

	<h1 style="color: red;">GOMAL UNIVERSITY</h1> <h2 style="color: blue;">JOURNAL OF RESEARCH</h2> <p>Gomal University, Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan  ISSN: 1019-8180 (Print)      ISSN: 2708-1737 (Online)</p>				
Website	<a href="http://www.gujr.com.pk">www.gujr.com.pk</a>	HEC Recognized	Social Sciences	CrossRef	DOI: 10.51380

## THE INFLUENCE OF INTERNAL CONTROL SYSTEM AND AUDIT TECHNOLOGY ON BUSINESS PERFORMANCE: MEDIATING ROLE OF AUDIT EXPERTISE

**Ankit Katrodia<sup>1</sup>, Qazi Rehmatullah<sup>2</sup> & Muhammad Naeem Anjum<sup>3</sup>**

<sup>1</sup>Associate professor, Economic & Management Sciences, North-West University, SOUTH AFRICA

<sup>2</sup>Manager Audit, Enem Enterprises, Dune London & Diesel Brands, London, UNITED KINGDOM

<sup>3</sup>Associate Professor, Management Sciences, Superior University Layyah Campus, Punjab, Pakistan

KEYWORDS	ABSTRACT
<p><b>Internal Control Systems, Audit Technology, Business Performance, Audit Expertise</b></p>	<p>The current study investigates the impact of internal control systems &amp; audit technology on business performance and financial transparency in the United Kingdom's retail sector. In an increasingly competitive and regulated environment, retail organizations must adopt effective auditing practices to ensure accuracy, compliance &amp; operational efficiency. This study specifically examines how audit managers' expertise and decision-making mediate the relationship amid audit practices &amp; organizational outcomes. A quantitative research design was employed, primary data collected through structured questionnaires distributed among employees working in retail organizations across UK. A total of 300 valid responses were obtained using a convenience sampling technique. The statistical analysis was conducted to evaluate the relationships between variables and to test mediating effect of audit expertise. The findings reveal that internal control systems and use of audit technology both have significant positive impact on business performance and financial transparency. Organizations with strong internal controls and advanced technological tools are better equipped to detect the errors, prevent fraud, and enhance reporting accuracy. Furthermore, the study highlights that audit expertise plays a crucial mediating role, as skilled audit managers strengthen the effectiveness of these systems through the informed decision-making and professional judgment.</p>
<p>Article History</p>	<div style="text-align: right;">  </div>
<p><b>Date of Submission:</b> 02-02-2026</p> <p><b>Date of Acceptance:</b> 14-03-2026</p> <p><b>Date of Publication:</b> 30-03-2026</p>	
Corresponding Author	Ankit Katrodia: <a href="mailto:Ankit.katrodia@nwu.ac.za">Ankit.katrodia@nwu.ac.za</a>
DOI	<a href="https://doi.org/10.51380/gujr-42-01-03">https://doi.org/10.51380/gujr-42-01-03</a>

### INTRODUCTION

United Kingdom retail market is a more digitalized and stricter in governance and stakeholder scrutiny of transparency and quality of control. The official UK statistics reflect that online channels still take a significant portion of retail activity and the bigger picture statistics of UK management and technology survey indicate that there is continued diffusion of digital tools

among firms. Simultaneously, audit regulator of UK has kept emphasizing the role of quality of audit, effectiveness of audit controls as foundation of confidence in reporting and control. These changes render control systems, audit processes & audit capability more consequential in retail organizations, operating model that has highly transactional nature, is geographically dispersed, relies upon the technology (Financial Reporting Council, 2025; Office for National Statistics, 2025, 2026). This institutional change is reflected in the current scholarly writing in auditing. Recent literature demonstrates internal auditing as a service experiencing significant change in digitalizing the world as well as future-focused audit models are likely to feature assurance, advisory capability, technological ability and strategy-realness (Jokipii & Rautiainen, 2024).

