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Artificial Intelligence and Digital Transformation in Accounting and Auditing: A Critical Review of Studies Published in Iraqi Journals (2015-2026)

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Abstract

Purpose: This review evaluates research published in Iraqi scholarly journals that link artificial intelligence (AI) and related digital technologies to accounting, auditing and financial oversight, and asks what conclusions that body of evidence can and cannot support.

Design/methodology/approach: Studies were identified from a previously audited full-text working set, documents added to it subsequently and a targeted search of eighteen Iraqi journal platforms and the Iraqi Academic Scientific Journals (IASJ) repository. Each study was coded for publication year, journal, research design, accounting or oversight domain, study setting and technology and appraised with explicit rules separating the type of technology exposure from the type of outcome measured.

Findings: The last set includes 81 studies published between 2015 and 2026, 39 of which were full text reviewed and 42 journal-page and abstract level reviewed. Output has accelerated sharply with 55 studies (67.9%) published in 2025-2026. Most studies used questionnaires (48 studies, 59.3%) with a median of 76 usable responses; only 3 studies measured outcomes from published financial records. Most studies focus on respondents' expectations of AI rather than actual use. A few prediction models provide training results as evidence of accuracy, several report non-significant relationships, and some have internal inconsistencies between the text and tables. None of the studies in the set linked documented use of AI to an independently measured audit outcome.

Originality/value: The review gathers together a scattered and mostly unindexed national literature and distinguishes publication in an Iraqi journal from an Iraqi research environment. Its re-positions the research gap: the problem is not the lack of applied Iraqi work, but the lack of evidence connecting clearly measured AI use to audit outcomes observed independently of respondents. A staged design is proposed for research of Iraq Stock Exchange (ISX) firms.

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Keywords: Artificial intelligence, Audit quality, Digital transformation, Iraqi journals, Critical review, Iraq Stock Exchange

1. Introduction

Within a few years, artificial intelligence has moved from a passing mention in Iraqi accounting-information-systems research to a subject with its own special issues and conference tracks. The shift reflects real pressure on the profession. Iraqi banks are expanding electronic services, the Federal Board of Supreme Audit (FBSA) handles a growing volume of government data, and firms listed on the Iraq Stock Exchange face demands for faster and fuller disclosure. Under these conditions, knowing what local research has actually established is a practical matter, not an academic courtesy.

Accumulating studies, however, is not the same as accumulating knowledge. When titles converge while variables diverge, and when the label "artificial intelligence" covers everything from expert systems to generative language models, a review is needed that separates what each study measured from what it concluded. Many Iraqi studies end with similarly worded positive conclusions, yet they differ widely in sample, instrument and time frame. Citing them together as evidence of a single "effect of AI" is therefore imprecise.

1.1 Review Questions

This review addresses four questions:

- What are the technologies and what accounting, auditing and oversight fields have been studied in Iraqi journals?
- What are the dominant research designs and measurement instruments and what are the limits to inference?
- Where do the findings agree and where do they disagree, are not significant or are under-supported?
- What is the research gap that can be defended on this evidence? What design will address it?

1.2 Contribution

The review has three contributions. First, it brings together in one place studies that are published in eighteen Iraqi journals, many of which are not indexed in international databases, and therefore reduces the cost of entry for later researchers. Second, it is not limited to description: each study is coded under explicit rules that distinguish the kind of technology exposure from the kind of outcome observed. Third, it proposes a phased research design that is applicable to data from ISX-listed firms and can be directly adopted by graduate students and faculty.

2. Review Method

2.1 Sources

Studies came from three complementary sources. The first was a working set of full texts that had already been subjected to a documentary audit, covering bibliographic identity, design, sample and findings, and comparing figures in the text with the tables. The second comprised documents added to the same folder afterwards. The third was a targeted search, in Arabic and English, of the websites of Iraqi accounting, economics and administration journals and of IASJ. Search strings combined AI terms with audit and accounting terms (for example, the Arabic and English forms of "AI and audit quality", "continuous auditing", "blockchain and audit" and "big data and audit procedures"), and every candidate was opened on its journal page to confirm authors, title, volume, issue, pages and abstract. A second, independent pass re-checked the metadata of all web-located records and corrected author order and titles where they differed from the journal page.

2.2 Eligibility

A study was included if it (a) appeared in a peer-reviewed Iraqi journal; (b) examined AI or a closely related digital technology – machine learning, neural networks, expert systems, robotic or intelligent process automation, big data and business intelligence, cloud computing, blockchain or generative AI; and (c) addressed an accounting, auditing, internal-control or financial-oversight outcome. Studies with an Iraqi setting published outside Iraq were excluded, as were studies of AI in unrelated domains such as leadership, marketing, job security or financial inclusion. Studies published in Iraqi journals about other countries were retained but coded separately, because distinguishing the place of publication from the place of study is one of the principles of this review.

2.3 Selection

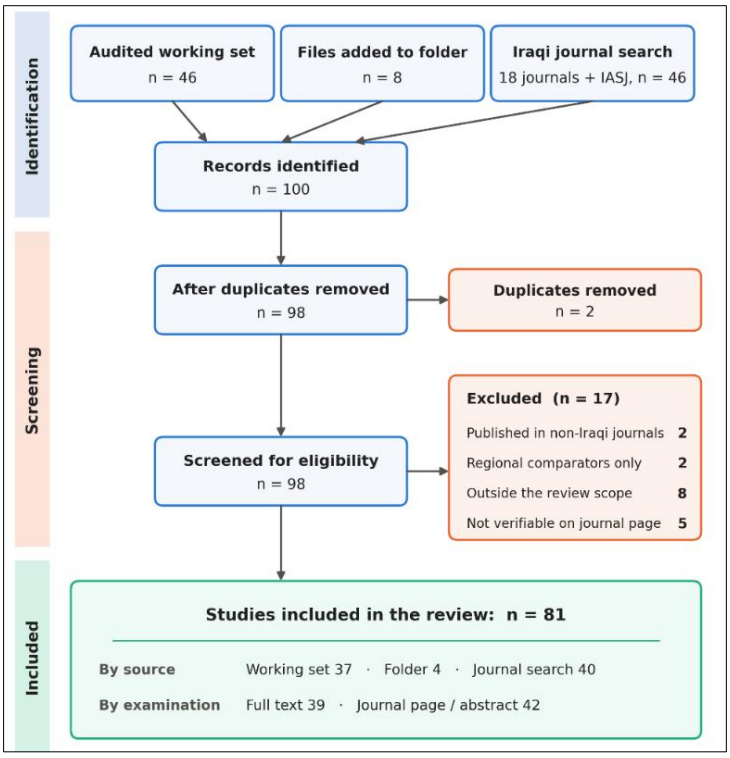


Fig 1: Identification, screening and inclusion of studies

Figure 1 summarises the selection. Nine were discarded from the working set of 46 records: two were published in non-Iraqi journals (Sudan and Algeria), two studies were regional (UAE and Jordan) and retained for comparison purposes only [10, 65], and five were macroeconomic forecasting, leadership, marketing or banking innovation, rather than accounting or audit. Three of the eight AI related documents added to the folder were out of scope and one was a duplication of a record found in the web search. 46 new potential candidates were identified from the web search, not including those already in the working set; one was a duplicate of a folder document, and five could not be verified on a journal page. Titles not clearly related to the subject were not recorded. The folder also contained papers on performance measurement and the balanced scorecard from another project, which were excluded at the title level.

