrasting perspectives underscore a central tension in the literature: technological tools can empower auditors but also introduce new risks and dependencies, especially when adopted without proper contextualization or ethical safeguards.

To better understand how such innovations are disseminated and adopted, researchers have increasingly turned to theoretical frameworks. Two particularly relevant perspectives for this study are **Diffusion of Innovation Theory** (García-Avilés, 2020) and **Knowledge Transfer Theory** (Argote & Ingram, 2000). The Diffusion of Innovation framework explains how, why, and at what rate new ideas and technologies spread across social systems. It identifies factors such as relative advantage, complexity, compatibility, trialability, and observability as key influences on adoption behavior. In contrast, Knowledge Transfer Theory focuses on the mechanisms, contexts, and barriers that affect the movement of knowledge from its source (e.g., academia) to its destination (e.g., audit practitioners). Applying these frameworks jointly allows for a deeper understanding of the structural, cognitive, and cultural dynamics that influence how scientific publications impact auditing practices in fragile environments like Lebanon.

At the global level, there is general consensus that academic research plays a critical role in shaping audit methodologies. Studies from technologically advanced countries demonstrate how academic-practitioner collaborations, continuing professional education, and applied research initiatives contribute to the timely

integration of innovations into auditing workflows (Curtis & Turley, 2007; Hay *et al.*, 2014). However, even in these contexts, scholars note persistent communication gaps between theoretical research and its practical application (Cohen *et al.*, 2017). Some argue that academic language and methodological complexity often alienate practitioners, while others emphasize the need for more practitioner-oriented summaries and implementation guides (Nelson *et al.*, 2019).

Regionally, the MENA context presents a less optimistic picture. Studies such as Anwar and Abdullah (2020) and Abu Bakar *et al.* (2018) point to enduring structural barriers including limited funding for research, weak digital infrastructure, lack of access to peer-reviewed databases, and low engagement between universities and professional associations. A comparative analysis between North African and Gulf countries by Al-Khoury (2019) showed that while the Gulf states are increasingly adopting international audit technologies due to regulatory pressures and foreign investments, North African states—including Lebanon—continue to struggle with fragmented policies and limited institutional capacity. Critically, these regional studies reveal that even when research is produced locally, it often lacks visibility, uptake, or perceived relevance among practitioners.

Turning to Lebanon specifically, the academic literature is notably thin. While some descriptive reports exist on the state of accounting education or regulatory practices, there is a paucity of peer-reviewed empirical studies examining how Lebanese auditors perceive and use academic research. An internal review of Arab research databases and publications from the LACPA confirms this gap. In practice, most technological innovations in Lebanese audit firms appear to be driven by external donor projects, firm-level initiatives, or compliance requirements—rather than evidence-based national strategies grounded in scientific research. This raises questions about the real-world impact of academic output and the mechanisms (or lack thereof) for knowledge transfer in the Lebanese context.

Equally important is the way scientific publications themselves are framed and received. While global studies largely present them as authoritative, structured contributions to the professional body of knowledge, regional and

local voices often regard them with skepticism. Some auditors perceive them as overly theoretical, disconnected from local realities, or published in inaccessible formats. For instance, several qualitative studies in comparable settings—such as Tunisia, Jordan, and Iraq—indicate that language barriers, paywalled content, and the absence of contextual examples limit the engagement of auditors with scholarly work (Hassanein & Elgammal, 2021; Majzoub et al., 2022). These findings align with Knowledge Transfer Theory, which posits that for knowledge to be adopted, it must not only be available but also relevant, actionable, and supported by institutional infrastructure.

In summary, while the global literature on audit innovation and academic impact is rich and diverse, it remains highly concentrated in developed countries. The regional literature identifies critical structural and cultural barriers to knowledge dissemination but stops short of offering empirical data from Lebanon. Moreover, the field still lacks comparative analyses of how different types of publications (e.g., conceptual frameworks vs. empirical studies) are interpreted and used by practitioners. This gap in both content and context highlights the need for studies that explore local perceptions and experiences of auditors—particularly in fragile states where institutional support for innovation and research utilization is weak.

