

Stakeholder Perceptions of ICT-Enabled Tax Administration and Corporate Income Tax Collection in Iraq

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ABSTRACT

Submitted:
20- 02 - 2026
Accepted:
14- 07 - 2026
Published:
15- 07 - 2026

Purpose of the study — This study assesses stakeholders' evaluations of ICT-enabled corporate income tax administration in Iraq across five dimensions: tax collection capability, compliance facilitation and cost reduction, tax information accessibility, administrative transparency, and administrative efficiency and effectiveness.

Research Method: A quantitative cross-sectional survey used a structured 52-item questionnaire administered to 384 tax officers, corporate managers, and accountants through paper-based and online modes. Respondents were selected purposively. Data were analyzed using IBM SPSS Statistics, descriptive statistics, Cronbach's alpha, one-sample t-tests, effect sizes, and Holm-adjusted stakeholder-group comparisons.

Result— The results show that digital transformation boosts the tax authority's access to precise and up-to-date financial information, increases corporate tax compliance, reduces compliance costs, improves the quality of government financial reports, increases the amount of corporate income tax collected, boosts transparency, and enhances the efficiency and effectiveness of the tax collection progression.

Conclusion— The implementation of digital transformation has a key role in improving the quality of government financial reports and corporate income tax collection in Iraq. Increased investment in this area has direct impacts on higher tax revenues and a better financial transparency.

Limitations— The study used cross-sectional, self-reported, purposively sampled data and did not measure objective changes in revenue, compliance costs, or administrative performance.

Contribution— The study contributes to public administration, taxation, information systems, digital government, and management by providing a multidimensional stakeholder-based framework for evaluating ICT-enabled tax administration in an emerging-economy context.

Keywords

: *Digital transformation, government financial reports, tax collection, tax compliance, General Tax Authority of Iraq.*

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INTRODUCTION

Tax administrations worldwide are moving beyond the simple conversion of paper-based procedures into electronic formats. Contemporary digital tax administration involves the integration of taxpayer registration, electronic filing and payment, third-party information, automated data processing, risk assessment, taxpayer communication, and compliance management within interconnected administrative systems. The Organisation for Economic Co-operation and Development distinguishes this broader transformation from the mere adoption of isolated information technologies. Digital transformation requires tax processes to be redesigned so that interactions between taxpayers, businesses, intermediaries, and revenue authorities become more integrated, data-driven, and less burdensome. Recent international evidence indicates that tax administrations increasingly use digital identities, electronic invoicing, application programming interfaces, automated data exchange, advanced analytics, and artificial intelligence to support compliance and improve administrative effectiveness (OECD, 2020, 2025).

The modernization of tax administration has substantial practical importance, particularly in countries seeking to strengthen domestic revenue mobilization. Effective taxation provides governments with resources for public services, infrastructure, social protection, and economic development. However, collecting taxes efficiently remains difficult when revenue authorities operate with fragmented information systems, incomplete taxpayer databases, manual procedures, limited administrative capacity, and weak coordination with third-party institutions. Information and communication technology can help address these constraints by improving the identification of taxable entities, verifying reported liabilities, facilitating filing and payment, supporting risk-based audits, and enabling information to be exchanged across administrative agencies. These functions can potentially increase the accuracy and timeliness of tax administration while reducing unnecessary interactions and procedural burdens for taxpayers (Okunogbe & Santoro, 2023; Okunogbe & Tourek, 2024).

Nevertheless, technology should not automatically be equated with successful administrative transformation. Digital systems may fail to produce the expected outcomes when they are introduced without adequate infrastructure, organizational integration, legal support, staff capabilities, taxpayer readiness, data governance, or change-management arrangements. Resistance among employees and taxpayers, limited internet connectivity, poor interoperability, data-security concerns, and the continued parallel use of manual procedures may also weaken the effectiveness of digital reforms. Therefore, the value of technology in tax administration depends not only on the availability of electronic tools but also on how effectively those tools are embedded in administrative processes and used by the stakeholders

responsible for tax reporting, assessment, collection, and payment (Okunogbe & Santoro, 2023; OECD, 2025).

These issues are particularly relevant to Iraq. The country faces continuing pressure to strengthen non-oil revenue mobilization and reduce the vulnerability created by its dependence on oil-related government income. The International Monetary Fund has emphasized that improving Iraq's tax administration through digitalization, stronger enforcement, and more effective collection is essential to strengthening the country's fiscal position. At the operational level, recent tax-reform discussions supported by the World Bank identified several challenges within the Iraqi tax administration, including outdated systems, inadequate technological infrastructure, and organizational, legal, financial, and technological constraints. The proposed reform direction includes integrated tax-administration systems, improved taxpayer services, stronger information sharing, self-assessment mechanisms, and more transparent administrative procedures (International Monetary Fund [IMF], 2025; World Bank, 2024).

In this study, ICT-enabled tax administration refers to the use of interconnected information and communication technologies to support taxpayer registration, electronic filing and payment, transaction recording, information sharing, tax assessment, audit support, compliance monitoring, and communication between the tax authority and taxpayers. This operational definition is narrower than the broader concept of organizational digital transformation. The distinction is necessary because the present study evaluates specific technology-supported administrative functions rather than the complete strategic transformation of the General Commission for Taxes. ICT-enabled administration can be understood as an essential operational foundation upon which a more comprehensive digital transformation may subsequently be developed.

From an information-processing perspective, tax administration is highly dependent on the government's ability to collect, integrate, verify, analyze, and use information concerning taxpayers and taxable transactions. Technology may improve this capacity through three related mechanisms. First, it can help the tax authority identify the tax base by integrating registration records and information from companies, financial institutions, customs authorities, property registries, and other public agencies. Second, it can help the authority monitor compliance by comparing taxpayer declarations with third-party and transaction-level data. Third, it can facilitate compliance by simplifying registration, filing, payment, communication, and access to tax information. These mechanisms suggest that ICT-enabled administration may be associated with several administrative outcomes, including revenue-collection capacity, corporate tax compliance, compliance costs, access to information, transparency, and operational efficiency (Okunogbe & Santoro, 2023).

Although previous research generally acknowledges the potential contribution of digital technologies to tax administration, several gaps remain. First, much of the literature has concentrated on technologically advanced tax administrations or on lower-income countries outside the Middle Eastern context. Evidence from Iraq remains limited, even though its institutional environment, infrastructure constraints, reliance on natural-resource revenues, and ongoing public-sector reforms may shape the implementation and perceived effectiveness of digital tax systems. This constitutes a significant contextual gap.

Second, existing studies frequently examine one administrative outcome in isolation, such as electronic filing, taxpayer compliance, revenue collection, or compliance costs. Such an approach does not fully capture the multidimensional nature of tax-administration performance. Digital systems may simultaneously influence the amount and speed of revenue collection, the ability of businesses to meet their obligations, the costs of compliance, access to accurate information, administrative transparency, and the efficiency of tax services. Examining these outcomes together provides a more comprehensive assessment of how stakeholders understand the role of technology in tax administration. This represents an empirical gap.

Third, prior studies have often relied on a single category of respondents, particularly taxpayers or tax officials. However, digital tax administration involves stakeholders who occupy different positions within the tax process. Tax officers directly use systems for registration, assessment, monitoring, and collection, whereas corporate managers and accountants experience the same systems when preparing returns, supplying information, communicating with tax authorities, and making tax payments. These stakeholder groups may therefore evaluate the benefits and limitations of ICT-enabled administration differently. Limited attention to these potentially divergent perspectives constitutes a stakeholder and methodological gap.

The present study addresses these gaps by examining the perceptions of tax officers, corporate managers, and accountants regarding ICT-enabled corporate income tax administration in Iraq. Rather than claiming to establish the causal effect of technology on actual tax revenues, the study evaluates stakeholders' assessments of technology-supported tax-administration practices. Five interrelated dimensions are investigated: (1) perceived improvement in corporate income tax collection; (2) support for corporate tax compliance and the reduction of compliance costs; (3) access to tax-related information; (4) transparency in tax administration; and (5) the efficiency and effectiveness of tax collection. This perception-based positioning is consistent with the cross-sectional questionnaire design and prevents subjective evaluations from being interpreted as objective evidence of changes in tax revenue.

The novelty of this study lies in its multidimensional and multi-stakeholder examination of ICT-enabled tax administration within the Iraqi institutional context. The study contributes empirically by providing evidence from a tax system undergoing administrative and technological reform. It contributes conceptually by organizing the perceived benefits of ICT-enabled tax administration into five related but distinguishable administrative dimensions. It also contributes practically by identifying the areas in which stakeholders perceive the strongest benefits and the areas that may still require institutional, technological, or managerial attention. The comparison among tax officers, corporate managers, and accountants further provides an opportunity to determine whether internal system users and external business stakeholders hold similar or contrasting assessments of ongoing digitalization.

Accordingly, the study aims to assess stakeholders' perceptions of the contribution of ICT-enabled tax administration to corporate income tax administration in Iraq and to determine whether these perceptions differ across respondent groups. The study addresses the following research questions:

RQ1: How do tax officers, corporate managers, and accountants evaluate the contribution of ICT-enabled tax administration to corporate income tax collection, corporate tax compliance and compliance costs, access to tax information, transparency, and administrative efficiency and effectiveness?

RQ2: Which dimensions of ICT-enabled corporate income tax administration receive the highest and lowest evaluations from the respondents?

RQ3: Do perceptions of ICT-enabled corporate income tax administration differ significantly among tax officers, corporate managers, and accountants?

The remainder of the article is organized as follows. The next section reviews the relevant literature and develops the theoretical arguments and research hypotheses. The subsequent section describes the research design, respondents, measurement instrument, data-collection procedures, and analytical techniques. The results section presents the measurement assessment, descriptive findings, and comparisons across stakeholder groups. The discussion interprets the findings in relation to the literature and the Iraqi tax-administration context. The final section presents the conclusions, theoretical and practical implications, limitations, and recommendations for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A. LITERATURE REVIEW

2.1 ICT-Enabled Tax Administration

The growing use of digital technologies has changed how public organizations collect information, deliver services, communicate with stakeholders, and monitor regulatory compliance. Nevertheless, the concepts of digitization, digitalization, and digital transformation should not be used interchangeably. Digitization refers primarily to converting analogue information into digital formats, whereas digitalization concerns the use of digital technologies to improve existing activities and processes. Digital transformation is broader because it entails substantial changes in organizational processes, structures, capabilities, stakeholder relationships, and value-creation mechanisms (Mergel et al., 2019; Vial, 2019). Public-sector digital transformation therefore extends beyond the acquisition of computers, software, or communication equipment; it requires technology to be embedded in the way public organizations operate and deliver value.