The empirical data reveal that internal audit continues to be at the center of fraud prevention and detection in case of good governance provisions and technology-intensive audit methods (Bonrath & Eulerich, 2024). Simultaneously, audit-industry studies indicate that technological innovation is no longer margins to audit practice; on the contrary, it is producing changes in audit working processes, audit skill demands, and the structure of audit work characterized by complexity, digital transformation and heightened accountability (Fiolleau, MacTavish, Osecki & Thorne, 2024; MacTavish, Fiolleau, Osecki & Thorne, 2026). The changing environment offers a robust ground upon which analysis of role played by audit related capabilities in influencing organizational performance in an industry like the UK retail can be conducted. In this context, internal control systems are initial point of focus of current research. Organizational reliability is built on internal control systems as they design authorization, surveillance, risk reduction, asset protection and integrity of reporting procedures. The available evidence in recent times indicates that higher quality of control is related to better reporting & reduced opportunistic manipulation.

Indicatively, Boulhaga, Bouri and Elbardan (2022) show that the quality financial statements of internal control can enhance the reliability of such financial statements because quality limits the management of accrual-based earnings. Embracing more recent evidence also suggests that audit quality and disciplining managerial behavior in more complicated financial settings can be better by internal control systems (Chen & Chen, 2024; Liu, Liu & Wei, 2025). Conceptually, then, internal control systems continue to be the fundamental organizational process by which companies stabilize performance, minimize the risk of informational risk as well as enhance accountability. Audit technology is the second independent variable. According to the latest literature, audit technology cannot be considered as a narrow approach to software adoption, but as a more fundamental change in manner in which the audit evidence is created, perceived, and used. Research in major accounting publications provides the evidence that the scope, speed, and sophistication of audit work are changing due to advent of data analytics, digital audit tools & other technological solutions (Fiolleau et al., 2024; Wagener, Eulerich & Bonrath, 2025).

There is also emerging data that correlates increased levels of the audit-data-analytics maturity with better operational performance with concomitant work demonstrating that adoption of

technology is becoming an increasing influence on expectations on auditors even on the entry-level and staff-level of the profession (MacTavish et al., 2026; Wu & Huang, 2025). In the case of firms in the retail industry, whose volumes of data are significant, whose risk changes fast, and decisions affecting operations are time-sensitive, audit technology is thus likely to exert a significant impact on control effectiveness and organizational performance. However, systems and tools do not entirely describe audit effectiveness. The suggested mediating variable in the current research is audit expertise which in this case refers to expertise of a professional, the judgment, the sense of industry, and analytical skills with help of which auditors can process the evidence and turn procedures into the form of significant assurance. The importance of the ability of the auditors has been stressed in recent research as a key element of the modern audit arrangements.

Vitalis, Boritz and Simeoni (2024) define a rather wide set of competencies that are required to work as an internal auditor, Sawaya, Maalouf, Hanoun and Rakwi (2025) demonstrate that the auditor skills are positively correlated with the quality of financial reporting. It is also implied by related literature on the adoption of data analytics that the effects of digital tools are more effective where auditors have support, competence, and professional capacity to utilize them appropriately (Bogdani, Causholli & Rakipi, 2025; MacTavish et al., 2026). Therefore, audit expertise will be theoretically well-placed as a mediation process via which control systems and audit technologies are converted into the improved organizational performance. Business performance is dependent variable of the given study that is conceptualized in a governance-oriented manner so that it would not only cover financial and operational performance but also transparency and reliability of organizational reporting. This framing is aligned with the recent research that shows that quality of internal control, quality of audit, and internal audit efficacy be regarded as linked with higher quality reporting levels, greater organizational resiliency, & enhanced performance-related outcome (Boulhaga et al., 2022; Gyamerah et al., 2024; Liu et al., 2025).

In retail organizations where margins are frequently thin and operational misstatements can be easily propagated through inventory, sales and reporting systems, business performance is strongly correlated with internal information credibility & success of assurance arrangements (Bogdani, Causholli & Rakipi, 2025). Though these advances have been made, there is still a big gap in the literature. Despite recent research findings of increased role of technology in audit work and the increasing competency pressure upon an auditor, fewer studies combine these strands into a comprehensive explanatory framework that investigates the alleged mediating role of audit expertise in understanding effect of reliability of financial reporting, compliance with laws, regulations internal control system and audit technology on business performance (Jokipii & Rautiainen, 2024; Wagener et al., 2025; Wu & Huang, 2025). This inference coincides with current regulatory and professional interest thereby creating a stable foundation for the improved organizational performance in enhancing audit quality and with academic findings that future of auditing lies in a more advanced relationship between technological complexity together with the human judgement (FRC, 2025; Bonrath & Eulerich, 2024; MacTavish et al., 2026).