Hence the final set contains 81 studies. The 42 studies assessed at the journal-page level provide less information on samples and results, so no judgment that depends on accessing tables is based on them. They are used for description, classification and what their abstracts explicitly state. The coding of each study is provided in Appendix A.

2.4 Coding and Appraisal Rules

Six dimensions were coded for each study: year, journal, research design, domain, setting and technology. Throughout there were four appraisal rules:

- We split technology exposure into four types: respondents' views on AI, AI disclosures in reports, recorded use of a specific tool, and the researcher's own application of an algorithm to existing data. Each answers a different question. They should not be pooled as "the effect of AI".
- Outcomes rated by respondents were separated from outcomes observed in an independent source such as the auditor's report, the financial statements or error logs.
- Statistical significance was not equated with practical importance. R^2 of 0.45 is not a 45% improvement and a regression coefficient of 0.104 is not a 10.4% increase unless the scale warrants such a reading.
- Some numerical inconsistencies were noted, as in the source, and not corrected by choosing the more convenient figure.

This is a critical review with a specific focus. This is not a systematic review in the sense of the PRISMA 2020 statement [68], nor a meta-analysis; a second independent screener was not used and a numerical quality score was not assigned to each study.

3. Descriptive profile of the literature

3.1 Growth over time

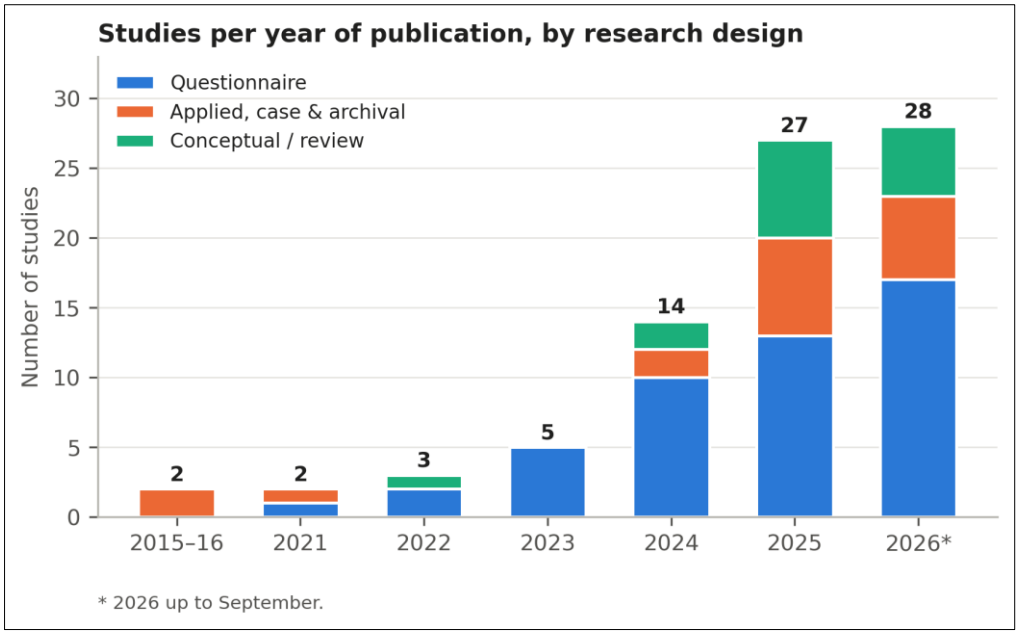


Fig 2: Studies by year of publication and research design (n = 81)

Figure 2 shows that interest in the topic is recent. Fifty-five of the 81 studies were published in 2025 and 2026, against four up to 2021. The literature is not without roots, however. The two earliest studies date from 2015 and 2016: one applied artificial neural network to actual financial data from two industrial companies [32], and the other applied an electronic audit system in oversight bodies of the FBSA [57]. Part of the recent surge comes from special, conference and supplementary issues, which carry 23 of the 81 studies (28.4%). The growth is also mostly growth in questionnaires: they account for 30 of the 55 studies published in 2025–2026.

3.2 Journals

Table 1: Distribution of studies by journal

Journal	Studies	%
Journal of Accounting and Financial Studies (Univ. of Baghdad)	20	24.7%
Iraqi Journal for Economic Sciences (Mustansiriyah Univ.)	10	12.3%
Al-Ghary Journal of Economic and Administrative Sciences (Univ. of Kufa)	8	9.9%
Al-Kut Journal of Economics and Administrative Sciences (Wasit Univ.)	7	8.6%
Al-Qadisiyah Journal for Administrative and Economic Sciences	5	6.2%
Tanmiyat Al-Rafidain (Univ. of Mosul)	5	6.2%
Al-Anbar University Journal of Economic and Administration Sciences	4	4.9%
Journal of Administration and Economics (Mustansiriyah Univ.)	3	3.7%
Journal of Business Economics for Applied Research	3	3.7%
Journal of Kut University	3	3.7%
Muthanna Journal of Administrative and Economic Sciences	3	3.7%
Tikrit Journal of Administrative and Economic Sciences	3	3.7%
Journal of Economics and Administrative Sciences (Univ. of Baghdad)	2	2.5%
Iraqi Journal for Administrative Sciences (Univ. of Kerbala)	1	1.2%
Journal Port Science Research (Uruk Univ.)	1	1.2%
Journal of the Iraqia University	1	1.2%
Khazayin of Economic and Administrative Sciences (Univ. of Diyala)	1	1.2%
Scientific Journal of Cihan University-Sulaimaniya	1	1.2%
Total (18 journals)	81	100%

The Journal of Accounting and Financial Studies of the University of Baghdad leads with twenty studies, followed by the Iraqi Journal for Economic Sciences with ten and Al-Ghary Journal with eight (Table 1). This concentration means that a researcher who searches a single database or journal will miss much of the output. Provincial journals – Al-Kut (seven studies), Muthanna and Diyala – have contributed a growing share since 2024.

3.3 Designs and Settings

Table 2: Research design by level of examination

Design	Full text	Journal page	Total	%
Questionnaire	20	28	48	59.3%
Conceptual	7	6	13	16.0%
Applied model	6	2	8	9.9%
Case study	2	5	7	8.6%
Financial records	3	0	3	3.7%
Review/bibliometric	1	1	2	2.5%
Total	39	42	81	100%

Setting: federal Iraq 58, Kurdistan Region 5, outside Iraq 8, not applicable (conceptual/review) 10.

The most striking pattern in Table 2 is the dominance of the questionnaire, used by 48 studies. Only three studies analysed published financial data [20, 41, 46]. Applied models number eight, case studies seven and conceptual papers thirteen. Fifty-eight studies were conducted in federal Iraq and five in the Kurdistan Region. Eight were set outside Iraq despite appearing in Iraqi journals – Bahrain [80], Palestine [71, 72], the Gaza Strip [13, 79], Jordan [9] and the US equity market [29] – and cannot be cited as evidence on practice in Iraq.