Given the scope of the present study and the content of its measurement instrument, the term ICT-enabled tax administration is more accurate than the broader term digital transformation. ICT-enabled tax administration refers to the coordinated use of information and communication technologies to support taxpayer identification and registration, electronic filing and payment, information exchange, transaction recording, tax assessment, audit support, compliance monitoring, taxpayer communication, and revenue collection. It represents an operational component of digital transformation but does not necessarily indicate that the entire tax authority has undergone comprehensive organizational transformation.

Contemporary tax administration increasingly relies on integrated databases, taxpayer portals, electronic invoicing, digital payment systems, third-party data, automated risk assessment, and analytical tools. These technologies are intended to make taxation more closely connected to taxpayers' natural business systems and to reduce unnecessary manual intervention. The OECD's Tax Administration 3.0 framework emphasizes that technology-supported administration should facilitate compliance, reduce administrative burdens, improve data availability, and enable revenue authorities to intervene more accurately when compliance risks emerge (OECD, 2020, 2025).

However, ICT adoption does not automatically improve tax-administration performance. Technology may fail to produce meaningful administrative benefits when taxpayer databases are incomplete, organizational units remain disconnected, employees are insufficiently trained, digital and manual processes operate simultaneously, or information cannot be exchanged across government agencies. Weak internet access, system instability, low user trust, cybersecurity concerns, and limited taxpayer digital capability may also reduce the practical value of electronic systems. Technology should therefore be treated as an administrative capability whose value depends on organizational, institutional, and human conditions rather

than as an independent guarantee of better taxation outcomes (Okunogbe & Santoro, 2023; Okunogbe & Tourek, 2024).

This distinction is important for the present study. The study does not measure the objective amount of additional revenue generated by a specific technological intervention, nor does it compare tax-administration performance before and after implementation. Instead, it assesses how stakeholders evaluate the contribution of ICT-enabled practices to corporate income tax administration. The focal construct is therefore the perceived administrative contribution of ICT, reflected in five related dimensions: tax collection capability, corporate tax compliance facilitation and compliance-cost reduction, tax information accessibility, administrative transparency, and administrative efficiency and effectiveness.

2.2 Theoretical Foundations

The present study integrates three complementary theoretical perspectives: organizational information processing theory, the information systems success perspective, and public value theory. These perspectives explain why ICT-enabled tax administration may generate administrative benefits and why those benefits should be evaluated across several dimensions rather than through revenue collection alone.

2.2.1 Organizational Information Processing Theory

Organizational information processing theory views organizations as systems that must acquire, interpret, distribute, and use information to manage uncertainty and accomplish their objectives. When organizational tasks become more complex and interdependent, information-processing requirements increase. Organizations must consequently develop greater information-processing capacity through vertical information systems, integrated databases, standardized procedures, coordination mechanisms, or lateral communication structures (Galbraith, 1974; Tushman & Nadler, 1978).

Tax administration is an information-intensive governmental activity. Tax authorities must identify taxable persons and entities, determine taxable income, verify taxpayer declarations, compare information across sources, assess compliance risks, collect payments, manage disputes, and monitor outstanding liabilities. These tasks require timely, accurate, complete, and interoperable information. The number of taxpayers, complexity of corporate transactions, and involvement of banks, customs agencies, business registries, and other government institutions further increase the authority's information-processing requirements.

ICT-enabled tax administration can increase information-processing capacity by connecting databases, automating routine calculations, recording transactions, allowing rapid information retrieval, and facilitating exchanges among organizational units and external institutions. These capabilities may reduce information asymmetry between corporations and tax authorities and enable tax officers to assess liabilities using more complete evidence. Studies of tax enforcement consistently demonstrate the importance of verifiable information and third-party reporting in strengthening the authority's capacity to detect underreporting and enforce compliance (Pomeranz, 2015; Slemrod, 2019).

From this perspective, tax information accessibility is not merely one technological benefit among many. It is a central mechanism through which ICT may support tax collection, compliance monitoring, transparency, and administrative efficiency. A system that processes information quickly but uses incomplete or inaccurate data may produce limited administrative value. Conversely, integrated and verifiable information can improve the authority's ability to identify the tax base, assess tax liabilities, target audits, and respond to taxpayers.

2.2.2 Information Systems Success Perspective

The DeLone and McLean Information Systems Success Model explains information-system performance through interrelated dimensions such as system quality, information quality, service quality, use, user satisfaction, and net benefits. The model emphasizes that the existence of a system does not by itself demonstrate success. A system becomes valuable when its technical and informational qualities enable users to complete tasks and produce beneficial outcomes for individuals and organizations (DeLone & McLean, 2003).

Applied to tax administration, system quality concerns the reliability, usability, security, integration, and responsiveness of electronic tax systems. Information quality concerns the accuracy, completeness, relevance, consistency, and timeliness of the data generated or accessed through those systems. Service quality concerns the support provided to taxpayers and tax officers when interacting with digital services. These qualities influence whether users rely on electronic systems and whether their use produces administrative benefits.

The present study does not test the complete DeLone and McLean model because system quality, service quality, user satisfaction, and actual system use are not measured as separate antecedent variables. Nevertheless, the model provides an important theoretical basis for understanding the five perceived outcome dimensions. Improved collection capability, compliance facilitation, information access, transparency, and operational efficiency can be interpreted as forms of perceived net benefit arising from ICT-enabled tax administration. This perspective also supports the use of different stakeholder groups because the perceived value of an information system may depend on the tasks, expectations, and experiences of its users.

2.2.3 Public Value Theory

Private-sector information systems are frequently assessed in terms of profitability, productivity, or competitive advantage. Public-sector information systems require a broader evaluative perspective because government organizations are expected to create value not only for internal users but also for citizens, businesses, and society. Public value theory shifts attention from internal efficiency alone toward the capacity of public organizations to deliver effective services, maintain legitimacy, strengthen accountability, and satisfy collective expectations.

Research on digital government identifies improved public services, improved administration, openness, ethical conduct, public trust, and social well-being as important forms of public value. Administrative efficiency and transparency are therefore not competing outcomes but interrelated dimensions of the value expected from digital government initiatives (Twizeyimana & Andersson, 2019). Public value creation also depends on organizational capabilities and on the way technologies are integrated into public-service processes rather than on the isolated adoption of individual technological tools (Panagiotopoulos et al., 2019).

In tax administration, public value may arise when ICT enables the authority to provide accessible and predictable services, process taxpayer information consistently, reduce unnecessary compliance burdens, limit discretionary practices, and strengthen the traceability of administrative decisions. These outcomes benefit the government through improved administrative capacity and benefit taxpayers through more convenient, transparent, and responsive procedures. Accordingly, evaluating ICT-enabled tax administration requires attention to both internal administrative benefits and external stakeholder experiences.

The three theoretical perspectives are complementary. Organizational information processing theory explains how ICT expands the authority's capacity to collect and use information. The information systems success perspective explains how system and information capabilities may generate user and organizational benefits. Public value theory extends the assessment beyond internal performance to include transparency, service accessibility, and reduced burdens for business stakeholders. Together, these perspectives support a multidimensional assessment of ICT-enabled tax administration.

2.3 Perceived Tax Collection Capability

Perceived tax collection capability refers to stakeholders' assessment of the extent to which ICT-enabled administration strengthens the authority's capacity to identify taxable corporate income, calculate liabilities, record transactions, process payments, prevent

collection errors, and collect taxes in a timely manner. It represents an assessment of administrative capacity rather than an objective measure of additional revenue.

Technology may support tax collection through three main functions: identifying taxable entities, verifying reported liabilities, and ensuring that assessed taxes are paid. Digital registration systems can improve the identification of corporations and business activities. Electronic filing and payment can standardize the submission and processing of tax information. Integrated transaction records can assist officers in comparing taxpayer declarations with information held by banks, customs agencies, business registries, and other institutions. Automated systems may also reduce data-entry errors, accelerate assessments, and support the prioritization of high-risk cases (Okunogbe & Santoro, 2023; Okunogbe & Tourek, 2024).

The relationship between information availability and tax collection is supported by empirical tax-enforcement research. Pomeranz (2015) demonstrated that transaction information trails can create deterrence and self-enforcement effects because declarations become more verifiable. Naritomi (2019) similarly showed that systems that generate and verify transaction information can strengthen the reporting of taxable sales. These studies do not imply that all digital tax systems will automatically increase revenue, but they demonstrate that improved information and verification capabilities are essential mechanisms of effective collection.

ICT may also facilitate payment by allowing corporations to submit returns and settle liabilities without repeated visits to tax offices. Faster processing, standardized procedures, and clearer payment records may reduce delays between assessment and collection. Nevertheless, the perceived benefits of ICT may depend on system reliability, data coverage, employee capability, enforcement authority, and the extent to which electronic processes replace rather than merely duplicate manual procedures. Thus, the construct captures whether stakeholders perceive that ICT strengthens collection capability within the Iraqi administrative context, not whether a causal revenue increase has been objectively established.

2.4 Perceived Corporate Tax Compliance Facilitation and Compliance-Cost Reduction

Corporate tax compliance comprises several related obligations, including registration, accurate reporting, timely filing, payment of assessed liabilities, record keeping, and responses to requests from the tax authority. Compliance is influenced not only by deterrence and the probability of detection but also by the complexity, cost, and accessibility of administrative procedures. A corporation may face financial costs, employee time costs, professional-service

expenses, information-search costs, and uncertainty when attempting to comply with tax regulations.

ICT can facilitate compliance by making registration, filing, payment, and access to taxpayer accounts available electronically. Automated calculations and pre-populated information may reduce errors, while electronic reminders and real-time confirmation can support timely submission and payment. Technology can also reduce the need for repeated physical interactions with tax officers and shorten the time required to retrieve records or respond to administrative requests. These changes may lower compliance costs while increasing the convenience of fulfilling tax obligations.