This study seeks to contribute to that effort by empirically investigating how Lebanese auditors perceive the role of scientific publications in adopting emerging technologies. By building on both theoretical foundations and existing literature, it provides a critical, contextualized view of the opportunities and limitations that shape knowledge transfer in the Lebanese audit ecosystem.

## RESEARCH METHOD

### Research Approach

This study employs a qualitative research design to explore how Lebanese auditors perceive and engage with scientific publications related to emerging technologies in auditing. A qualitative approach was chosen because it allows for in-depth exploration of perceptions, motivations, and context-specific barriers—elements that are particularly relevant in fragile institutional environments like Lebanon. It is especially suited

for studies aiming to understand subjective experiences and nuanced interrelations that are not easily captured through quantitative metrics.

### Participant Selection and Data Saturation

Fifteen participants were selected using purposive sampling. All were registered members of the LACPA with a minimum of five years' professional experience in external auditing. Participants were drawn from Beirut, Tripoli, Zahle, and other major Lebanese cities to ensure diversity in terms of regional representation and organizational background (e.g., international firms, local practices, public-sector auditors).

The number of participants was determined based on the principle of *data saturation*—the point at which no new themes or insights emerge from additional interviews. Saturation was monitored continuously during data collection and was deemed to have been reached after the twelfth interview, at which point subsequent interviews yielded recurrent findings. Nevertheless, three additional interviews were conducted to confirm thematic consistency and enhance the credibility of the results, as recommended by Guest, Bunce, and Johnson (2006).

### Interview Design and Validation

Data were collected through semi-structured interviews lasting between 45 and 60 minutes. The interview guide was developed through a multi-step process informed by the literature on knowledge transfer (Argote & Ingram, 2000), audit innovation (Issa et al., 2016), and prior exploratory studies in emerging markets. An initial pool of questions was formulated to cover five core thematic areas: auditors' awareness of scientific publications on auditing technologies; their perceptions of the relevance and applicability of academic research; their experiences with integrating scientific findings into practice; the barriers they encounter in accessing and using scientific publications; and their recommendations for improving alignment between academic research and professional practice.

The guide was reviewed by two academic experts in audit and qualitative research for content validity and alignment with the research objectives. It was then piloted with two experienced auditors not included in the main

sample to ensure clarity, relevance, and flow. Minor adjustments were made based on their feedback, including the simplification of terminology and the reordering of questions to improve engagement.

#### **Data Collection Procedures**

Interviews were conducted in Arabic or English, depending on participant preference, and took place either in person or via secure video conferencing platforms. Informed consent was obtained prior to each interview. All interviews were audio-recorded and transcribed verbatim to preserve the authenticity of participants' narratives. Transcriptions were translated into English when necessary and verified for linguistic and conceptual accuracy by a bilingual researcher.

#### **Analytical Strategy**

The data analysis followed the thematic analysis model articulated by Braun and Clarke (2006), which is well suited to identifying recurring patterns and constructing a grounded understanding of perceptions within a specific cultural and professional context. The analysis proceeded through several iterative phases: familiarization with the data, initial open coding of meaningful text segments, development and refinement of themes through axial coding, and validation of thematic coherence by constant comparison with the data and relevant theoretical constructs. This structured approach ensured that both inductive insights and deductive elements from the study's conceptual framework were integrated into the findings.

#### **Familiarization and Coding**

All transcripts were read multiple times to facilitate immersion in the data. An *open coding* process was initially used to label meaningful units of text, guided by both participant language and the research questions. Codes were descriptive at first but evolved into more interpretive categories as the analysis progressed.