## **LITRATURE REVIEW**

The internal control systems are highly considered as one of the foundations of organizational governance and this has been of great importance in financial integrity, operational efficiency, and regulation. Modern studies focus on the fact that robust internal control systems minimize information asymmetry and limit the opportunistic behaviour of managers. As an example, the study of the internal control and earnings management done by [Boulhaga et al. \(2022\)](#) revealed that the quality of internal control is a significant factor that decreases real and accrual-based earnings management and therefore enhances the reliability of financial reporting. Likewise, a research by [Chen and Chen \(2024\)](#) on internal control audit proved that a mandatory internal control audit makes the corporation more disciplined and minimizes financial practices that lack efficiency. The evidence that is more recent confirms the positive correlation between the internal control systems and organizational results. The research carried out by [Liu et al. \(2025\)](#) on digital finance and audit quality points out that an effective internal control, in combination with digital financial systems, substantially enhances the quality and transparency of the audit process.

Also, study of internal control and performance by [Gyamerah et al. \(2024\)](#) demonstrates that the use of internal control mechanisms has a positive impact on the performance of the firms, especially when they are accompanied by information technology. Such results indicate that besides protection of organizational assets the internal control systems also play a direct role in enhanced business performance and transparency. In recent years, the role of audit technology has been given more attention owing to the rapid digital transformation in all fields. The data analytics, artificial intelligence, and automation are some of audit technology that improves the efficiency, scope, and quality of auditing services. In the case of the study conducted by [Fioleau et al. \(2024\)](#) on topic of technological innovation within auditing field, technological innovations are transforming the nature of audit practices and making auditors work more efficiently with the large datasets and anomalies detection. This has transformed auditing as a form of a retrospective one to a more proactive and constant monitor role. Empirical research also shows that the performance of an organization is largely influenced by the use of the audit technology.

The current research is both theoretical and practical. In theory, it adds to literature on audit and governance by combining organizational controls, audit technology and auditor capability into one model and removing the disjointed explanations of audit effectiveness. The research on internal audit technology by [Wagener et al. \(2025\)](#) show that adoption of technology-driven analytics can boost the efficiency of audit and accuracy of decisions made. In a similar manner, [Wu and Huang \(2025\)](#) research about audit data analytics maturity revealed that organizations whose audit analytics maturity are high have better operational performance and financial performance. [MacTavish et al. \(2026\)](#) research on technology in auditing draws attention to the fact that technology competence is emerging as basic need among auditors because it increases the capability of such professionals to provide quality audit services. All these findings lead to the conclusion that the audit technology is one of the fundamental drivers of better business performance and transparency in contemporary organizations. Much of recent evidence has

investigated internal controls, audit technology or auditor competence individually, and most existing studies have not explored mechanism connecting audit infrastructure & organizational results.

Internal control systems and audit technology are very necessary but their quality will greatly rely on the expertise of the audit professionals. Audit expertise is defined as knowledge, skills, experience, and professional judgment that are used by auditors in their work. Due to recent literature the competence of auditors is an essential factor in determining the quality of audit and performance of organization. Vitalis et al. (2024) research on internal audit competencies adds to the list of identified internal audit competencies, such as analytical skills, technological skills, and the ability to assess risk. Moreover, Sawaya et al. (2025) concerning the importance of auditor expertise and quality of reporting discovered that auditor expertise has a significant beneficial effect on financial reporting quality and that it minimizes the number of errors and misstatements. Equally, the research conducted by Bogdani et al. (2025) on the performance of internal auditors indicates that an auditor that possesses a high level of technical and analytical abilities can easily be able to utilize audit technologies and improve the quality of outcomes of the audit. These results show that concept of audit expertise is a mediating factor in enhancing the relationship between audit practices (technology and internal controls) and the business performance.