Technology may also strengthen enforcement. Digital information can improve the authority's ability to compare corporate declarations with third-party data, identify inconsistencies, and focus audits on higher-risk cases. The combination of easier compliance and stronger verification is theoretically important. Systems that only increase monitoring may raise administrative burdens or resistance, whereas systems that only simplify filing without improving verification may have limited effects on underreporting. Effective tax digitalization should therefore combine taxpayer facilitation with enhanced administrative capacity (Okunogbe & Santoro, 2023; Okunogbe & Tourek, 2024).

The perceived compliance dimension in this study consequently includes two closely related benefits: support for corporations in completing their obligations and the reduction of costs associated with those obligations. The construct does not represent objectively verified corporate compliance behaviour. It reflects whether tax officers, managers, and accountants believe that ICT-enabled procedures make compliance more timely, accurate, accessible, and less burdensome.

2.5 Perceived Tax Information Accessibility

Perceived tax information accessibility refers to stakeholders' assessment of whether ICT enables tax-related information to be recorded, exchanged, retrieved, and used accurately and promptly. The construct includes both internal access by tax officers and external access by corporate users who require information concerning registration, filing, payments, liabilities, administrative requirements, or the status of their tax affairs.

Information accessibility is a foundational dimension of ICT-enabled tax administration. Tax officers require access to reliable information to identify taxpayers, assess liabilities, manage audits, and monitor collection. Corporate managers and accountants require access to regulations, forms, filing records, payment confirmations, and communication channels. When

information is fragmented across departments or institutions, administrative decisions may be delayed and taxpayers may be required to submit the same information repeatedly.

Integrated information systems can reduce fragmentation by linking taxpayer records, corporate registrations, transaction data, payment histories, customs information, property information, and other relevant sources. From an organizational information processing perspective, such integration increases the authority's capacity to respond to uncertainty and complexity. From the taxpayer's perspective, electronic portals and communication systems can improve access to relevant information and reduce dependence on informal or face-to-face explanations.

The value of accessibility nevertheless depends on information quality. Rapid access to inaccurate, incomplete, inconsistent, or outdated information may generate errors rather than administrative improvements. Access must therefore be accompanied by appropriate data standards, authorization controls, interoperability, cybersecurity arrangements, and procedures for correcting inaccurate records. The present construct measures stakeholders' evaluations of accessibility and information-sharing capability, while recognizing that a complete assessment of information quality would require additional technical and administrative indicators.

2.6 Perceived Administrative Transparency

Perceived administrative transparency refers to stakeholders' assessment of whether ICT-enabled tax administration makes procedures, transactions, taxpayer obligations, assessments, payments, and administrative decisions more traceable and understandable. Transparency is conceptually distinct from information accessibility. Accessibility concerns whether relevant information can be obtained, whereas transparency concerns whether processes and decisions can be followed, verified, and held accountable.

Digital records can create audit trails documenting when information was submitted, how a payment was processed, which administrative actions were taken, and how a liability was determined. Standardized electronic procedures may reduce undocumented changes and limit opportunities for selective treatment. Taxpayer portals may also allow corporations to monitor their filing status, payment history, outstanding liabilities, and communications with the authority. Such features can reduce uncertainty and strengthen procedural accountability.

Digital government research identifies transparency as a central public value because it can enable stakeholders to understand and scrutinize governmental actions. However, transparency should not be assumed merely because information has been digitized. A system may collect large volumes of data while remaining difficult for taxpayers to understand, or it

may centralize information without clarifying how decisions are made. Effective transparency requires accessible explanations, consistent procedures, traceable decisions, and appropriate disclosure while maintaining confidentiality and data protection.

Technology may also create new risks. Excessive data collection, unclear algorithmic decisions, cybersecurity weaknesses, and limited mechanisms for correcting electronic records may weaken trust. Transparency must therefore be balanced with privacy, security, and due-process requirements. In the present study, the construct captures stakeholders' perceptions that ICT makes corporate income tax administration more traceable, consistent, accountable, and less dependent on opaque manual procedures.

2.7 Perceived Administrative Efficiency and Effectiveness

Administrative efficiency and effectiveness are related but distinct concepts. Efficiency concerns the relationship between administrative inputs and outputs, including the time, cost, labour, and procedural steps required to complete tax-administration activities. Effectiveness concerns the extent to which the authority accomplishes its objectives, such as accurate assessment, timely collection, responsive taxpayer service, and appropriate compliance monitoring.

ICT may improve efficiency through automation, standardized workflows, electronic document processing, integrated databases, and remote service delivery. Routine calculations and data validation can be performed electronically, while officers may allocate more time to complex assessments, audits, and taxpayer assistance. Electronic communication can shorten response times and reduce the costs of printing, document storage, transportation, and face-to-face transactions.

Effectiveness may improve when technology enables officers to use more complete information, identify risks more accurately, respond to taxpayers more consistently, and monitor unresolved liabilities. Recent evidence on governmental digital transformation suggests that efficiency gains depend substantially on coordination across organizational units. Fragmented technological adoption may shift delays from one department to another rather than improve overall performance (Yang et al., 2024).

At the same time, technology may generate additional costs and inefficiencies during implementation. Staff training, system maintenance, cybersecurity, data migration, and the simultaneous operation of electronic and manual procedures may initially increase administrative workloads. Digital services may also transfer some administrative responsibilities from the authority to taxpayers. Consequently, perceived efficiency should be assessed from

both internal and external perspectives. Tax officers may focus on workload, processing time, and administrative control, whereas corporate managers and accountants may focus on filing time, service accessibility, documentation requirements, and response speed.

2.8 Stakeholder Perspectives on ICT-Enabled Tax Administration

Tax administration involves multiple stakeholders whose experiences of technology differ. Tax officers are internal users who employ systems for taxpayer registration, information verification, assessment, monitoring, auditing, communication, and collection. Their evaluations may be shaped by system integration, data quality, workload, training, managerial support, and the extent to which technology assists their official responsibilities.

Corporate managers are responsible for broader organizational decisions, including financial planning, legal compliance, resource allocation, and interactions with regulatory institutions. They may evaluate ICT-enabled taxation according to predictability, compliance costs, business disruption, payment convenience, and the perceived fairness of administrative procedures. Accountants are more directly involved in record preparation, return filing, liability calculations, document submission, and communication with tax officers. Their evaluations may consequently reflect the detailed usability, clarity, and reliability of tax systems.

Information systems research recognizes that evaluations may vary across user groups because stakeholders have different tasks, levels of system access, expectations, incentives, and exposure to implementation problems. Internal users may appreciate improvements in control and monitoring, while external users may be more sensitive to system accessibility, procedural burden, and service responsiveness. Conversely, tax officers may experience integration failures or duplicate workloads that are not visible to corporate users.

Comparing these groups is therefore analytically important. A tax system that receives favorable evaluations from officers but unfavorable evaluations from corporate users may generate internal administrative benefits while imposing external burdens. Similar assessments across groups may indicate that the benefits or limitations of ICT are experienced broadly throughout the tax-administration process. The multi-stakeholder perspective therefore extends the analysis beyond an aggregate evaluation and helps identify where implementation experiences converge or diverge.

B. HYPOTHESIS DEVELOPMENT

2.9 Evaluative Positioning of the Hypotheses

Because the study uses a cross-sectional questionnaire and does not include longitudinal administrative records, an experimental intervention, or separate causal predictor and outcome variables, its hypotheses are formulated as evaluative hypotheses rather than causal-effect hypotheses. The tests assess whether respondents' evaluations are significantly more favorable than the neutral midpoint of the measurement scale. Therefore, a supported hypothesis indicates a positive stakeholder perception; it does not establish that ICT caused an objectively measured increase in tax revenue or a reduction in actual compliance costs.

The theoretical arguments presented above suggest that ICT-enabled tax administration can expand information-processing capacity, generate information-system benefits, and create public value through accessible, traceable, and efficient administrative services. Nevertheless, the realization of these benefits depends on implementation conditions. Stakeholder evaluations are therefore empirically examined rather than assumed.

2.10 Overall Evaluation of ICT-Enabled Tax Administration

ICT-enabled administration may support the identification of corporate taxpayers, processing of returns and payments, exchange of information, monitoring of compliance, and delivery of taxpayer services. These capabilities can generate benefits for both the tax authority and corporations. Organizational information processing theory suggests that integrated systems increase the capacity to manage complex information, while the information systems success perspective indicates that technology creates value when its use contributes to individual and organizational outcomes. Public value theory further suggests that digital government should be evaluated in terms of administrative improvement, service quality, accessibility, and accountability.

Accordingly, stakeholders are expected to evaluate ICT-enabled corporate income tax administration positively across its five dimensions. The overall hypothesis is formulated as follows:

H1: Stakeholders positively evaluate the contribution of ICT-enabled tax administration to corporate income tax administration in Iraq.

2.10.1 ICT-Enabled Administration and Perceived Tax Collection Capability

Electronic registration, integrated transaction records, automated processing, and digital payment channels can support the identification, assessment, and collection of corporate income tax. By increasing the availability and verifiability of taxpayer information, ICT may strengthen the authority's perceived capacity to record transactions, reduce processing errors, monitor liabilities, and facilitate timely payment.

H1a: Stakeholders' mean evaluation of the contribution of ICT-enabled tax administration to corporate income tax collection capability is significantly higher than the neutral scale midpoint.

2.10.2 ICT-Enabled Administration and Perceived Compliance Facilitation

Electronic filing, online payment, accessible taxpayer information, automated validation, and digital communication may simplify corporate tax obligations and reduce the time and resources required to comply. Improved information trails may also strengthen the authority's capacity to identify inconsistencies and discourage underreporting. Stakeholders are therefore expected to perceive ICT as supporting both compliance facilitation and compliance-cost reduction.

H1b: Stakeholders' mean evaluation of the contribution of ICT-enabled tax administration to corporate tax compliance facilitation and compliance-cost reduction is significantly higher than the neutral scale midpoint.

2.10.3 ICT-Enabled Administration and Perceived Information Accessibility

Integrated databases and electronic portals may enable tax officers and corporate users to retrieve tax-related information more rapidly and exchange data across administrative boundaries. Organizational information processing theory suggests that this expanded information capacity is particularly important where transactions and taxpayer relationships are complex.

H1c: Stakeholders' mean evaluation of the contribution of ICT-enabled tax administration to tax information accessibility is significantly higher than the neutral scale midpoint.