#### **Thematic Development**

Following initial coding, an axial coding process was conducted to group related codes and identify relationships among them. Themes were developed iteratively, combining inductive insights from the data with deductive guidance

from existing literature on audit innovation and knowledge dissemination. This process resulted in the identification of four primary themes: limited accessibility of scientific publications, reflecting auditors' challenges in obtaining peer-reviewed research due to cost, language, and institutional barriers; lack of contextualization to the Lebanese environment, highlighting the perceived irrelevance of much academic research to local audit practices and constraints; weak academic-practitioner linkages, underscoring the minimal interaction and collaboration between universities and audit professionals; and conditional openness to technological integration, capturing auditors' cautious willingness to adopt innovations provided they are adequately supported, localized, and practical. These themes capture both the explicit concerns voiced by participants and the structural conditions shaping their professional engagement with scientific research.

#### **Triangulation and Secondary Data Sources**

To enhance the *credibility and validity* of the findings, methodological triangulation was applied. In addition to the interviews, *secondary data sources*—including LACPA training manuals, public statements, internal newsletters, and conference agendas—were reviewed. These documents were analyzed to contextualize participant claims and assess the presence (or absence) of institutional mechanisms that facilitate knowledge transfer.

For example, references in LACPA's 2022 and 2023 professional training schedules were cross-examined with interview data to determine whether recent academic research on AI, blockchain, or audit data analytics was reflected in continuing education offerings. The findings revealed that while global terminology is sometimes referenced, there is little evidence of structured integration or citation of peer-reviewed literature, reinforcing the interview-based themes.

#### **Trustworthiness and Rigor**

The study employed multiple validation strategies to ensure the trustworthiness of the data:

- **Member Checking:** A subset of participants was re-contacted and asked to review initial

theme summaries to confirm interpretive accuracy.

- **Peer Debriefing:** Coding strategies and thematic maps were reviewed by two independent qualitative researchers to minimize bias and strengthen analytical rigor.
- **Reflexivity:** The researcher maintained a reflexive log throughout the study to document positionality, analytical decisions, and challenges encountered. This enhanced transparency and allowed for a critical examination of researcher assumptions.
- **Audit Trail:** All coding decisions, thematic frameworks, and supporting quotations were systematically archived for future review and verification.

#### Ethical Considerations

All participants were assured of confidentiality and anonymity. Names and any potentially identifying information were removed from transcripts and replaced with pseudonyms. Participation was entirely voluntary, and interviewees had the right to withdraw at any

point without consequence. All data were stored securely in encrypted digital files accessible only to the primary researcher (Creswell & Poth, 2018).

## DATA ANALYSIS AND RESULTS

### Participant Profile and Contextual Grounding

To establish a robust foundation for thematic analysis, this study engaged 15 Lebanese auditors selected through purposive sampling. The selection criteria ensured participants had a minimum of five years of professional auditing experience and represented diverse geographic locations, firm sizes, and levels of technological engagement. The demographic composition is summarized in Table 1, which offers insight into participants' backgrounds and provides essential contextualization for interpreting their perspectives.

This demographic spread ensures that the results reflect not only the views of metropolitan auditors but also those practicing in regional and less digitally resourced areas as shown in Table 1. Participant Demographic Profile.

Table 1: Participant Demographic Profile

Participant ID	Gender	Years of Experience	Location	Familiarity with Emerging Technologies
P1	Male	12	Beirut	Moderate
P2	Female	7	Tripoli	High
P3	Male	20	Zahle	Low
P4	Female	5	Beirut	Moderate
P5	Male	10	Saida	High
P6	Male	6	Tyre	Low
P7	Female	8	Jounieh	Moderate
P8	Male	11	Beirut	High
P9	Male	15	Tripoli	Low
P10	Female	9	Zahle	Moderate
P11	Male	13	Beirut	Moderate
P12	Female	6	Batroun	Low
P13	Male	18	Saida	High
P14	Female	10	Jounieh	Moderate
P15	Female	14	Beirut	High