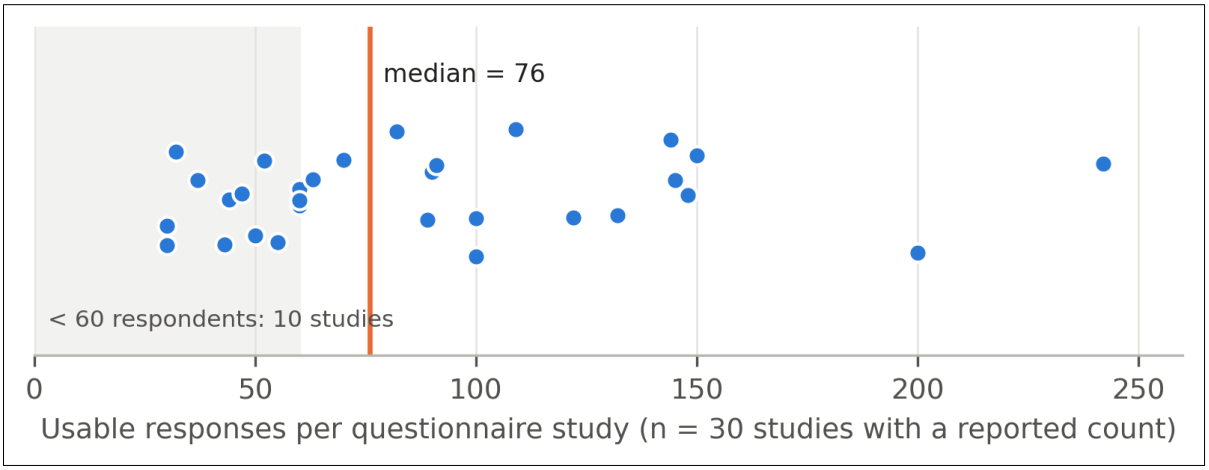


Fig 3: Usable sample sizes in questionnaire studies that report a count (n = 30)

Among the 30 questionnaire studies whose usable sample could be verified, the median is 76 respondents (Figure 3). Ten studies have fewer than 60 respondents and nineteen fewer than 100. In some cases the sample is 30 respondents from a single company [11] or a single bank branch [21], which limits generalisation. Response accounting is also uneven: one study reports a 91.33% response rate that corresponds to questionnaires returned (137 of 150), whereas only 109 were usable [36].

3.4 Domains and Technologies

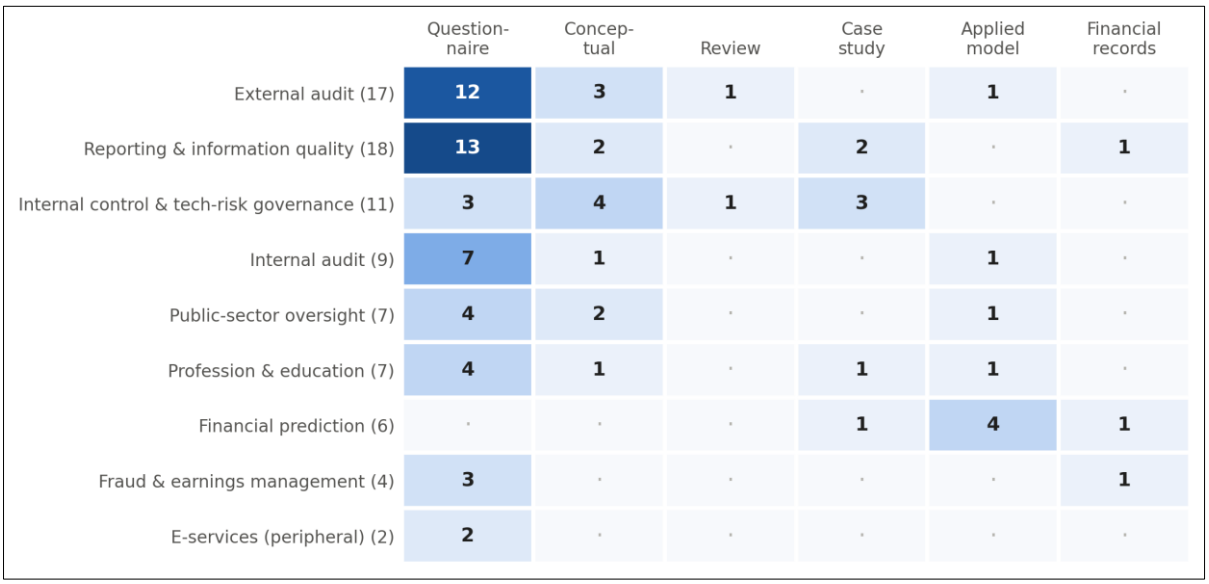


Fig 4: Evidence map: accounting or oversight domain by research design (number of studies)

Studies spread over nine domains (Figure 4). Financial reporting and information quality (18 studies) and external audit (17) lead, followed by internal control and technology-risk governance (11) and internal audit (9). The evidence map shows where the literature is thick and where it is thin: questionnaire cells are densely filled for external audit and reporting, while financial-record analysis appears in only three cells, each with a single study.

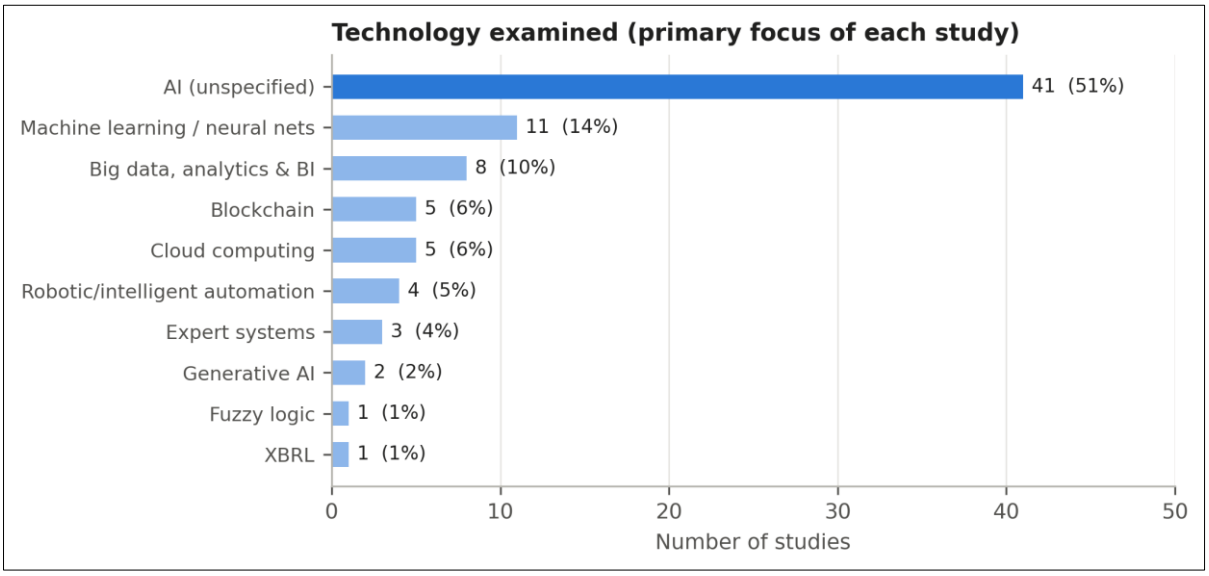


Fig 5: Technology examined as the primary focus of each study

In the technology dimension, 41 studies (51%) refer to "artificial intelligence" as a general term, without specifying a particular tool (Figure 5). That is important. A statement like, "AI impacts audit quality," doesn't tell the profession which tool to invest in, or which audit procedure is impacted. Fewer studies describe a technology: machine learning and neural networks (11), big data and business intelligence (8), cloud computing (5), blockchain (5) and robotic or intelligent automation (4). Generative AI, only in two studies.