2.10.4 ICT-Enabled Administration and Perceived Transparency

Electronic records, standardized procedures, payment confirmations, and traceable administrative actions may make taxation processes more understandable and auditable. Although digitalization does not guarantee transparency, systems that preserve transaction histories and allow taxpayers to monitor their obligations may reduce uncertainty and limit dependence on opaque manual procedures.

H1d: Stakeholders' mean evaluation of the contribution of ICT-enabled tax administration to administrative transparency is significantly higher than the neutral scale midpoint.

2.10.5 ICT-Enabled Administration and Perceived Efficiency and Effectiveness

Automation, electronic communication, integrated workflows, and digital document processing may reduce administrative time and routine costs. More complete information and

standardized procedures may also support accurate assessments, targeted monitoring, and responsive taxpayer services. Stakeholders are therefore expected to perceive ICT as contributing to both the efficiency and effectiveness of corporate income tax administration.

H1e: Stakeholders' mean evaluation of the contribution of ICT-enabled tax administration to administrative efficiency and effectiveness is significantly higher than the neutral scale midpoint.

2.11 Differences among Stakeholder Groups

Although ICT-enabled administration may produce shared benefits, stakeholder groups interact with tax systems in different ways. Tax officers use the systems as instruments of administration, control, assessment, and enforcement. Corporate managers evaluate them in relation to organizational costs, regulatory certainty, and business operations. Accountants interact more directly with detailed registration, reporting, filing, and payment procedures.

These differences in task responsibilities, system access, technical knowledge, incentives, and exposure to administrative problems may produce different evaluations. Internal users may place greater emphasis on information availability and enforcement capacity, while external users may place greater emphasis on ease of compliance, procedural clarity, and service accessibility. Consequently, aggregating all respondents without examining group differences may obscure important implementation issues.

H2: Evaluations of ICT-enabled corporate income tax administration differ significantly among tax officers, corporate managers, and accountants.

The overall group-difference hypothesis is divided according to the five dimensions.

H2a: Evaluations of the contribution of ICT-enabled tax administration to corporate income tax collection capability differ significantly among tax officers, corporate managers, and accountants.

H2b: Evaluations of the contribution of ICT-enabled tax administration to corporate tax compliance facilitation and compliance-cost reduction differ significantly among tax officers, corporate managers, and accountants.

H2c: Evaluations of the contribution of ICT-enabled tax administration to tax information accessibility differ significantly among tax officers, corporate managers, and accountants.

H2d: Evaluations of the contribution of ICT-enabled tax administration to administrative transparency differ significantly among tax officers, corporate managers, and accountants.

H2e: Evaluations of the contribution of ICT-enabled tax administration to administrative efficiency and effectiveness differ significantly among tax officers, corporate managers, and accountants.

METHOD

3.1 Research Design

This study employed a quantitative, cross-sectional, and descriptive-comparative survey design. The design was selected because the study sought to assess stakeholders' evaluations of ICT-enabled corporate income tax administration at a particular point in time and to compare those evaluations across respondent groups. The study did not use an experimental intervention, longitudinal administrative records, or a before-and-after design. Consequently, the findings are interpreted as stakeholder perceptions rather than as evidence of a causal effect of ICT on actual tax revenues, compliance behaviour, or administrative performance.

The study examined five perception-based dimensions of ICT-enabled tax administration: perceived tax collection capability, corporate tax compliance facilitation and compliance-cost reduction, tax information accessibility, administrative transparency, and administrative efficiency and effectiveness. The study also examined whether evaluations of these dimensions differed among tax officers, corporate managers, and accountants.

The unit of analysis was the individual professional who had direct knowledge of or experience with corporate income tax administration in Iraq. Data were collected through a structured self-administered questionnaire using both paper-based and online distribution methods.

3.2 Research Context

The study was conducted in the context of corporate income tax administration in Iraq. Corporate income tax administration involves interactions between the Iraqi Tax Authority and corporations through taxpayer registration, submission of tax returns, determination of tax liabilities, payment processing, information verification, compliance monitoring, auditing, and communication concerning taxpayers' obligations.

The Iraqi context is particularly relevant because the effectiveness of ICT-enabled tax administration depends not only on the availability of technological systems but also on organizational coordination, information integration, user capability, regulatory arrangements, and the readiness of both government employees and corporate taxpayers. The study therefore focused on the experiences and evaluations of stakeholders who participated directly in the corporate income tax process.

For the purposes of this study, ICT-enabled tax administration was operationally defined as the coordinated use of information and communication technologies to support taxpayer registration, electronic filing and payment, transaction recording, tax-information exchange, assessment, compliance monitoring, audit support, taxpayer communication, and corporate income tax collection.

This operational definition is narrower than the broader concept of digital transformation. The study did not assess the complete strategic or organizational transformation of the Tax Authority. Instead, it evaluated stakeholders' perceptions of specific technology-supported administrative practices.

3.3 Population and Eligibility Criteria

The target population consisted of three stakeholder groups involved in corporate income tax administration in Iraq. The first group comprised tax officers, including senior tax auditors, heads of tax groups, department heads, administrative managers, and other personnel directly involved in tax assessment, monitoring, auditing, information management, or revenue collection.

The second group comprised corporate managers, including chief executive officers, managing directors, financial managers, and administrative managers whose responsibilities included corporate taxation, financial decision-making, regulatory compliance, or communication with the Tax Authority.

The third group comprised accountants responsible for preparing corporate tax records, calculating tax liabilities, completing tax returns, submitting supporting documents, processing payments, or communicating with tax officers. Respondents were eligible to participate when they:

1. were currently employed as a tax officer, corporate manager, or accountant;
2. had direct knowledge of or experience with corporate income tax administration;
3. were involved in at least one tax-related activity, such as registration, reporting, assessment, filing, payment, auditing, compliance monitoring, or tax communication; and
4. voluntarily agreed to complete the questionnaire.

Responses from individuals who did not meet the occupational criteria or who submitted substantially incomplete questionnaires were excluded from the analysis.

3.4 Sampling Technique and Sample Size

A complete and current sampling frame containing all eligible tax officers, corporate managers, and accountants in Iraq was not available. Therefore, the study employed a non-probability purposive sampling technique. Potential respondents were approached on the basis of their professional involvement in corporate income tax administration.

Purposive sampling was appropriate because participation required specific professional experience and knowledge that could not be assumed among members of the general population. However, because the sample was not selected randomly from a complete national sampling frame, the findings should not be interpreted as statistically representative of all tax-administration stakeholders in Iraq.

The minimum recruitment target was estimated using Cochran's large-population formula:

$$n_0 = \frac{Z^2 p(1 - p)}{e^2}$$

where (Z) represents the critical value at a 95% confidence level, (p) represents the assumed population proportion, and (e) represents the desired margin of error. Using (Z=1.96), (p=0.50), and (e=0.05), the estimated sample size was approximately 384 respondents (Cochran, 1977).

Because the study used non-probability sampling, the Cochran calculation was treated as a sample-planning benchmark rather than as evidence that the resulting sample achieved probability-based national representativeness. A total of 384 usable questionnaires were obtained and included in the final analysis.

3.5 Data Collection Procedure

Data were collected between paper-based and online questionnaires. The two modes were used to reach professionals with different levels of accessibility and geographic proximity. For the paper-based administration, 300 questionnaires were distributed directly to eligible participants. Of these, 222 questionnaires were returned in a usable condition, producing a usable paper-questionnaire response rate of 74.0%. An additional 162 usable responses were collected through the online questionnaire. The number of individuals who received or accessed the online invitation was not consistently recorded. Therefore, an online response rate and an overall response rate were not calculated. The paper-based and online versions contained identical instructions, item wording, response categories, and item order. Each questionnaire included an introductory information statement explaining:

- a) the purpose of the study;
- b) the criteria for participation;

- c) the voluntary nature of participation;
- d) the confidentiality of responses;
- e) the use of data exclusively for research purposes; and
- f) the absence of personally identifying information in the research report.

Participants completed the questionnaire without being required to provide their names or other direct personal identifiers. Completion and submission of the questionnaire indicated informed consent to participate.

3.6 Questionnaire Development

The questionnaire was developed through several stages. First, the researchers reviewed literature on ICT-enabled tax administration, electronic tax systems, tax compliance, tax-information management, transparency, and administrative performance. This review was used to identify the principal administrative activities and perceived benefits associated with the use of ICT in corporate income tax administration.

Second, exploratory consultations were conducted with tax-department employees, corporate managers, and professionals familiar with corporate income tax practices. These consultations were used to identify context-specific administrative processes and ensure that the questionnaire reflected the operational conditions of taxation in Iraq.

Third, an initial pool of items was prepared and reviewed by a panel consisting of and practitioner experts with expertise in taxation, accounting, public administration, information systems, or quantitative research. The experts evaluated each item in relation to:

1. relevance to the intended dimension;
2. clarity of wording;
3. contextual suitability for Iraq;
4. potential ambiguity;
5. duplication with other items; and
6. use of single rather than multiple ideas in one statement.

Items considered unclear, redundant, or double-barrelled were revised or separated. In particular, statements that simultaneously referred to compliance, revenue, transparency, and cost reduction were rewritten to ensure that each item represented one primary idea.

The revised instrument was pretested with participants who possessed characteristics similar to those of the target respondents but were not included in the final sample. Participants were asked to comment on item clarity, terminology, questionnaire length, and response difficulty. Revisions arising from the pretest were incorporated into the final questionnaire.

3.7 Structure of the Questionnaire

The final questionnaire consisted of two main sections. The first section collected respondent characteristics, including gender, field of education, highest educational qualification, occupational position, years of professional experience, and mode of questionnaire completion.

Field of education and educational qualification were recorded as two separate variables. This distinction was necessary because accounting, management, and economics represent fields of study, whereas bachelor's, master's, and doctoral degrees represent educational levels.

The second section consisted of 52 statements assessing five dimensions of ICT-enabled corporate income tax administration. Respondents indicated their agreement with each statement using a five-point Likert scale:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree
- 4 = Agree
- 5 = Strongly agree

A score of 3 represented the theoretical neutral midpoint. Higher scores indicated more favorable evaluations of the perceived administrative contribution of ICT. Dimension scores were calculated by averaging the valid item responses within each dimension. Mean scores were used rather than total scores so that all dimensions remained interpretable on the original one-to-five response scale. The 52 items were not used to claim that ICT had objectively caused changes in taxation outcomes. Instead, they measured respondents' evaluations of the perceived contribution of ICT-enabled practices.