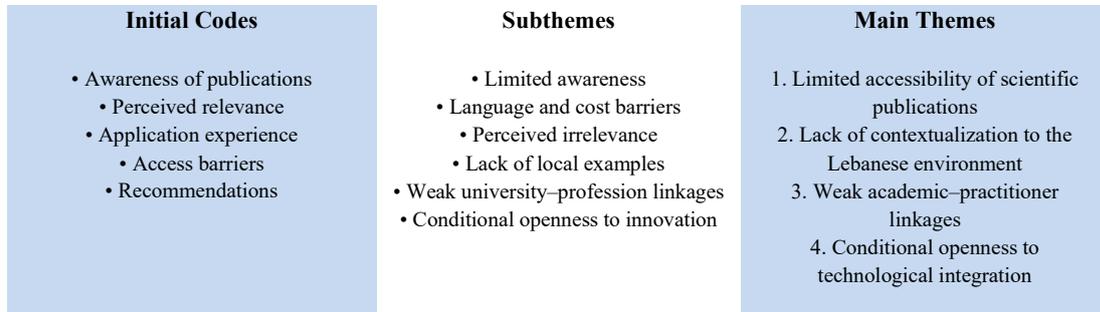


Figure 1: Thematic Coding Tree

### Analytical Framework and Rigor

Thematic analysis was employed following Braun and Clarke’s (2006) six-step method. Initial open coding of all transcribed interviews produced over 150 codes, which were iteratively clustered using axial coding techniques. This was guided by both inductive insights from the data and deductive constructs derived from the theoretical frameworks—namely, Knowledge Transfer Theory and Diffusion of Innovation Theory. A coding tree (Figure 1) visually represents the analytical pathway, illustrating how specific code clusters contributed to the emergence of four dominant themes. These themes were validated through triangulation with secondary sources such as LACPA’s educational materials, as well as through member checking and peer debriefing. See Figure 1 for the thematic coding tree.

### Thematic Presentation and Participant Perspectives

#### *Theme 1: Limited Accessibility of Scientific Publications*

*Reported by 14 out of 15 participants (93%)*

The dominant theme across interviews was the restricted access to peer-reviewed audit research. Auditors emphasized that subscription-based journal platforms and a lack of institutional access through LACPA or local universities severely limited their ability to engage with academic knowledge.

“We are always reading about solutions created in New York or London, but our audit

“Most of the time, we hear about these articles during international conferences or through colleagues abroad. Locally, we have almost no way to access such resources unless we pay for them individually, which is not feasible.” – P3

Beyond cost, linguistic complexity also emerged as a significant barrier. The majority of relevant literature is available exclusively in English, using highly specialized vocabulary, which alienates practitioners more comfortable in Arabic or French.

“Even when we find a paper, the academic jargon is too complicated. We need something more digestible—something practical.” – P10

“These articles are not made for us; they’re made for other researchers. They don’t help us with clients or audit files.” – P11

#### *Theme 2: Lack of Contextualization to the Lebanese Environment*

*Cited by 13 participants (87%)*

Participants frequently noted that global audit research lacked relevance when applied to Lebanon’s specific institutional, regulatory, and infrastructural landscape. Despite recognizing the intellectual merit of international studies, respondents expressed frustration at the absence of localized content or case studies.

“Some papers suggest using blockchain in real-time auditing. That’s great in theory, but how can we apply that here where we don’t even have a stable internet connection in some offices?” – P6  
 clients are often family businesses still working with handwritten invoices.” – P12

Participants called for academic research that reflects the operational challenges of Lebanese auditors, such as outdated IT infrastructure, regulatory ambiguity, and market informality.

“If you want us to use your findings, you need to study us—not just adapt Western templates.” – P1

*Theme 3: Weak Academic–Practitioner Linkages Expressed by 12 participants (80%)*

A significant proportion of interviewees described a persistent divide between academia and professional practice in Lebanon. Several participants were unaware of any collaborative initiatives between universities and audit firms, and few had engaged directly with academic researchers.

“There’s a wall between the university and the profession. We don’t see professors attending our workshops or inviting us to share our field experience with students.” – P8

“Maybe the research is there, but no one is bringing it to us in a way we can use. The universities need to do more than publish—they need to connect.” – P13

This disconnect was attributed to a lack of structured dialogue mechanisms, inadequate funding for collaborative projects, and differing incentive systems between academic and professional communities.