4. Thematic Synthesis

4.1 AI and External Audit Quality

This theme is central to the literature and the studies have a common design: a questionnaire is used to ask auditors,

accountants or academics to rate the effect of AI techniques on dimensions of audit quality, then the data are analyzed using correlation or regression analysis. In one study in the FBSA, 100 questionnaires were distributed and 91 were kept [47]. Another survey distributed to practicing accountants included 60 and reported significant effects of natural language processing, expert systems, machine learning and robotic process automation on external audit quality [49]. In a prior study conducted in the Kurdistan Region, 52 chartered accountants and auditors were surveyed and it was found that AI improves planning, analytical procedures and documentation [26]. Additional studies concentrate on banks [2, 31, 59], the largest audit firms in Iraq [75], the auditors' perspective on digital auditing [45], and the role of AI in the auditor's communication with those charged with governance when they assess going concern based on 44 usable responses [58].

This stream is qualified by three observations on its consistency. Secondly, the auditor is not always the person who rates the quality of the audit. The responses of accountants in the audited entity when asked about the quality of external audits [49] are the impression of a third party, not the auditor's experience with the tools. Second, some of the published data are internally inconsistent. The same ANOVA values are observed in two tables for different hypotheses in a bank study of 55 respondents from 12 banks and the frequencies in a demographic table do not add up to the sample reported [2]. Third, a response rate is not an effect size: collecting 91% of questionnaires [47] is about data collection, not a 91% increase in audit quality.

Conceptual contributions discuss how machine learning and deep learning may improve the speed and accuracy of external audit [37], associate audit quality with sustainability [3], or review 29 studies from 2020–2025 [23]. A brief paper, presented as applied research in Iraqi commercial banks, fails to report any identifiable sample or measured data in its method section [43]. The papers add to the theory but do not provide measured evidence of improvement. The picture is clear. Iraqi research has shown convincingly that professionals are positive toward AI. It has not yet demonstrated, with independent evidence, that adoption has resulted in more accurate audit reports or more material misstatements detected.

This can be interpreted with the aid of two regional studies published outside Iraq, used here only for comparison. The UAE surveyed 63 auditors and found no significant difference in perceived AI contribution between local and international firms ($p = .810$) [65]. Jordan surveyed 124 auditors and found no significant difference between augmented and autonomous systems ($p = .162$) [10]. In general, therefore, positive attitudes could mask differences in acceptance between types of AI – differences that are rarely tested in the Iraqi studies.

4.2 Internal Audit, Internal Control and Technology-Risk Governance

The internal-audit studies are primarily targeted at banks and are concentrated in one institution. Three studies were conducted in the branches of the Commercial Bank of Iraq in Najaf and Babylon [14, 21, 42]. The three cases should not be looked at in isolation; similar results would be obtained in a common organizational environment using common systems, irrespective of any technological effect. In Kurdistan Region, a purposive sample of 37 private companies, one internal auditor from each company, questionnaire and checklist resulted in $r = .67$ and $R2 = .45$ [50]. That's a useful local association, but that doesn't mean AI increased internal-audit quality by 45%. More recent studies add evidence from other Iraqi banks [84], from auditors in several organizations focusing on deep and machine learning [82], from the internal-audit departments of the three largest telecommunications companies (50 auditors and accountants plus interviews, identifying weak technical skills and infrastructure as the main barriers) [6], and a theoretical paper linking internal audit to geopolitical risk in listed banks [17].

A relatively new stream of work, visible in the last two years, frames AI as a source of risk, not merely an audit tool. A study at Al-Mansour Investment Bank assessed internal control over AI risk using the twenty principles of COSO ERM, citing the NIST AI Risk Management Framework and ISO/IEC 42001; it recorded 63% control effectiveness and 37% control risk, with the strategy and objective-setting component being the weakest [27]. Another study that tested the role of management accounting in reducing AI risk was with 144 respondents [60]. A third study examined digital accounting as a mediator between AI and financial-risk management in listed banks using a structural equation modeling [74]. A fourth study proposed an integrated privacy and security framework for banking, while explicitly stating that its results are conceptual and not from measured bank data [77]. Related work includes two COBIT 2019 audit programs for electronic accounting information systems [66, 67], intelligent audit automation at Iraq's cyber emergency response team [22], a guideline for auditing cloud environments [62], and a bibliometric analysis of 233 Scopus papers demonstrating how few studies combine AI with IT governance in banking [16].

This stream is among the most developed in the set in that it shifts the question from "is AI useful?" to "how are its risks governed?" – the question banks and oversight bodies are actually faced with as they rely more on intelligent systems.

4.3 Government Oversight and The Federal Board of Supreme Audit

The public sector is well represented, which is reasonable given the volume of government data and the FBSA's mandate. After the early applied study using records from three oversight bodies for 2008–2012 [57], later work examined the effect of IT-revolution techniques – continuous monitoring, robotics, cloud computing and data mining – on the accounting-control profession inside the FBSA [39]; the role of digital techniques in activating continuous auditing, based on 32 academics and public-sector auditors [19]; and predictive analytics as a mediator between external audit and hidden accounting practices, with a purposive sample of 70 FBSA staff in Muthanna and Qadisiyah [44]. Other studies propose a model for developing public-budget audit tools [51], discuss AI and auditor development from a legal perspective [38], and survey 63 staff in the accounting and oversight sector [86].

Despite this variety, none of these studies connects the use of a technology to documented oversight outputs such as the number of material findings, amounts recovered or time taken to issue an audit report. The FBSA holds records of exactly this kind. Even partial, anonymised access for research would allow far stronger tests than questionnaires permit.

4.4 Fraud Detection and Earnings Management

This theme includes the most methodologically interesting studies, as it combines questionnaires, financial data and algorithmic models. In one study neural networks were applied to data of ten listed units for 2017–2018; the Beneish model indicated three units as possible earning managers and the network classification was consistent [41]. Agreement between two models, however, does not constitute manipulation. A network trained on the labels of another model reproduces those labels; it does not validate them.

A study which combined 148 questionnaires from 20 banks, financial data, and interviews, showed a negative relationship between AI adoption and discretionary accruals and real earnings management [81] in banking. Three points need to be clarified before the result can be given any weight: how individual answers were aggregated to represent a bank, which financial period was covered and whether accrual models designed for industrial firms suit banks. Another study examined the relationship between AI and administrative and financial corruption in educational units using SPSS and AMOS [18].

Conversely, the study of machine learning as a moderator between external-auditor independence and accounting fraud resulted in a non-significant interaction (B =.02, t =.496, p =.621) [5]. The large overall model does not retain the interaction hypothesis, and the coefficient cannot be interpreted as a 2% improvement. The value of this finding is that it reminds us that the presumed benefit of the technology cannot be taken for granted and that the publication of non-significant findings is essential to a balanced picture.

4.5 Financial Reporting and Information Quality

This is the largest theme (18 studies) and the most varied. Among listed banks, one study measured the level of AI disclosure in the annual reports of ten commercial banks for 2018–2023 (60 bank-years) and found significant positive correlations with return on assets (r =.527) and return on equity (r =.498), but no significant correlation with the third indicator (r =.207, p =.113) [46]. It is one of the few studies to use a source independent of respondents' opinions, yet it measures disclosure rather than implementation, and financial performance rather than audit quality. Another study examined AI-based control and the credibility of periodic financial statements at International Trust Bank for 2020–2024, combining statements with interviews [54]. A third studied AI and accounting-information asymmetry with 109 usable questionnaires from employees of Islamic banks in Baghdad [36].