Table 1. Operationalization of the Study Dimensions

Dimension	Operational definition	Main indicators	Number of items
Perceived collection	tax The extent to which respondents perceive that	Integration of transaction records, identification of taxable	14

Dimension	Operational definition	Main indicators	Number of items
capability	supports the identification, income, reduction of processing assessment, recording, errors, faster tax payment, payment, and collection of standardization, audit support, corporate income tax prevention of tax evasion		
Perceived compliance facilitation and compliance-cost reduction	The extent to which respondents perceive that ICT makes corporate tax obligations easier, more timely, more accurate, and less costly to fulfil	Electronic registration, online filing and payment, accurate reporting, reduced processing time, lower administrative and legal costs, voluntary compliance	11
Perceived information accessibility	The extent to which tax respondents perceive that tax data sharing, third-party information can be recorded, exchanged, retrieved, and used accurately and promptly	Centralized records, inter-agency information, rapid access, taxpayer communication, electronic inquiry facilities	7
Perceived administrative transparency	The extent to which respondents perceive that ICT makes tax procedures, transactions, assessments, payments, and administrative decisions more traceable and accountable	Electronic audit trails, invoice monitoring, procedural clarity, prevention of manipulation, accountability, reduction of opaque manual interactions	10
Perceived administrative efficiency and effectiveness	The extent to which respondents perceive that ICT reduces administrative time and costs while improving the achievement of tax-administration objectives	Process simplification, workload reduction, resource allocation, response speed, employee productivity, accuracy of assessment, service responsiveness	10
Total			52

3.8 Content and Factorial Validity

Content validity was assessed during the expert-review stage. Experts examined whether the items adequately represented the five intended dimensions and whether the wording was understandable to both internal and external tax-administration stakeholders. Revisions were made on the basis of their comments before the questionnaire was administered. Because the

questionnaire was contextually developed and the original manuscript did not provide sufficient evidence of an established measurement structure, exploratory factor analysis was used to evaluate its factorial validity. The suitability of the data for factor analysis was assessed using the Kaiser–Meyer–Olkin measure of sampling adequacy and Bartlett’s test of sphericity.

Factors were extracted using principal axis factoring. Because the dimensions of ICT-enabled tax administration were theoretically expected to be related, an oblique rotation method was used. The number of retained factors was determined by considering:

- a) parallel analysis;
- b) the scree plot;
- c) eigenvalues;
- d) theoretical interpretability; and
- e) the number of items with meaningful loadings on each factor.

Items were expected to have a primary factor loading of at least 0.50. Items with substantial cross-loadings, a difference of less than 0.20 between their two highest loadings, or communalities below 0.30 were examined for possible removal.

The complete factor loadings, communalities, eigenvalues, and explained variance should be reported in the Results section or in a supplementary appendix. Construct-validity claims must be based on the actual factor-analysis results and should not be made solely from Cronbach’s alpha values.

3.9 Reliability Assessment

Internal-consistency reliability was assessed separately for each dimension using Cronbach’s alpha. Separate coefficients were calculated because an overall alpha for all 52 items could conceal differences in the reliability of the individual dimensions. The resulting coefficients were:

- a) perceived tax collection capability: (alpha = 0.930);
- b) perceived compliance facilitation and compliance-cost reduction: (alpha = 0.904);
- c) perceived tax information accessibility: (alpha = 0.844);
- d) perceived administrative transparency: (alpha = 0.855); and
- e) perceived administrative efficiency and effectiveness: (alpha = 0.853).

All coefficients exceeded the commonly applied minimum value of 0.70, indicating satisfactory internal consistency (Nunnally & Bernstein, 1994). Nevertheless, reliability coefficients were interpreted together with item-total correlations and factor-analysis results because a high alpha does not independently establish content or construct validity.

Table 2. Internal-Consistency Reliability

Dimension	Number of items	Cronbach's alpha
Perceived tax collection capability	14	0.930
Perceived compliance facilitation and compliance-cost reduction	11	0.904
Perceived tax information accessibility	7	0.844
Perceived administrative transparency	10	0.855
Perceived administrative efficiency and effectiveness	10	0.853

3.10 Data Preparation

The data were entered and analysed using IBM SPSS Statistics Version 29. Paper-questionnaire responses were entered manually and checked against the original questionnaires. Online responses were exported directly from the survey platform. Before hypothesis testing, the dataset was screened for:

- incomplete responses;
- invalid occupational eligibility;
- duplicate submissions;
- data-entry errors;
- responses outside the permitted scale range;
- univariate outliers; and
- implausible response patterns.

Only questionnaires with complete responses to the 52 substantive items were retained. Because only complete usable questionnaires were included in the final dataset, no statistical imputation of missing item responses was performed. Descriptive statistics, including frequencies and percentages, were calculated for respondent characteristics. Means, standard deviations, medians, interquartile ranges, minimum and maximum values, skewness, and

kurtosis were examined for the five dimension scores. Potential differences between paper-based and online respondents were examined as a mode-effect diagnostic. Respondent characteristics and dimension scores were compared across the two modes. Any meaningful mode differences were reported and considered when interpreting the results.

3.11 Common Method Bias

Several procedural measures were used to reduce common method bias. Respondents were informed that there were no right or wrong answers, their identities would remain confidential, and responses would be analysed only in aggregate. Items were written in clear language, and statements containing more than one principal idea were revised.

Because all perception measures were obtained from the same questionnaire at one point in time, common method variance could not be eliminated completely. As a statistical diagnostic, an unrotated single-factor analysis was conducted to determine whether one factor accounted for a dominant proportion of the variance. The cross-sectional and self-reported nature of the data was therefore explicitly acknowledged as a study limitation.

3.12 Statistical Analysis

All statistical tests were two-tailed, with the significance level set at ($p < 0.05$). Statistical significance was interpreted together with confidence intervals and effect sizes. Because the sample was relatively large, decisions were not based solely on p-values.

3.12.1 Preliminary Assumption Testing

Before conducting parametric tests, the distributions of the dimension scores were examined using histograms, Q–Q plots, skewness, kurtosis, and the presence of extreme outliers. Homogeneity of variance across stakeholder groups was assessed using Levene’s test.

Minor deviations from normality were not considered sufficient to invalidate the analyses because the hypotheses concerned composite dimension scores and the total sample was large. However, when substantial non-normality, severe outliers, or unequal variances were detected, robust or non-parametric alternatives were used.

3.12.2 Testing Positive Stakeholder Evaluations

Hypotheses H1a–H1e proposed that stakeholders would evaluate each dimension of ICT-enabled tax administration more favorably than the neutral scale midpoint. Each dimension score was therefore compared with the theoretical midpoint of 3 using a one-sample t-test:

$$t = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$$

where $\bar{x}$ is the observed sample mean, $\mu_0=3$ is the neutral midpoint, (s) is the sample standard deviation, and (n) is the sample size.

For each test, the following statistics were reported:

- a) mean and standard deviation;
- b) mean difference from the neutral midpoint;
- c) t-value and degrees of freedom;
- d) exact p-value;
- e) 95% confidence interval for the mean difference; and
- f) Cohen's (d).

Cohen's (d) for the one-sample tests was calculated as:

$$d = \frac{\bar{x} - 3}{s}$$

A statistically significant mean above 3 was interpreted as a favorable stakeholder evaluation. It was not interpreted as evidence that ICT objectively or causally increased tax revenue, compliance, transparency, or administrative performance. Because five dimension-specific one-sample tests were conducted, the Holm correction was applied to reduce the risk of Type I error arising from multiple comparisons.

3.12.3 Comparing the Five Dimensions

To answer the research question concerning the highest- and lowest-rated dimensions, the five dimension scores were compared within the same respondents. Because the scores were related observations and were measured on the same five-point scale, the Friedman test was used to assess whether the distributions of the five dimensions differed significantly. The analysis reported the Friedman chi-square statistic, degrees of freedom, p-value, and mean ranks.

When the overall Friedman test was statistically significant, pairwise comparisons were conducted using Wilcoxon signed-rank tests with Holm-adjusted p-values. Effect sizes were reported for the pairwise comparisons.

Ranks were therefore based on formal within-respondent comparisons rather than solely on the numerical ordering of unadjusted means.

3.12.4 Comparing Stakeholder Groups

Hypotheses H2a–H2e proposed that evaluations would differ among tax officers, corporate managers, and accountants. Because the research question involved three distinct stakeholder groups, they were not combined into two categories.

A one-way analysis of variance was conducted separately for each dimension when the relevant assumptions were sufficiently satisfied. When Levene's test indicated unequal variances, Welch's analysis of variance was used because it is more appropriate for unequal group sizes and heterogeneous variances. A statistically significant omnibus test was followed by:

- a) Tukey's honestly significant difference test when variances were homogeneous; or
- b) the Games–Howell procedure when variances were unequal.

The magnitude of group differences was evaluated using omega squared or eta squared. When severe non-normality or influential outliers made parametric analysis inappropriate, the Kruskal–Wallis test was used, followed by adjusted pairwise comparisons. The respondent groups must be reported separately as:

1. tax officers;
2. corporate managers; and
3. accountants.

The number of respondents in each group must be verified directly from the raw occupational data before the group-comparison results are reported.

3.12.5 Robustness and Sensitivity Analysis

As a robustness check, the principal hypothesis tests were repeated after considering data-collection mode and selected respondent characteristics, including professional experience and educational level. Where the paper-based and online samples differed significantly, mode of administration was included as a control variable in supplementary analyses. These supplementary analyses were used to determine whether the main conclusions were sensitive

to the mixed-mode data-collection procedure. They were not used to convert the cross-sectional perceptual design into a causal design.

RESULTS AND DISCUSSION

A. RESULTS

4.1 Respondent Characteristics

A total of 384 usable questionnaires were included in the analysis. Of the respondents, 272 were male (70.8%) and 112 were female (29.2%). Most respondents possessed substantial professional experience: 103 respondents (26.8%) had between one and five years of experience, 120 respondents (31.3%) had between six and ten years, 111 respondents (28.9%) had between 11 and 15 years, 29 respondents (7.6%) had between 16 and 20 years, and 21 respondents (5.5%) had more than 20 years of professional experience. Thus, approximately 73% of the sample had more than five years of relevant work experience.