“Academics publish for journals. Practitioners work for clients. Unless someone forces us to meet, we will stay in different worlds.” – P5

*Theme 4: Conditional Openness to Technological Integration*

*Supported by 11 participants (73%)*

Despite expressing frustration at the barriers to innovation, most participants indicated a cautious optimism about the integration of emerging technologies in audit practices—if introduced through practical, accessible, and well-contextualized channels.

“I believe in AI—it can help us reduce human error. But without proper training or local examples, it’s just a buzzword.” – P2

“We’re not against technology. We just want to see how it works for us, with our laws, our clients, and our constraints.” – P14

This theme illustrates a critical point: Lebanese auditors are not resistant to innovation; rather, they seek meaningful support systems—training, case studies, regulatory alignment—that make integration feasible.

“Give us real tools, not theoretical lectures. We want to work smarter, but not be overwhelmed by complexity.” – P9

**Thematic Distribution and Frequency**

To lend analytical transparency and weight, the frequency of theme occurrence was mapped and tabulated. This not only clarifies the breadth of each theme but also supports thematic prioritization for policy and academic engagement as shown in Table 2. Theme Frequency Across Participants)

**Table 2: Theme Frequency Across Participants**

Theme	Number of Participants	Percentage of Sample
Limited Accessibility of Scientific Publications	14	93%
Lack of Contextualization to the Lebanese Environment	13	87%
Weak Academic–Practitioner Linkages	12	80%
Conditional Openness to Technological Integration	11	73%

### **Visual Representation: Coding Framework**

To enhance analytical clarity and provide readers with a transparent view of the data structure, a thematic coding tree is included as Figure 1 helped us to realize the table 3. This visual map shows how initial codes—derived from raw interview data—were aggregated into thematic clusters, leading to the final four themes. The figure serves as a vital tool for validating the analytical rigor and coherence of theme development.

### **Triangulation and Secondary Validation**

To further ensure the trustworthiness of the findings, triangulation was employed by cross-checking interview data with secondary documentary evidence. Specifically, the study reviewed LACPA's 2022 and 2023 professional training manuals, annual reports, internal newsletters, and conference agendas. These documents were analyzed to assess whether emerging audit technologies and related academic research had been systematically integrated into professional development programs or regulatory communications. The review confirmed that while topics such as AI and blockchain were occasionally mentioned in conference themes and training outlines, there was little evidence of direct reference to peer-reviewed academic literature or structured academic-practitioner collaborations. These findings from the secondary data sources corroborated the interview-based themes of limited accessibility, weak linkages, and lack of contextualization.

### **Synthesis of Key Insights**

Building on the findings, the discussion critically interprets how each of the emergent themes reflects deeper institutional, cultural, and systemic dynamics influencing auditors' engagement with academic research and technological innovation. Rather than treating participant narratives as merely descriptive, the analysis links their experiences to the theoretical framework, highlighting how limited accessibility and weak linkages mirror barriers predicted by Knowledge Transfer Theory, while conditional openness aligns with principles of Diffusion of Innovation Theory. This interpretive lens underscores the interplay between structural constraints and individual agency, advancing the

conversation beyond thematic description to theoretical and practical implications.

This study set out to investigate how scientific publications influence the adoption of emerging audit technologies in Lebanon, guided by five research objectives: (1) to assess auditors' awareness and access to academic research, (2) to evaluate the perceived relevance and applicability of academic findings, (3) to identify barriers hindering integration of research into practice, (4) to explore auditors' openness to technology adoption informed by research, and (5) to recommend ways to strengthen knowledge transfer in the Lebanese audit profession.

The findings reveal that Lebanese auditors face significant barriers to accessing and applying academic knowledge. As outlined in Theme 1, limited accessibility of scientific publications—due to high subscription costs, language barriers, and lack of centralized access—aligns with prior observations in the regional literature (Anwar & Abdullah, 2020; Hassanein & Elgammal, 2021). This supports the relevance of Knowledge Transfer Theory, which emphasizes that knowledge must be accessible, relevant, and actionable to effect change (Argote & Ingram, 2000).