In industry, one study tested the effect of expert systems on accounting-information quality via environmental sustainability with 100 respondents from listed industrial companies [28], and a Kurdistan Region study analysed machine learning, deep learning and neural networks in the financial reporting of industrial firms [61]. Other studies addressed AI strategy for accounting information systems from the viewpoint of academics in Iraqi universities and institutes [35], proactive reporting in Erbil [53], IFRS 7 implementation through governance mechanisms [69], sustainability reports of listed companies [78], reliability of reports in small and medium enterprises [11], digital accounting practices [55], XBRL [64], smart actuarial calculations at the Iraqi Insurance Company [12], and blockchain and the transparency of managerial reports [30].

This theme is where the gap between claim and evidence is most visible. A study of accounting-estimate accuracy reports unit-root tests and an ARDL model with a long-run coefficient of.62 and then calls the tables hypothetical [70]; the coefficient cannot be quoted as an empirical estimate. In the study on IFRS 7, the frequencies in one table add up to 205 and in another to 260, while the stated sample is 242 [69]. The proactive-reporting study reports 122 respondents in the text, but the table totals 124 [53]. These observations do not demonstrate that the conclusions are wrong, but they call for clarification before others build upon them. The SME study did two separate simple regressions on 30 respondents, for AI (R^2 =.428) and cloud accounting (R^2 =.621). The company description states that ERP and cloud options are still under consideration [11]. Respondents were thus rating expectations rather than an existing system.

4.6 Enabling Technologies: Blockchain, Cloud Computing, Big Data and Business Intelligence

Several digital technologies are not AI in the strict sense but form the infrastructure on which it runs. For blockchain, a survey of 43 respondents from audit offices and academia reported a strong correlation (r =.819) between the technology and audit-work quality, citing automated verification and whole-population testing instead of sampling [85]. Another study examined internal control as a means of reducing blockchain risk [56], and a third proposed a blockchain-based collaborative framework for cloud auditing [1]. For business intelligence, one study used Power BI to evaluate sustainable-finance activity for renewable energy in nine Iraqi banks within a green internal-audit approach [83] – one of the few studies that applied an analytical tool rather than asking respondents about it.

XBRL, although discussed in an AI context [64], is a language for standardising the representation of financial data, not an intelligent system; its complementarity with analytics needs separate evaluation. The same applies to cloud computing. Moving data to the cloud is not the same as using AI, even if it is a precondition for many AI applications.

4.7 The Profession, Accounting Education and Generative AI

A group of studies examines AI's implications for the accounting profession itself. A survey of 200 accounting academics in Iraqi universities found a significant but weak correlation (r =.162) between AI determinants and accounting applications, and warned that accountants who do not keep pace with technology risk losing their jobs [8]. Studies with 82 and 132 respondents reported that AI reduces manual work and human error [7, 40], while a conceptual paper discussed the challenges and prospects of automating accounting processes [63].

And the latest is generative AI. The most obvious one is a study that used ChatGPT to develop and debug a specialized accounting program in Excel VBA [48]. It demonstrates feasibility but does not compare productivity to a controlled baseline. A previous study asked 150 of 200 respondents about the use of Google Bard in accounting work and found a strong positive relationship [24]. However, asking users about the effect of a generative tool is weaker evidence than testing it on defined accounting tasks. This strand needs experimental studies that document the model version and prompts, test cases and failure criteria, and contrast outputs with independent expert scoring. The study of AI in accounting education and the Sustainable Development

Goals has been done in Bahrain [80] and does not describe Iraqi practice.

4.8. Financial Prediction and Peripheral Studies

In this theme researchers use the artificial intelligence algorithms as analytical tools, not as the object of study, and model validation becomes the central risk. In a research study with daily data of S&P 500 for 2015–2023, the root mean squared error for linear regression was 58.67, for an artificial neural network it was 36.89 and for XGboost it was 40.11 [29]. The relative reductions are around 37.1% and 31.6%, not "more than 35%" for both models. The paper contains two contradictory descriptions of the data split (80/20 and 70/15/15), without specifying whether time order was respected. The Iraqi Insurance Company [52] shows training results on annual data for 2014–2022, with a six-case confusion matrix and perfect classification metrics (100%). This cannot support a claim of general predictive accuracy. Other studies examined abnormal stock returns in ten listed banks and found no significant effect (B =.104, p =.302) [20]; applied fuzzy logic to cost–volume–profit analysis at the Samawah Cement Factory, reporting accuracy above 95% when predicting a single month, January 2025 [15] – encouraging, but one month is not enough to judge stable performance; and used random forests, XGBoost and neural networks to predict credit, liquidity and capital-adequacy risk in one bank for 2015–2024 [4], without reporting in the abstract how data were split or which accuracy metrics were used. If the data are annual, ten observations are too few to train and test models of this complexity. A further paper discusses financial decision-making in large global companies [73]. The two studies of electronic banking and insurance services [25, 76] concern service quality and adoption and do not measure audit quality.

5. Critical Appraisal of The Evidence

5.1 What Do the Studies Actually Measure?

Table 3: Types of evidence in the reviewed studies and the limits of each

Type of evidence	What it measures	What it cannot establish on its own	Examples
Respondent perceptions (questionnaire)	Acceptance, readiness, expected benefits, barriers	Actual use, or a measured change in audit quality	[47, 49, 50, 84]
Disclosure in annual reports	What the organisation says about its AI systems	Actual implementation, its scope and timing	[46]
Documented use of a named tool	A specific tool used for a defined purpose and period	A causal effect, without a comparative design	[54, 57, 83]
Algorithm applied by the researcher	A model's ability to classify or predict	Organisational adoption or any effect on auditing	[15, 29, 41, 52]
Conceptual analysis or proposed framework	Mechanisms and implementation requirements	Any measured effect	[37, 51, 62, 77]