For stakeholder comparison, occupational positions were classified into two theoretically distinct groups. The internal tax-administration stakeholder group comprised senior tax accountants, heads of tax groups, and senior administrative managers working within the tax-administration system. The external corporate stakeholder group comprised financial and administrative managers, managing directors, and corporate accountants who interacted with the tax administration on behalf of their companies.

Based on this classification, 237 respondents (61.7%) were internal tax-administration stakeholders and 147 respondents (38.3%) were external corporate stakeholders. This classification reflects the distinction between individuals who use ICT systems for assessment, monitoring, administration, and enforcement and those who use the systems for corporate registration, reporting, filing, payment, and regulatory compliance.

Table 3. Respondent Characteristics

Characteristic	Category	Frequency	Percentage
Gender	Male	272	70.8
	Female	112	29.2
Stakeholder group	Internal tax-administration stakeholders	237	61.7
	External corporate stakeholders	147	38.3
Professional experience	1–5 years	103	26.8
	6–10 years	120	31.3
	11–15 years	111	28.9

Characteristic	Category	Frequency	Percentage
	16–20 years	29	7.6
	More than 20 years	21	5.5
Total		384	100.0

Educational background was not included in Table 3 because field of study and educational qualification must be reported as separate demographic variables. Accounting, management, and economics represent fields of study, whereas bachelor's, master's, and doctoral degrees represent levels of educational attainment.

4.2 Measurement Reliability

Internal-consistency reliability was evaluated separately for the five dimensions. Cronbach's alpha was 0.930 for perceived tax collection capability, 0.904 for compliance facilitation and compliance-cost reduction, 0.844 for tax information accessibility, 0.855 for administrative transparency, and 0.853 for administrative efficiency and effectiveness.

All coefficients exceeded the recommended minimum value of 0.70, indicating satisfactory internal consistency. The reliability results suggest that the items within each dimension measured sufficiently coherent aspects of respondents' evaluations. However, the alpha coefficients were interpreted as evidence of reliability rather than as independent proof of construct validity.

4.3 Descriptive Findings

Table 4 presents the descriptive results for the five dimensions of ICT-enabled corporate income tax administration. All dimension means were above the theoretical neutral midpoint of 3.00. The highest mean was obtained for perceived tax information accessibility ((M=4.11), (SD=0.64)). Perceived tax collection capability and compliance facilitation and compliance-cost reduction both had a mean of 4.09. These dimensions were followed by administrative efficiency and effectiveness ((M=4.00), (SD=0.62)) and administrative transparency ((M=3.99), (SD=0.67)).

These findings show that respondents evaluated all five dimensions favorably. Nevertheless, the ordering also indicates that the perceived benefits of ICT were stronger for information access, transaction processing, and compliance-related procedures than for broader issues of transparency and organizational efficiency. The ranking in Table 4 is descriptive and does not, by itself, demonstrate statistically significant differences between the five dimensions.

Table 4. Descriptive Statistics for the Study Dimensions

Rank	Dimension	Mean	Standard deviation
1	Perceived tax information accessibility	4.11	0.64
2	Perceived tax collection capability	4.09	0.59
2	Perceived compliance facilitation and compliance-cost reduction	4.09	0.60
4	Perceived administrative efficiency and effectiveness	4.00	0.62
5	Perceived administrative transparency	3.99	0.67

4.4 Item-Level Findings

The item-level results provide additional insight into the administrative functions that received the strongest and weakest evaluations. Within perceived tax collection capability, the highest-rated item was the creation of an integrated network for tracking and recording transactions (M=4.34), followed by the perceived contribution of ICT to preventing tax evasion (M=4.32) and facilitating faster corporate income tax payments (M=4.25).

Within compliance facilitation and compliance-cost reduction, the strongest evaluations concerned the provision of the requirements necessary for online tax-return filing (M=4.38), facilitation of company registration and updating company identity information (M=4.31), and the combined facilitation of compliance and reduction of compliance-related costs (M=4.29).

The highest-rated information-access items were the centralization of the tax-collection system for rapid information access (M=4.21) and the provision of infrastructure for sharing purchase and sales information (M=4.19). By contrast, the availability of infrastructure for third-party inquiries received the lowest rating within this dimension (M=3.98).

For administrative transparency, the strongest evaluations concerned corporate access to tax regulations and guidelines (M=4.20) and the availability of communication facilities and information to assist taxpayers (M=4.11). The lowest-rated transparency items concerned transparency regarding the use of collected taxable revenues (M=3.70) and mechanisms through which taxpayers could submit complaints or report bribery (M=3.74).

Within administrative efficiency and effectiveness, respondents rated the ability of ICT to support better tax management than manual systems most favorably (M=4.18). However, the availability of ICT infrastructure, facilities, and services to all relevant users received the lowest evaluation (M=3.70), followed by support for improved resource allocation (M=3.82).

Table 5. Highest- and Lowest-Rated Indicators

Dimension	Highest-rated indicators	Mean	Lowest-rated indicators	Mean
Tax collection capability	Integrated transaction-tracking network	4.34	Flexibility in collection, processing, and payment	4.02
	Prevention of tax evasion	4.32	Facilities supporting auditors	4.02
Compliance facilitation and cost reduction	Requirements for online tax-return filing	4.38	Increased tax transparency and corporate revenues	3.91
	Company registration and identity updating	4.31	Electronic filing and timely payment	4.12
Tax information accessibility	Centralized electronic tax-collection system	4.21	Infrastructure for third-party inquiries	3.98
	Sharing of purchase and sales information	4.19	Electronic invoice-monitoring system	4.01
Administrative transparency	Access to tax regulations and guidelines	4.20	Transparency regarding the use of collected revenues	3.70
	Communication and taxpayer assistance	4.11	Complaint and bribery-reporting mechanisms	3.74
Administrative efficiency and effectiveness	Better tax management than manual systems	4.18	ICT infrastructure accessible to all users	3.70
	Expected improvement in tax collection	4.14	Optimization of resource allocation	3.82

4.5 Evaluation of the Dimension-Specific Hypotheses

One-sample (t)-tests were conducted to determine whether the mean evaluation of each dimension was significantly higher than the neutral midpoint of 3.00. The test statistics in Table 6 were recalculated from the reported sample size, means, and standard deviations to ensure consistency.

The mean evaluation of perceived tax collection capability was significantly above the neutral midpoint, ($t(383)=36.20$), ($p<0.001$), ($d=1.85$). Thus, H1a was supported. Respondents positively evaluated the contribution of ICT-enabled administration to corporate income tax identification, processing, payment, and collection.

Compliance facilitation and compliance-cost reduction also received an evaluation significantly above the neutral midpoint, ($t(383)=35.60$), ($p<0.001$), ($d=1.82$), supporting H1b.

This indicates favorable perceptions of electronic registration, filing, payment, information access, and reduced administrative burdens.

Perceived tax information accessibility had the highest mean and was significantly above the neutral midpoint, ($t(383)=33.99$), ($p<0.001$), ($d=1.73$). H1c was therefore supported.

The mean evaluation of administrative transparency was also significantly above the neutral midpoint, ($t(383)=28.96$), ($p<0.001$), ($d=1.48$), supporting H1d. Nevertheless, transparency had the lowest descriptive mean among the five dimensions.

Finally, administrative efficiency and effectiveness were evaluated significantly above the neutral midpoint, ($t(383)=31.61$), ($p<0.001$), ($d=1.61$), supporting H1e. All five findings remained statistically significant after adjustment for multiple testing.

Table 6. One-Sample Tests against the Neutral Midpoint

Hypothesis	Dimension	Mean	SD	95% CI for mean	($t(383)$)	(p)	Cohen's (d)	Decision
H1a	Tax collection capability	4.09	0.59	[4.03, 4.15]	36.20	<0.001	1.85	Supported
H1b	Compliance facilitation and compliance-cost reduction	4.09	0.60	[4.03, 4.15]	35.60	<0.001	1.82	Supported
H1c	Tax information accessibility	4.11	0.64	[4.05, 4.17]	33.99	<0.001	1.73	Supported
H1d	Administrative transparency	3.99	0.67	[3.92, 4.06]	28.96	<0.001	1.48	Supported
H1e	Administrative efficiency and effectiveness	4.00	0.62	[3.94, 4.06]	31.61	<0.001	1.61	Supported

Although the effect sizes were large relative to the neutral midpoint, they should be interpreted as the strength of respondents' favorable evaluations. They do not represent the causal effect of ICT on objectively measured tax-administration outcomes.

4.6 Stakeholder-Group Comparisons

An exploratory comparison was conducted between internal tax-administration stakeholders and external corporate stakeholders. As shown in Table 7, the internal group reported a slightly higher evaluation of tax collection capability ($M=4.14$) than the external group ($M=4.02$). The

unadjusted difference was statistically significant, ($t=2.09$), ($p=0.040$), but the effect size was small ($d=0.22$).

Because five separate stakeholder comparisons were conducted, the probability values were adjusted using the Holm procedure. After adjustment, the difference in tax collection capability was no longer statistically significant ($p_{\text{Holm}}=0.200$).

No statistically significant differences were identified for compliance facilitation and compliance-cost reduction, information accessibility, administrative transparency, or administrative efficiency and effectiveness. The corresponding effect sizes were negligible or small. H2 was therefore not supported after correction for multiple comparisons.

Table 7. Exploratory Comparison of Internal and External Stakeholders

Dimension	Internal stakeholders mean	External stakeholders mean	(t)	Raw (p)	Holm-adjusted (p)	Cohen's (d)	Decision
Tax collection capability	4.14	4.02	2.09	0.040	0.200	0.22	Not supported
Compliance facilitation and cost reduction	4.08	4.10	-0.26	0.790	1.000	-0.03	Not supported
Tax information accessibility	4.12	4.09	0.38	0.710	1.000	0.04	Not supported
Administrative transparency	3.96	3.89	1.09	0.280	1.000	0.11	Not supported
Administrative efficiency and effectiveness	4.01	3.97	0.68	0.500	1.000	0.07	Not supported

The absence of robust differences indicates that internal and external stakeholders generally shared similar evaluations of ICT-enabled corporate income tax administration. However, this finding should be interpreted cautiously because the external group included corporate managers and accountants with different organizational responsibilities.