Theme 2, the lack of contextualization of academic research to the Lebanese environment, reflects similar critiques found in MENA-focused studies (Majzoub et al., 2022; Al-Khoury, 2019). These findings reinforce the idea that without localization and contextual sensitivity, academic research struggles to resonate with practitioners' realities, despite its intellectual merit.

Theme 3, weak academic-practitioner linkages, underscores the institutional divide between universities and audit professionals—a pattern echoed in global studies on research-practice gaps (Cohen et al., 2017; Nelson et al., 2018). The absence of formal collaboration mechanisms and minimal engagement channels inhibit the diffusion of knowledge, as predicted by Knowledge Transfer Theory and observed in other fragile contexts.

Finally, Theme 4 highlights a conditional openness among Lebanese auditors to adopting emerging technologies. This finding aligns with Diffusion of Innovation Theory (Rogers, 2003; García-Avilés, 2020), which posits that perceived complexity and lack of trialability can delay adoption despite recognition of potential

**Table 3: Frequency and Support of Emergent Themes**

Theme	Description	Participant Support
<b>Limited Accessibility of Scientific Publications</b>	Access to peer-reviewed research is constrained by high subscription costs, lack of institutional access, and complex academic language, leading auditors to rely on informal sources.	14 of 15 participants (93%)
<b>Lack of Contextualization to the Lebanese Environment</b>	Academic research is perceived as disconnected from Lebanon’s legal, infrastructural, and economic realities, limiting its practical relevance.	13 of 15 participants (87%)
<b>Weak Academic–Practitioner Linkages</b>	Minimal collaboration exists between universities and audit professionals, with limited mechanisms for applied knowledge exchange.	12 of 15 participants (80%)
<b>Conditional Openness to Technological Integration</b>	Auditors are willing to adopt emerging technologies if supported by practical training, localized frameworks, and regulatory alignment.	11 of 15 participants (73%)

advantages. It also resonates with findings from Issa, Sun, and Vasarhelyi (2016), who argue that practical support and training are crucial for successful technology adoption in auditing.

By connecting these findings back to the study’s research objectives, this discussion demonstrates how the empirical results confirm, refine, and extend both theoretical frameworks and existing regional literature. The analysis not only substantiates the persistence of structural and cultural barriers but also highlights auditors’ readiness to innovate if supported with localized, accessible, and practice-oriented research. This contributes to the academic discourse by providing context-specific evidence from Lebanon, where empirical insights have been scarce as shown in Table 3. Frequency and Support of Emergent Themes.

## CONCLUSION

This study set out to explore how scientific publications influence the integration of emerging technologies in the auditing practices of Lebanon—a country facing complex institutional, economic, and infrastructural challenges. Drawing on semi-structured interviews with 15 experienced auditors and guided by Knowledge Transfer and Diffusion of Innovation theories, the study uncovered four key themes: limited accessibility to scientific publications, lack of contextualization of academic content to the Lebanese environment, weak academic–practitioner linkages, and a

conditional but genuine openness to technological adoption within the profession.

These findings align closely with the study’s objectives: (1) to assess the perceptions of Lebanese auditors regarding academic literature on audit innovation, (2) to evaluate the actual reach and influence of such publications on professional practice, and (3) to propose actionable strategies to bridge the persistent gap between research and the realities of the field. The results demonstrate that while Lebanese auditors recognize the value of emerging technologies, they often lack the institutional and practical frameworks necessary to benefit from academic knowledge. Importantly, this disconnect is not a result of resistance to innovation, but rather a product of limited access, relevance, and engagement.

## Theoretical Contributions

This study contributes to the audit literature by applying two underutilized theoretical lenses—**Knowledge Transfer Theory** and **Diffusion of Innovation Theory**—to an empirical context in Lebanon. It demonstrates how structural and contextual barriers shape knowledge diffusion in fragile economies, and how professional perceptions can both hinder and enable the adoption of innovation. In doing so, it enriches the existing literature on audit transformation by foregrounding the role of research accessibility, relevance, and practitioner engagement in low-resource settings.