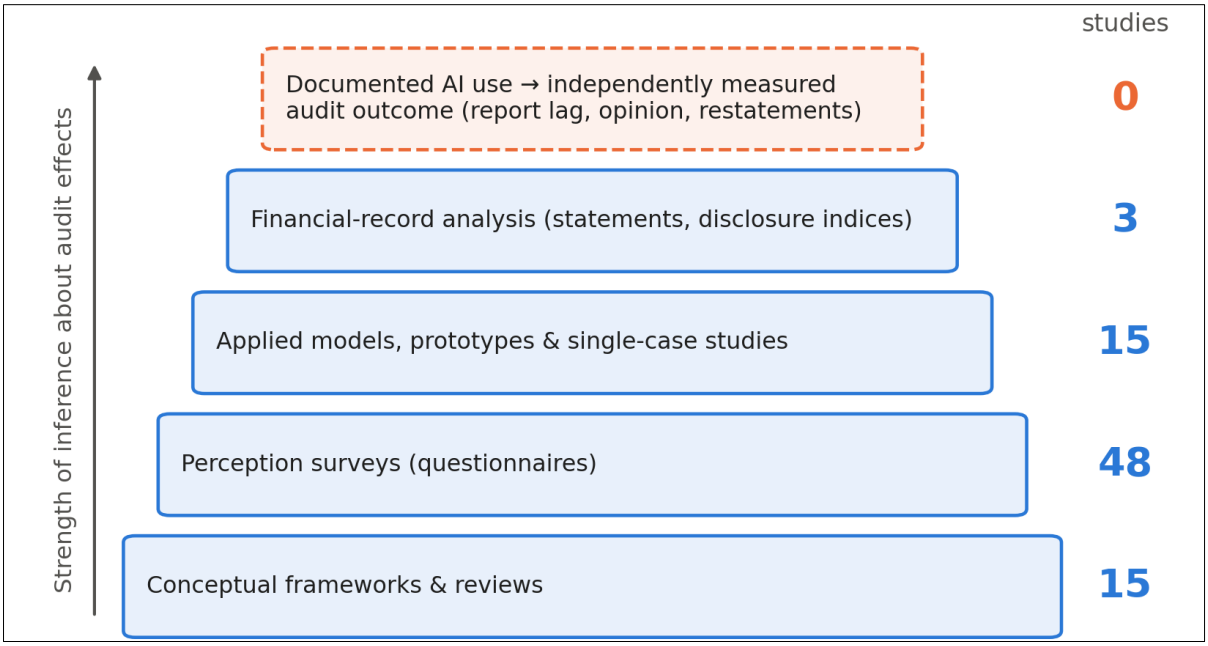


Fig 6: The evidence ladder: number of studies at each level of inference about audit effects

Table 3 and Figure 6 summarise the types of evidence. The key result is that most of the literature sits on the perception rung. These studies have real value: they measure readiness and acceptance and identify barriers – skills gaps, weak infrastructure and cost – that recur across the set [6, 31, 61, 82, 84]. But they do not answer the question of effect. A respondent who says that AI "improves" audit quality may be expressing an expectation rather than an experience, especially where the organisation does not use the technology at all. The top rung – documented use of a named tool linked to an independently observed audit outcome – is empty.

5.2 Quantitative Results Reported in The Full Texts

Table 4: Principal quantitative results in studies examined in full text

Ref.	Setting / data	Reported result	Caution for inference
[47]	FBSA staff; 100 distributed, 91 usable	Positive association of AI applications with external-audit quality	91% is a response rate, not an effect size
[81]	148 respondents, 20 banks, plus financial data	AI adoption negatively related to accrual and real earnings management	Aggregation to bank level and bank-suited accrual model unclear
[5]	Questionnaire, moderation model	ML × independence interaction: B =.02, t =.496, p =.621	Non-significant; overall F does not support the interaction
[20]	10 ISX banks, 2014–2023	AI techniques → abnormal returns: B =.104, p =.302	Non-significant; not a 10.4% effect
[29]	S&P 500 daily data, 2015–2023	RMSE: linear 58.67, ANN 36.89, XGBoost 40.11	Reductions 37.1% and 31.6%; conflicting split descriptions
[41]	10 ISX units, 2017–2018	Beneish flags 3 units; ANN agrees	Agreement with a model is not confirmed manipulation
[46]	10 banks, 60 bank-years, 2018–2023	AI disclosure: ROA r =.527, ROE r =.498; third ratio r =.207, p =.113	Disclosure, not use; ratio definition differs (TD/TL vs TD/TA)
[52]	Iraqi Insurance Co., 2014–2022 annual	Displayed metrics of 100%	Six-case matrix labelled as training results
[70]	ARDL illustration	Long-run coefficient.62	Tables labelled hypothetical by the author
[69]	278 distributed, 242 evaluated	AI supports IFRS 7 via governance mechanisms	Table totals 205 and 260 vs n = 242
[50]	37 KRI companies, purposive	r =.67, R^2 =.45, F = 27.96	Cross-sectional association, not a 45% improvement
[11]	30 respondents, one SME	AI R^2 =.428; cloud R^2 =.621 (separate models)	Systems still under consideration: expectations rated
[36]	150 distributed, 137 returned, 109 usable	AI practices reduce information asymmetry	Stated 91.33% rate refers to returned, not usable, forms
[15]	Samawah Cement Factory, 2024–2025	Fuzzy CVP forecast accuracy above 95%	Tested on a single month (January 2025)

Table 4 collects the principal quantitative results from studies examined in full text, next to the caution each requires. Read together, they show that the numbers most often quoted from this literature are correlations, variance-explained statistics or response rates obtained from respondents' ratings, and that several of the few financial-record results are either non-significant or concern disclosure rather than use.

5.3 Non-Significant and Conflicting Results

An honest review should not drop results that run against the general direction. At least three non-significant results appear: the machine-learning interaction with auditor independence [5], the effect of AI techniques on abnormal returns [20], and the relation between AI disclosure and the third financial indicator [46]. The correlation in the survey of accounting academics is significant but very weak [8]. None of these shows that AI has no effect. Together, they rule out a general claim that its effect is positive for every outcome and in every setting.

5.4 Model-Validation Problems

Prediction and classification studies need special care, because errors there can generate impressive numbers that do not generalize outside the sample. We identified four problems: model accuracy based on agreement with another model instead of an independent truth [41]; training results instead of test results [52]; unclear respect for time order when splitting financial data [29]; and hypothetical tables presented in a context suggesting empirical estimation [70]. Another concern about the stability is the use of short series to fit complex models [4] and single-month tests [15].

5.5 Internal Consistency of Published Data

The documentary audit of the full texts identified cases in which the sample size in the text does not match table totals [53, 69], in which the same statistics are presented under different hypotheses [2], in which a response rate is calculated on returned rather than usable questionnaires [36], and in which the definition of a financial ratio differs between abstract and tables [46]. The authors could clarify these points, which are reported as limits to inference, not as accusations. They also have a message for editorial boards: a simple step that would raise the reliability of what is published is to check that tables agree with the text.

6. Research Gap and Agenda

6.1. A Defensible Gap

The gap is not for a lack of Iraqi research – applied or archival. The review reveals studies employing neural networks since 2015 [32], using electronic audit systems [57], analyzing published financial data [20, 41, 46] and using business-intelligence tools [83]. Thus the claim appearing in some papers that "no Iraqi study has examined…" needs revision. The defensible gap is less: there is little evidence linking documented, specific AI use to audit outcomes measured from independent sources, within designs respecting time order and controlling for confounding factors. This review does not claim priority in identifying that gap, which would require a search beyond the scope of the review.

6.2. A Staged Design for Is Research

Table 5: A staged design for future research on ISX-listed firms

Stage	Content	Safeguards
1. Feasibility and measurement audit	Assemble annual reports and auditor reports for a provisional 2016–2025 window; record missing reports and reasons, and listing changes	Analyse banks and non-financial firms separately where measures differ
2. Define the exposure	An AI-disclosure index with a published dictionary, contextual coding rules and two independent coders; separate evidence of actual use; a separate source for auditor-side use	Generic digitalisation statements score zero; disclosure is not treated as use
3. Pre-specify outcomes	Audit-report lag, opinion type, subsequent restatements; discretionary accruals for non-financial firms	Bank-appropriate earnings-management measures; no single proxy called "audit quality"
4. Estimate	Firm-year panel with firm and year fixed effects, lagged exposure, pre-specified controls (size, leverage, profitability, complexity, auditor characteristics)	Firm-clustered standard errors; caution with few clusters
5. Strengthen inference	Quasi-experimental design where a dated, documented adoption exists, with a comparison group and pre-trend tests	Results remain associational when these conditions are not met

Prediction studies are best run separately from effect studies, with chronological splits, a test period the model has never seen, explicit timing of when each variable becomes available, and comparison with realistic baseline models. Generative-AI experiments need reproducible tasks and outputs scored by independent experts. When international standards are cited, ISA 260 concerns communication with those charged with governance [33], while ISA 570 (Revised 2024) concerns going concern [34] and applies to periods beginning on or after 15 December 2026; it should not be applied retrospectively to earlier samples without qualification.