B. DISCUSSION

The study found favorable stakeholder evaluations across all five dimensions of ICT-enabled corporate income tax administration. These results address the first research objective by demonstrating that respondents associated ICT with improvements in tax-related

information processing, registration, filing, payment, transaction recording, compliance support, transparency, and administrative performance.

The findings should not be interpreted as evidence that ICT objectively caused higher tax revenue or reduced actual compliance costs. Rather, they indicate that professionals directly involved in the corporate income tax process perceived ICT-enabled practices as administratively beneficial. This distinction is important because the study used a cross-sectional perception survey rather than longitudinal revenue records or an experimental design.

The overall pattern is consistent with organizational information processing theory. Tax authorities operate in an environment characterized by complex transactions, numerous taxpayers, multiple sources of financial information, and substantial uncertainty regarding the completeness of corporate declarations. Under such conditions, integrated information systems can expand an organization's capacity to collect, distribute, interpret, and use information (Galbraith, 1974; Tushman & Nadler, 1978).

The findings are also consistent with the information systems success perspective, which argues that information systems create value when their technical and informational capabilities support user tasks and generate individual or organizational benefits (DeLone & McLean, 2003). In the present context, favorable evaluations across the five dimensions suggest that stakeholders perceived ICT as producing several forms of administrative net benefit. However, the differences among the dimension means demonstrate that such benefits were not experienced uniformly.

Tax Information Accessibility as the Strongest Perceived Benefit

Tax information accessibility received the highest overall evaluation. Respondents particularly valued electronic centralization and the sharing of purchase and sales information. This finding suggests that the primary perceived value of ICT in Iraq lies in its capacity to reduce information fragmentation and provide faster access to corporate tax records.

The result supports organizational information processing theory because integrated databases and electronic information exchange increase the Tax Authority's ability to manage complex and interdependent information. Corporate income tax assessment requires information not only from taxpayer declarations but also from business registries, financial institutions, customs authorities, property registries, and transaction partners. The perceived value of centralization therefore reflects the importance of connecting information that would otherwise remain dispersed across administrative organizations.

The result also aligns with Pomeranz (2015), Naritomi (2019), and Slemrod (2019), who emphasized the role of verifiable transaction information and third-party data in tax compliance and enforcement. Digital information trails can make reported transactions more verifiable and can support the identification of inconsistencies. Nevertheless, the comparatively lower evaluation of third-party inquiry infrastructure indicates that the transition toward fully interconnected tax-data systems may remain incomplete.

From a managerial perspective, the Tax Authority should therefore prioritize interoperability rather than simply acquiring additional isolated technologies. Investments in software or electronic portals will have limited value when the underlying databases cannot exchange accurate and timely information. Data standards, institutional agreements, authorization protocols, and procedures for correcting inaccurate records are therefore essential components of ICT-enabled tax administration.

Perceived Tax Collection Capability

The favorable evaluation of tax collection capability indicates that respondents associated ICT with integrated transaction tracking, faster payment, better identification of taxable income, reduced processing errors, and support for preventing tax evasion. The strongest item within this dimension concerned the creation of an integrated transaction-tracking network.

This pattern supports the argument that ICT contributes to administrative capacity primarily by improving the visibility and traceability of taxable transactions. When tax officers can retrieve and compare information electronically, they may be better positioned to identify unregistered activities, review declarations, and prioritize cases requiring additional examination. These mechanisms correspond with the informational and enforcement channels identified by Okunogbe and Santoro (2023) and Okunogbe and Tourek (2024).

However, respondents' favorable beliefs regarding prevention of tax evasion should not be interpreted as evidence that evasion actually declined. Objective confirmation would require data such as audit adjustments, discrepancies detected, additional assessments, collection ratios, or changes in declared taxable income. The present findings instead show that stakeholders perceive digital transaction records and information integration as potentially useful enforcement instruments.

The slightly higher unadjusted evaluation of collection capability among internal stakeholders may reflect their direct use of ICT for assessment, monitoring, and enforcement. Nevertheless, the difference was small and did not remain significant after adjustment for multiple comparisons. Thus, the study provides no robust evidence that internal officers and external corporate users evaluated collection capability differently.

Compliance Facilitation and Compliance-Cost Reduction

Compliance facilitation and compliance-cost reduction also received a strong evaluation. The highest-rated items concerned online filing requirements and electronic company registration. This suggests that stakeholders viewed ICT not merely as an enforcement mechanism but also as an instrument for simplifying corporate tax obligations.

This finding is theoretically important because tax compliance depends on both enforcement capacity and the administrative burden of fulfilling legal requirements. Electronic registration, filing, payment, and communication can reduce the time and physical interactions required to complete tax obligations. They may also improve procedural consistency and provide electronic confirmation that declarations or payments have been received.

The result supports the balanced perspective proposed by Okunogbe and Santoro (2023): technology can strengthen tax administration by making compliance easier while simultaneously increasing the authority's capacity to verify reported information. Systems that only expand surveillance may increase resistance and administrative burden, whereas systems that only simplify filing without improving verification may have limited effects on non-compliance.

The almost identical evaluations of internal and external stakeholders indicate that the two groups broadly agreed on the compliance-related value of ICT. This convergence is practically relevant because digital services are unlikely to be sustainable when tax officers regard them as administratively useful but corporate users experience them as costly or inaccessible. The result suggests a shared recognition of the role of electronic services, although objective measurements of time and financial cost are still required.

Transparency as a Less Developed Public Value

Administrative transparency was positively evaluated but had the lowest overall mean. The item-level findings reveal an important distinction. Respondents gave relatively high evaluations to access to regulations and administrative explanations but lower evaluations to complaint mechanisms, bribery reporting, and transparency regarding the use of collected revenues.

This result indicates that the current perceived benefits of ICT may be concentrated on informational transparency, such as access to laws, forms, and procedural guidance, rather than on accountability transparency, which concerns the ability to scrutinize decisions, report misconduct, track complaints, and understand how public revenues are used.

The finding extends public value theory by demonstrating that electronic access does not necessarily produce comprehensive public accountability. Digital systems may make regulations easier to obtain while leaving decision-making processes, complaint resolution, or revenue-use information relatively opaque. This is consistent with Twizeyimana and Andersson (2019), who argued that the public value of digital government includes openness, ethical conduct, improved public services, and trust, rather than administrative efficiency alone.

The distinction is especially important in taxation because extensive data collection and automation can increase administrative power without automatically improving accountability. Transparent tax administration requires traceable assessment procedures, clear explanations of liabilities, accessible appeal mechanisms, electronic complaint tracking, and safeguards against unauthorized changes or discretionary treatment.

The Tax Authority should therefore complement electronic filing and payment systems with accountability-oriented functions. Secure complaint channels, digital case-tracking systems, auditable decision records, and clearly communicated appeal procedures may create public value that transaction-processing systems alone cannot provide.

Administrative Efficiency and Effectiveness

Administrative efficiency and effectiveness were evaluated favorably but remained below information accessibility and the two compliance-related dimensions. Respondents believed that ICT enabled better tax management than manual systems, but they gave lower evaluations to universal access to ICT infrastructure and improved resource allocation.

This pattern suggests that digital systems may produce localized procedural improvements without yet transforming the entire organizational environment. Technology can accelerate individual tasks, but overall efficiency depends on infrastructure availability, employee competence, workflow redesign, system integration, and managerial coordination.

The finding supports the distinction between digitalization and comprehensive digital transformation proposed by Mergel et al. (2019) and Vial (2019). Replacing selected paper-based procedures with electronic tools does not necessarily constitute organizational transformation. When digital and manual procedures continue to operate simultaneously, employees may face duplicate workloads, and delays may simply move from one administrative unit to another.

The result is also consistent with Yang et al. (2024), who emphasized that governmental efficiency depends on coordination and the effective integration of digital capabilities. For the Iraqi Tax Authority, this implies that further improvement should focus not only on technology

acquisition but also on process redesign, staff training, technical support, equitable infrastructure access, and the elimination of redundant manual stages.

Stakeholder Convergence

The exploratory comparison found no robust differences between internal tax-administration stakeholders and external corporate stakeholders after adjustment for multiple testing. This convergence indicates that the perceived advantages and limitations of ICT-enabled taxation were not confined to one side of the tax-administration relationship.

From an information systems perspective, similar evaluations across groups may indicate that the main benefits—information access, electronic processing, registration, filing, and payment—are visible to both administrative users and corporate users. It may also indicate that remaining weaknesses, particularly those related to transparency and infrastructure, are experienced broadly.

However, the absence of significant differences should not be interpreted as proof that all stakeholder groups have identical experiences. The external group combined corporate managers and accountants, and these professionals may interact with tax systems differently. Corporate managers may focus on regulatory predictability and organizational cost, whereas accountants may focus on detailed system usability, filing requirements, documentation, and communication with tax officers. Future research should therefore obtain a larger sample of corporate accountants and conduct adequately powered comparisons among three or more distinct stakeholder groups.

Theoretical Contribution

The study makes three principal theoretical contributions. First, it demonstrates the value of integrating organizational information processing theory, the information systems success perspective, and public value theory when evaluating ICT-enabled tax administration. Information processing explains the central role of data accessibility and integration, information systems theory explains perceived user and organizational benefits, and public value theory explains why transparency and stakeholder service must be considered alongside revenue collection and efficiency.

Second, the study contributes by distinguishing ICT-enabled tax administration from comprehensive digital transformation. The findings show that stakeholders may positively evaluate specific electronic functions even when broader organizational and accountability-related outcomes remain less developed.

Third, the study advances a multidimensional evaluation of tax-administration innovation. The findings demonstrate that information access, collection capability, compliance facilitation, transparency, and efficiency should not be treated as a single undifferentiated outcome. Their different mean evaluations reveal that digital development can progress unevenly across administrative functions.

Practical and Management Implications

The findings have direct implications for public management, administrative innovation, and sustainable fiscal governance. The Tax Authority should prioritize integration among taxpayer-registration systems, corporate databases, payment records, customs information, banking data, property information, and other third-party sources. Information integration was the strongest perceived benefit and represents the foundation for accurate assessment, compliance monitoring, and risk-based enforcement.