### Practical Implications

The findings offer a range of actionable insights for key stakeholders:

- **For LACPA:** Develop centralized access to academic research databases, integrate peer-reviewed research into continuing education programs, and launch joint initiatives with universities to encourage applied audit research.
- **For Universities:** Foster outreach programs with audit professionals, contextualize global research to reflect Lebanon's specific institutional challenges, and co-design executive education modules with LACPA.
- **For Policymakers:** Support academic-practitioner collaborations through funding schemes, regulatory incentives, and innovation hubs focused on professional service industries like auditing.

By initiating these changes, the Lebanese audit ecosystem can begin to close the research-practice gap and better align with international trends in audit innovation and technological integration.

### Methodological and Contextual Limitations and Future Research Directions

As with all qualitative research, this study is not without limitations. The sample size, while sufficient for thematic saturation, limits the generalizability of findings across all regions and sectors in Lebanon. The reliance on self-reported data introduces the potential for subjectivity and social desirability bias. Furthermore, while triangulation with secondary data and member checking were used to enhance validity, future research could benefit from incorporating observational methods or mixed-method approaches for greater depth and breadth. Future research could employ mixed methods, examine auditor-client dynamics in tech adoption, or explore case studies of successful academic-practice partnerships in the MENA region.

Given the exploratory nature of this study and the scarcity of regional literature on the topic, several avenues for future research are recommended:

- Conduct quantitative surveys on a national scale to measure levels of awareness and use of academic research in audit practices.
- Explore comparative case studies between countries in the MENA region to assess

how institutional frameworks affect knowledge transfer.

- Investigate the effectiveness of collaborative pilot programs between universities and audit firms, especially those involving AI and blockchain education.
- Examine the role of language and translation in mediating access to global audit research among Arabic-speaking professionals.

This study sheds light on a critically under-researched dimension of audit transformation: the real-world impact of academic research in settings where institutional fragility coexists with professional aspiration. Lebanon's audit profession is not lacking in motivation, but in the systems and support needed to turn research into reform. Bridging this gap requires not just more publications, but more partnerships.

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## **Appendix A — Interview Guide**

### **Introduction**

The following interview guide was developed to explore Lebanese auditors' perceptions of and engagement with scientific publications on emerging audit technologies. The questions were designed based on a review of relevant literature on knowledge transfer and audit innovation and were validated through expert review and pilot testing. Interviews were conducted in Arabic or English, depending on participant preference, and all participants provided informed consent prior to the interview. Follow-up prompts and probes were used where appropriate to encourage elaboration.

### **Interview Questions**

1. **Awareness of Scientific Publications**
  - ✓ Are you aware of any scientific or academic publications that focus on emerging technologies in auditing, such as artificial intelligence, blockchain, or big data analytics?
  - ✓ How do you usually learn about new developments or research in auditing technologies?
2. **Perceived Relevance and Applicability**
  - ✓ In your opinion, how relevant and applicable are academic research findings to your day-to-day audit practice?
  - ✓ Can you think of examples where academic research has influenced your work, positively or negatively?
3. **Experience with Integrating Scientific Findings**
  - ✓ Have you ever applied insights or recommendations from a scientific publication in your audit work? If so, how?
  - ✓ What factors make it easy or difficult for you to apply academic research in practice?
4. **Barriers to Accessing and Using Scientific Publications**
  - ✓ What challenges, if any, do you face in accessing academic research or scientific publications on audit technology?
  - ✓ Are there language, cost, or institutional barriers that prevent you from benefiting from these publications?
5. **Recommendations for Improving Academic–Practitioner Alignment**
  - ✓ What suggestions would you make to improve the connection between academic research and professional audit practice in Lebanon?
  - ✓ How can universities, professional associations, and policymakers better support you in adopting emerging technologies informed by academic research?

**Closing Remark:** At the conclusion of each interview, participants were invited to share any additional thoughts or insights they felt were relevant to the study topic. They were also thanked for their time and valuable contributions to this research.