6.3 Suggested Research Topics

- The impact of automated analytical tools on audit-report lag and opinion type in Iraqi audit firms: Evidence from engagement level data.
- Comparison of machine-learning models and the Beneish model to predict restatements or sanctions issued by the Iraq Securities Commission as an independent ground truth.
- An AI-disclosure index documented for ISX firms differentiating general statements and specific use. Inter-coder reliability was reported.
- An experimental study on the effect of generative AI on the accuracy and time to prepare audit working papers for graduate students or trainee auditors.
- An established framework to evaluate internal control over AI risk in several Iraqi banks, building on the single-case evidence of [27].
- A case study at the FBSA on oversight output pre- and post-implementation of a specific digital tool.

7. Conclusions and Recommendations

7.1 Conclusions

- Iraqi research on AI in accounting and auditing has developed rapidly: more than two-thirds of the studies reviewed (67.9%) appeared in 2025–2026, in eighteen journals led by the journals of the University of Baghdad and Mustansiriyah University.
- Questionnaires are prevalent (59.3%), and mostly capture perceptions rather than use, with only three studies using published financial data.
- Studies concur that professionals have a positive attitude toward AI, but have not yet produced independent proof of measured improvement in audit quality.
- Non-significant results, problems of validation and inconsistencies between text and tables rule out a claim of a uniform positive effect.
- A promising stream views AI as a source of risk that requires governance and internal control, rather than merely an audit tool.
- The gap is not a lack of applied studies, but rather the paucity of evidence that connects documented technology use to independently measured audit outcomes.

7.2 Recommendations

- For researchers: specify the technology studied rather than “AI” in general; specify whether the exposure is perception, disclosure or documented use; and report non-significant results in full.
- For researchers working with predictive models: use separate training and test data in time, do not validate against the labels of another model, and share code and data where possible.
- For editorial boards: Require a check that sample sizes agree with table totals, encourage archival studies, in-depth case studies.
- For FBSA and the Iraqi Union of Accountants and Auditors: provide anonymized oversight data for research and issue guidance on the use of AI tools in auditing.
- For banks and listed companies: specify which intelligent tools are used, for what purpose and since when, so that their effect can be assessed.
- For accounting departments: offer applied courses on data analytics and AI governance at undergraduate and graduate level.

7.3 Limitations

The review relies on a working set and a targeted search rather than an exhaustive search of all Iraqi journals, so relevant studies may have been missed, particularly in journals whose websites could not be searched. Forty-two studies were appraised at journal-page and abstract level only, and no study's analysis was reproduced from raw data. Where metadata conflict – for example, a year printed on the journal page that differs from the year in the DOI – the conflict is noted rather than resolved. English titles of Arabic

papers in the reference list are editorial translations or the English titles printed by the journals, and may differ slightly from other renderings.

Appendix A. Register of included studies

Studies are listed in the order of the reference list. "Full" means the study was examined in full text; "Page" means appraisal was limited to the journal page and abstract.

Ref.	Study	Journal	Design	Domain	Technology	Setting	Text
1	Abbas *et al.* (2022)	J. Kut Univ.	Conceptual	Control & tech-risk governance	Blockchain	n/a	Page
2	Abbas (2026)	Al-Qadisiyah J.	Questionnaire	External audit	AI (general)	Iraq	Full
3	Abd al-Ridha *et al.* (2025)	J. Iraqia Univ.	Conceptual	External audit	AI (general)	n/a	Full
4	Abd (2026)	Al-Kut J.	Applied model	Financial prediction	ML / neural nets	Iraq	Page
5	Abdul Amir & Talab (2026)	Al-Ghary J.	Questionnaire	Fraud & earnings mgmt	ML / neural nets	Iraq	Full
6	Abdulrida (2026)	Al-Kut J.	Questionnaire	Internal audit	ML / neural nets	Iraq	Page
7	Abed *et al.* (2026)	JAFS	Questionnaire	Profession & education	AI (general)	Iraq	Full
8	Abed (2023)	Tikrit J.	Questionnaire	Profession & education	AI (general)	Iraq	Page
9	Abuyabes *et al.* (2025)	Tanmiyat Al-Rafidain	Questionnaire	Reporting & info. quality	AI (general)	Outside Iraq	Page
11	Alhchaimi (2026)	Al-Anbar Univ. J.	Questionnaire	Reporting & info. quality	Cloud	Iraq	Full
12	Allayla & Al-Ibrahimi (2025)	J. Econ. Admin. Sci.	Case study	Reporting & info. quality	ML / neural nets	Iraq	Page
13	Alwan (2025)	Iraqi J. Econ. Sci.	Questionnaire	External audit	Big data / BI	Outside Iraq	Page
14	Aoun *et al.* (2024)	Al-Ghary J.	Questionnaire	Internal audit	AI (general)	Iraq	Full
15	Al-Atabe & Al-Shammari (2025)	Muthanna J.	Applied model	Financial prediction	Fuzzy logic	Iraq	Full
16	Awad & Flayyih (2025)	JAFS	Review/bibliometric	Control & tech-risk governance	AI (general)	n/a	Page
17	Baqir (2026)	Iraqi J. Econ. Sci.	Conceptual	Internal audit	AI (general)	Iraq	Page
18	Al-Dhalimi *et al.* (2026)	Al-Kut J.	Questionnaire	Fraud & earnings mgmt	AI (general)	Iraq	Page
19	Dhnoon *et al.* (2023)	Al-Anbar Univ. J.	Questionnaire	Public-sector oversight	Big data / BI	Iraq	Page
20	Faris & Madhlom (2025)	J. Bus. Econ. Appl. Res.	Financial records	Financial prediction	AI (general)	Iraq	Full
21	Al-Fartoosi & Mohsen (2025)	Al-Ghary J.	Questionnaire	Reporting & info. quality	AI (general)	Iraq	Full
22	Al-Ghani & Al-Jubouri (2026)	Iraqi J. Econ. Sci.	Case study	Control & tech-risk governance	Automation / RPA	Iraq	Page
23	Hadi & Nagem (2025)	J. Bus. Econ. Appl. Res.	Review/bibliometric	External audit	AI (general)	n/a	Full
24	Hadi (2023)	Muthanna J.	Questionnaire	Profession & education	Generative AI	Iraq	Full
25	Al-Hakim *et al.* (2024)	Al-Ghary J.	Questionnaire	E-services	AI (general)	Iraq	Full
26	Hama Saeed & Hama Hussain (2022)	Sci. J. Cihan Univ.	Questionnaire	External audit	AI (general)	Kurdistan Region	Page
27	Hamdan (2026)	JAFS	Case study	Control & tech-risk governance	AI (general)	Iraq	Page
28	Hasaballah *et al.* (2026)	JAFS	Questionnaire	Reporting & info. quality	Expert systems	Iraq	Page
29	Hassan (2026)	Iraqi J. Econ. Sci.	Applied model	Financial prediction	ML / neural nets	Outside Iraq	Full
30	Hindi *et al.* (2025)	JAFS	Questionnaire	Reporting & info. quality	Blockchain	Iraq	Page
31	Hindi *et al.* (2026)	JAFS	Questionnaire	External audit	Big data / BI	Iraq	Page
32	Al-Husseini & Al-Mamouri (2015)	JAFS	Applied model	External audit	ML / neural nets	Iraq	Full
35	Jaber (2024)	Al-Ghary J.	Questionnaire	Reporting & info. quality	AI (general)	Iraq	Full
36	Jaber & Al-Dulaimi (2026)	JAFS	Questionnaire	Reporting & info. quality	AI (general)	Iraq	Full
37	Jappar (2025)	J. Kut Univ.	Conceptual	External audit	ML / neural nets	n/a	Page
38	Al-Jiboury (2026)	J. Port Sci. Res.	Conceptual	Public-sector oversight	AI (general)	Iraq	Page
39	Kadawi & Al-Khamoussi (2023)	Tanmiyat Al-Rafidain	Questionnaire	Public-sector oversight	Automation / RPA	Iraq	Page
40	Kadhim & Ismail (2025)	Iraqi J. Admin. Sci.	Questionnaire	Profession & education	AI (general)	Iraq	Page
41	Kadhim & Al Ani (2024)	JAFS	Financial records	Fraud & earnings mgmt	ML / neural nets	Iraq	Full
42	Kahit *et al.* (2024)	Iraqi J. Econ. Sci.	Questionnaire	Internal audit	AI (general)	Iraq	Full
43	Kareem (2025)	Muthanna J.	Conceptual	External audit	AI (general)	Iraq	Full
44	Kareem & Al-Baaj (2025)	Al-Qadisiyah J.	Questionnaire	Public-sector oversight	Big data / BI	Iraq	Page
45	Kazim & Kareem (2026)	J. Kut Univ.	Questionnaire	External audit	AI (general)	Iraq	Page
46	Khalaf *et al.* (2025)	JAFS	Financial records	Reporting & info. quality	AI (general)	Iraq	Full
47	Khalaf (2026)	JAFS	Questionnaire	External audit	AI (general)	Iraq	Full
48	Khalaf (2025)	Al-Ghary J.	Applied model	Profession & education	Generative AI	Iraq	Full
49	Khalil & Chiad (2024)	Al-Kut J.	Questionnaire	External audit	Automation /	Iraq	Page