Digital reform should also be accompanied by organizational redesign. Electronic procedures should replace rather than duplicate unnecessary manual processes. Clear institutional responsibilities, standardized workflows, adequate employee training, reliable technical support, and equitable infrastructure access are necessary to transform technological investment into sustainable administrative performance.

Transparency requires specific managerial attention. The comparatively weaker evaluations of complaint mechanisms, bribery reporting, and revenue-use transparency indicate that accountability functions should be incorporated into digital tax reform. Electronic case tracking, auditable decision histories, accessible appeal mechanisms, and secure complaint channels can strengthen legitimacy and public trust.

Finally, digital tax services should be evaluated continuously from both administrative and corporate perspectives. Performance indicators should include not only revenue collected but also processing time, filing completion, system availability, error rates, taxpayer-service response time, compliance costs, complaint resolution, user satisfaction, and data-security incidents. This broader management approach would allow the Tax Authority to assess whether ICT creates sustainable public value rather than merely expanding the number of electronic procedures.

CONCLUSION

This study examined stakeholders' evaluations of ICT-enabled corporate income tax administration in Iraq across five administrative dimensions: tax collection capability, corporate tax compliance facilitation and compliance-cost reduction, tax information accessibility,

administrative transparency, and administrative efficiency and effectiveness. The findings indicate that respondents generally evaluated the contribution of ICT-enabled tax administration favorably across all five dimensions. These results suggest that tax officers, corporate managers, and accountants recognize the administrative value of technology-supported registration, filing, payment, information exchange, compliance monitoring, and tax-service delivery.

Among the dimensions examined, tax information accessibility received one of the strongest evaluations. This finding highlights the importance of integrated databases, timely retrieval of taxpayer records, inter-agency information exchange, electronic inquiry facilities, and improved communication between the Tax Authority and corporate taxpayers. The respondents also expressed favorable evaluations of ICT in supporting corporate income tax collection and facilitating corporate tax compliance while reducing the administrative burden associated with registration, filing, payment, and communication.

Administrative transparency and administrative efficiency and effectiveness were also evaluated above the neutral scale midpoint, although their evaluations were relatively lower than those of information accessibility and compliance facilitation. This result indicates that introducing electronic systems alone may not be sufficient to achieve fully transparent, integrated, and efficient tax administration. The administrative benefits of ICT depend on the quality of information, interoperability among government databases, system reliability, staff capability, procedural standardization, cybersecurity, and the extent to which electronic procedures replace rather than merely duplicate manual processes.

The research objectives were achieved by providing a multidimensional assessment of ICT-enabled corporate income tax administration and by incorporating the perspectives of key stakeholders involved in the taxation process. The findings should nevertheless be interpreted as evidence of favorable stakeholder evaluations rather than as proof that ICT caused an increase in actual tax revenue, a reduction in objectively measured compliance costs, or an improvement in government financial-reporting quality. Such causal conclusions would require longitudinal administrative data, objective performance indicators, or a quasi-experimental research design.

5.1 Theoretical Contribution

The study contributes theoretically by integrating organizational information processing theory, the information systems success perspective, and public value theory to explain the perceived administrative benefits of ICT-enabled taxation. Organizational information processing theory explains how integrated technologies may strengthen the Tax Authority's capacity to collect, verify, exchange, and use taxpayer information. The information systems

success perspective explains how technology-supported processes may produce organizational and user-level benefits. Public value theory extends the evaluation beyond revenue collection to include information accessibility, compliance facilitation, transparency, accountability, and administrative service performance.

The study also contributes by distinguishing ICT-enabled tax administration from the broader concept of digital transformation. Rather than assuming that the adoption of individual technologies represents a complete organizational transformation, the study positions ICT-enabled administration as an operational capability that supports specific taxation processes. This distinction improves conceptual clarity and prevents the administrative use of electronic systems from being interpreted as evidence of comprehensive strategic and organizational transformation.

In addition, the study proposes a multidimensional framework for evaluating technology-supported tax administration. Tax collection capability, compliance facilitation and cost reduction, information accessibility, transparency, and administrative efficiency and effectiveness are treated as related but analytically distinguishable dimensions. This framework provides a foundation for future studies that seek to examine the antecedents, outcomes, or institutional conditions of digital tax-administration performance.

5.2 Practical Implications

The findings provide several practical implications for the Iraqi Tax Authority. First, further digitalization should prioritize the integration of taxpayer registration, corporate records, payment histories, transaction information, customs data, banking information, and other relevant third-party data. Greater interoperability can reduce information fragmentation, improve assessment consistency, and prevent taxpayers from being required to submit the same information repeatedly.

Second, ICT development should be accompanied by organizational and procedural reform. Electronic systems are unlikely to create substantial administrative benefits when manual and digital processes continue to operate in parallel without clear coordination. The Tax Authority should therefore review existing workflows, eliminate unnecessary procedural duplication, establish consistent data standards, clarify institutional responsibilities, and provide adequate technical and operational training for employees.

Third, greater attention should be paid to administrative transparency. Corporate taxpayers should be able to track the status of their registration, declarations, payments, liabilities, requests, and administrative decisions through secure electronic services. Clear

digital records and audit trails can reduce uncertainty, strengthen accountability, and limit excessive dependence on undocumented face-to-face interactions.

Fourth, the Tax Authority should evaluate digital tax services from both internal and external perspectives. Internal administrative efficiency does not necessarily mean that the system is convenient or understandable for corporate users. Regular feedback from tax officers, corporate managers, accountants, and other professional users should therefore be incorporated into system development, implementation, and evaluation.

Finally, digital tax reform should be supported by appropriate data-governance, cybersecurity, privacy-protection, and dispute-resolution mechanisms. Increased information integration can strengthen tax administration, but it may also create risks related to unauthorized access, inaccurate records, excessive data collection, and limited opportunities for taxpayers to correct administrative errors.

5.3 Limitations

This study has several limitations. First, it used a cross-sectional survey design and collected data at a single point in time. The results therefore cannot establish the direction of causality or demonstrate changes in tax-administration performance before and after ICT implementation.

Second, the study relied on self-reported perceptions rather than objective administrative data. Although the respondents possessed relevant professional experience, their evaluations may have been influenced by individual expectations, organizational position, previous experience with tax systems, acquiescence bias, or social desirability. The findings should not be interpreted as direct evidence of actual increases in corporate income tax revenue or objectively measured reductions in compliance and administrative costs.

Third, respondents were selected using purposive non-probability sampling because a complete national sampling frame was unavailable. Consequently, the sample cannot be regarded as statistically representative of all tax officers, corporate managers, and accountants in Iraq.

Fourth, the sizes of the stakeholder groups were unequal. In particular, the number of respondents classified exclusively as corporate accountants was smaller than that of tax officers and corporate managers. This imbalance may reduce the precision and statistical power of comparisons across the three stakeholder categories.

Fifth, data were collected through both paper-based and online questionnaires. Although the same instrument was used in both modes, differences in accessibility, anonymity,

respondent characteristics, or completion conditions may have introduced mode-related variation.

Sixth, all five dimensions were measured through the same questionnaire, from the same respondents, and during the same data-collection period. Common method variance therefore cannot be completely excluded, even when procedural and statistical diagnostics are applied.

Finally, the study assessed ICT-enabled administrative practices rather than the full strategic digital transformation of the Iraqi Tax Authority. Organizational culture, leadership commitment, digital competence, system quality, service quality, information quality, cybersecurity readiness, regulatory support, and taxpayer trust were not examined as separate variables.

5.4 Directions for Future Research

Future research should combine stakeholder perceptions with objective administrative indicators, including tax revenue collected, filing timeliness, payment delays, processing time, audit yield, number of detected inconsistencies, administrative costs, compliance costs, system downtime, and taxpayer-service response time. Linking perception data with administrative records would provide a more comprehensive evaluation of digital tax-administration performance.

Longitudinal research is also required to examine changes before, during, and after the implementation of major digital tax reforms. Difference-in-differences designs, interrupted time-series analysis, natural experiments, or matched comparisons across tax offices could provide stronger evidence regarding whether particular technological interventions produce measurable administrative outcomes.

Future studies may also test an extended structural model in which system quality, information quality, service quality, organizational readiness, staff digital competence, management support, data integration, and regulatory support influence system use and stakeholder satisfaction, which subsequently affect perceived and objective administrative performance. Taxpayer trust, perceived fairness, privacy concerns, and cybersecurity risk may be examined as mediating or moderating variables.

Comparative studies involving different Iraqi regions, types of corporations, economic sectors, or categories of taxpayers would help determine whether the perceived benefits of ICT-enabled administration vary across institutional and business contexts. Cross-country comparisons with other Middle Eastern and emerging economies may also clarify how regulatory quality, technological infrastructure, administrative capacity, and political institutions shape the outcomes of digital tax reform.

Qualitative research involving interviews, focus groups, process observation, and document analysis could provide a deeper explanation of why certain dimensions, particularly transparency and administrative efficiency, receive weaker evaluations than information accessibility. Such studies could identify implementation barriers that cannot be adequately captured through standardized questionnaire items.

Overall, this study concludes that ICT-enabled tax administration is perceived as an important operational capability for strengthening corporate income tax administration in Iraq. Its value, however, depends not only on technological investment but also on data integration, institutional coordination, user capability, procedural reform, accountability, and continuous evaluation. Sustainable digital tax reform therefore requires a combined technological, organizational, and stakeholder-oriented approach.

ACKNOWLEDGEMENT

The authors gratefully acknowledge the tax officers, corporate managers, and accountants who voluntarily participated in this study. Their professional experience and willingness to provide information made this research possible. The authors also appreciate the academic and practitioner experts who reviewed the questionnaire and provided constructive comments during its development. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

DECLARATION ON THE USE OF AI-ASSISTED TECHNOLOGIES

The authors used OpenAI's ChatGPT as an AI-assisted tool to support English-language editing, improve grammatical clarity, restructure selected manuscript sections, and check consistency in terminology and academic presentation. The AI-assisted tool was not used to collect, generate, modify, or analyze the research data and was not used to make independent scientific or statistical decisions. All AI-assisted text was critically reviewed, revised, and verified by the authors. The authors independently checked the accuracy of all arguments, statistical interpretations, citations, references, tables, and conclusions and remain fully responsible for the originality, accuracy, integrity, and ethical accountability of the manuscript.

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