There is a lot of evidence on the effects of individual variables of internal control system, audit technology and audit expertise in existing literature but there is no research that incorporates the three variables into a single framework. The majority of the studies have investigated these factors individually, not taking into account role of audit expertise in mediating relationship between control systems, technology and organizational performance. What is more, empirical studies on the UK retail sector in particular are rather few, even though this industry is highly digitalized and complicated in terms of functioning. The recent research has recommended a fragmented approach to comprehension of audit effectiveness, especially in the environment of technological change, improve decision-making processes, ultimately leading to enhanced business performance (Jokipii & Rautiainen, 2024; Wagener et al., 2025). The current study fills this gap by considering the joint effect of internal control systems and audit technology on the performance of the business, as well as audit expertise is used as mediating variable. In such a way, it will add to academic literature & practical knowledge of audit efficiency in modern retail organizations.

## RESEARCH METHODOLOGY

The proposed research takes a quantitative research design to investigate how internal control systems and audit technology can influence business performance and mediating variable is audit expertise. The research design is based on cross-sectional, since the data are gathered at one point of time to get a picture of how respondents in retail sector in United Kingdom view it. It is assumed that quantitative design can be used due to possibility of statistical testing of relationships amid variables and obtaining generalizable results based on structured dataset (Creswell & Creswell, 2023; Saunders et al., 2023). The primary data are obtained structured

questionnaire which is designed considering other validated measurement scales in literature. The questionnaire is categorized into internal systems, audit technology, audit expertise, and business performance. All questions are rated on a five-point Likert scale between 1 (strongly disagree) and 5 (strongly agree), in industry review instrument to verify content validity and clarity.

A small-scale pilot study is carried out among a limited number of respondents (  $n = 30$  ) to revise the questionnaire and determine its reliability before the full-scale data collection. The study target population comprises of employees in retail organization in the United Kingdom, audit professionals, finance staff and managerial personnel. The sample is selected using the non-probability convenience sampling method because of the lack of accessibility and time and is indicative of previous research in the field of management and accounting studies (Saunders et al., 2023). Thus, all 300 responses are gathered and filtered in terms of completeness and consistency and then analyzed. The sample size is deemed acceptable to do statistical analysis and mediation testing especially in structural equation modeling settings (Hair et al., 2022). To test the statistics, research used statistical methods and programmes like SPSS and SmartPLS. Preliminarily, descriptive statistics are produced to present the demographic description of the respondents.

The Cronbach alpha, composite reliability and average variance extracted (AVE) are used in measuring reliability and validity of the constructs. The correlation analysis is performed to study the correlation between the variables. Structural equation modeling (SEM) is used to test the hypothesized relationships and mediating effects because, with its help, it is possible to analyze several relationships at once and get strong estimates of indirect effects (Hair et al., 2022). Audit expertise mediation effect is analyzed through the bootstrapping method in order to find out the importance of indirect paths. The ethical issues are also thought of in the course of the research. Participants should be participants of their own free will and respondents should be assured confidentiality and anonymity. The personal identifiable information is not gathered and data utilized is purely academic. All the participants are provided with informed consent before data collection, in order to ensure compliance with the ethical standards of research.

### RESULTS OF STUDY

Firstly, descriptive statistics were calculated with the help of SPSS to show the overall features of the data. The findings showed that the mean scores of all the constructs were in the range of 3.70 to 3.95 which indicated that respondents, on the whole agreed that their organizations had good internal control systems, audit technology and audit expertise. The values of standard deviation were less than 1, which means that there were no major dispersion and inconsistency in responses. Thus, to evaluate the measurement model, SmartPLS was used to evaluate its reliability and validity. The alpha value of all the constructs was more than the recommended alpha of 0.70, which indicates internal consistency. In the same way, the composite reliability (CR) scores differed between 0.87 and 0.92, which represents a high level of the construct reliability.

**Table 1**  
*Reliability and Convergent Validity*

Construct	Cronbach's Alpha	Composite Reliability	AVE
Internal Control Systems	0.88	0.91	0.63
Audit Technology	0.86	0.90	0.60
Audit Expertise	0.90	0.92	0.65
Business Performance	0.87	0.91	0.62

The AVE was used to measure convergent validity and all measures exceeded criterion of 0.50 which proved that the constructs captured a reasonable percentage of variance in measures. Findings affirm that constructs are reliable and convergent enough (Hair et al., 2022). The Fornell-Larcker criterion was used to determine discriminant validity. The square root of AVE of each construct had stronger correlations with the constructs, proving fact that constructs are different.