					RPA		
50	Khalil & Hama Saeed (2026)	Tikrit J.	Questionnaire	Internal audit	AI (general)	Kurdistan Region	Full
51	Al-Khaqani & Al-Rawazqee (2024)	J. Admin. & Econ.	Conceptual	Public-sector oversight	AI (general)	Iraq	Full
52	Al-Khazraji & Attia (2025)	Iraqi J. Econ. Sci.	Applied model	Financial prediction	ML / neural nets	Iraq	Full
53	Khdeer (2024)	Al-Ghary J.	Questionnaire	Reporting & info. quality	AI (general)	Kurdistan Region	Full
54	Al-Magsoosi (2025)	Al-Kut J.	Case study	Reporting & info. quality	AI (general)	Iraq	Page
55	Al-Mansoori *et al*. (2026)	Al-Qadisiyah J.	Questionnaire	Reporting & info. quality	AI (general)	Iraq	Full
56	Al-Mazouri & Al-Saqa (2024)	Tanmiyat Al-Rafidain	Questionnaire	Control & tech-risk governance	Blockchain	Iraq	Page
57	Mohammed & Anbar (2016)	JAFS	Applied model	Public-sector oversight	Expert systems	Iraq	Full
58	Mohammed (2024)	J. Admin. & Econ.	Questionnaire	External audit	AI (general)	Iraq	Full
59	Muhammad *et al*. (2024)	Iraqi J. Econ. Sci.	Questionnaire	External audit	Cloud	Iraq	Page
60	Al-Musawi (2026)	JAFS	Questionnaire	Control & tech-risk governance	AI (general)	Iraq	Page
61	Mustafa *et al*. (2025)	Tanmiyat Al-Rafidain	Questionnaire	Reporting & info. quality	ML / neural nets	Kurdistan Region	Page
62	Muzzaffar & Al-Saqqa (2026)	Al-Kut J.	Conceptual	Control & tech-risk governance	Cloud	n/a	Page
63	Al-Nakib & Zghair (2025)	J. Bus. Econ. Appl. Res.	Conceptual	Profession & education	Automation / RPA	n/a	Full
64	Noomi & Al Dabbagh (2025)	Al-Anbar Univ. J.	Conceptual	Reporting & info. quality	XBRL	n/a	Full
66	Odeh & Hamdan (2024)	JAFS	Conceptual	Control & tech-risk governance	Cloud	Iraq	Page
67	Odeh & Hamdan (2024)	JAFS	Case study	Control & tech-risk governance	Cloud	Iraq	Page
69	Qader & Abdullah (2025)	Tikrit J.	Questionnaire	Reporting & info. quality	AI (general)	Kurdistan Region	Full
70	Qassim (2026)	Al-Qadisiyah J.	Conceptual	Reporting & info. quality	AI (general)	n/a	Full
71	Rashwan & Abu Arab (2022)	JAFS	Questionnaire	Internal audit	Big data / BI	Outside Iraq	Page
72	Rashwan & Qowaider (2021)	JAFS	Questionnaire	Reporting & info. quality	Blockchain	Outside Iraq	Page
73	Al-Rubaie (2026)	Al-Anbar Univ. J.	Case study	Financial prediction	AI (general)	Outside Iraq	Full
74	Sabih (2025)	Al-Kut J.	Questionnaire	Control & tech-risk governance	AI (general)	Iraq	Page
75	Salahsahib & Ibrahim (2025)	J. Econ. Admin. Sci.	Questionnaire	External audit	Big data / BI	Iraq	Page
76	Saleh & Jawad (2025)	Iraqi J. Econ. Sci.	Questionnaire	E-services	Expert systems	Iraq	Full
77	Shakir & Shubbar (2026)	Al-Qadisiyah J.	Conceptual	Control & tech-risk governance	AI (general)	n/a	Full
78	Shanta (2025)	Tanmiyat Al-Rafidain	Questionnaire	Reporting & info. quality	AI (general)	Iraq	Page
79	Sharaf (2023)	JAFS	Questionnaire	External audit	Big data / BI	Outside Iraq	Page
80	Al-Sharida & Al-Samarrai (2021)	JAFS	Case study	Profession & education	AI (general)	Outside Iraq	Full
81	Shukur (2026)	J. Admin. & Econ.	Questionnaire	Fraud & earnings mgmt	AI (general)	Iraq	Full
82	Al-Ukaydi & Al-Saqqa (2026)	Khazayin J.	Questionnaire	Internal audit	ML / neural nets	Iraq	Page
83	Yaqoub & Salam (2026)	Iraqi J. Econ. Sci.	Applied model	Internal audit	Big data / BI	Iraq	Page
84	Yousif (2026)	JAFS	Questionnaire	Internal audit	AI (general)	Iraq	Page
85	Zaboon & Al-Gharban (2024)	Iraqi J. Econ. Sci.	Questionnaire	External audit	Blockchain	Iraq	Page
86	Al-Zamili (2025)	Al-Ghary J.	Questionnaire	Public-sector oversight	AI (general)	Iraq	Full

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