**Table 2**  
*Discriminant Validity (Fornell-Larcker Criterion)*

Construct	ICS	AT	AE	BP
ICS	0.79			
AT	0.54	0.77		
AE	0.61	0.58	0.81	
BP	0.63	0.59	0.66	0.79

The SmartPLS was then used to evaluate structural model. The path coefficients and t-values and p-values were calculated using bootstrapping with 5,000 resamples. The findings show that the positive influence of internal control systems on business is rather significant (b = 0.32, p < 0.001), which confirms H1. On same note, H2 is also supported as positive effect of audit technology on business performance is significant (b = 0.28, p less than 0.001). Moreover, H3 and H4 are supported because internal control systems and audit technology are significant in influencing the audit expertise (b = 0.41, p < 0.001 and b = 0.36, p < 0.001). In its turn, audit expertise produces positive impact on business performance (b = 0.38, p < 0.001), which proves H5.

**Table 3**  
*Structural Model Results*

Hypothesis	Path	Beta ( $\beta$ )	t-value	p-value	Decision
H1	ICS → BP	0.32	5.87	0.000	Supported
H2	AT → BP	0.28	5.12	0.000	Supported
H3	ICS → AE	0.41	7.34	0.000	Supported
H4	AT → AE	0.36	6.45	0.000	Supported
H5	AE → BP	0.38	6.98	0.000	Supported

The values of the coefficient of determination (R2) shows that internal control system and audit technology (R2 = 0.52) are ineffectual in explaining budgetary performance in terms of audit

expertise ( $R^2 = 0.52$ ), whereas entire predictors ( $R^2 = 0.61$ ) are effective in explaining budgetary performance.

**Table 4***Coefficient of Determination ( $R^2$ )*

Construct	$R^2$
Audit Expertise	0.52
Business Performance	0.61

To test the indirect effects, the bootstrapping method of the SmartPLS was used to perform the mediation analysis. The findings indicate that audit expertise plays a significant mediating role in terms of internal control systems and business performance ( $b = 0.16$ ,  $p < 0.001$ ), and in terms of internal control systems and audit technology and business performance ( $b = 0.14$ ,  $p < 0.001$ ).

**Table 5***Mediation Results*

Path	Indirect Effect	t-value	p-value	Mediation Type
ICS → AE → BP	0.16	4.95	0.000	Partial Mediation
AT → AE → BP	0.14	4.38	0.000	Partial Mediation

The findings show that there is both partial mediation and direct and indirect are significant. This implies that internal control systems, audit technology do not only have a direct impact on business performance but also indirectly by increase in the business performance with help of audit expertise. The results prove that suggested model is statistically significant and sound. The internal control system and audit technology are essential in enhancing the performance of business, whereas audit expertise enhances these associations, its significance as a mediating mechanism.

## DISCUSSION

The results of this research are good empirical evidence of the suggested relationships between internal control systems, audit technology, audit expertise, business performance in UK retail sector. The results show that internal control systems make positive difference on the business performance that is relatively strong and is in line with previous studies that have put across standing of control mechanisms in improving quality of financial reporting and effectiveness of the organizations. This observation is consistent with [Boulhaga et al. \(2022\)](#), who established that quality internal controls have a negative impact on earnings management and enhances financial transparency. In a similar study, [Chen and Chen \(2024\)](#) have concluded that internal control audits contribute to corporate discipline and reduce inefficient financial practices. The performance of internal controls seems to be decisive factor in performance and governmental results of the UK retail organizations, in which volume of transactions and the complexity of operations are considerable. The paper also indicates that audit technology has a strong impact

on performance of business, backs to progress of existing literature on digital transformation in auditing.

This result is congruent with findings presented by [Fiolleau et al. \(2024\)](#), as they underscored that technological innovations enhance the efficiency of audit and allow detecting anomalies in a better way. [Wagener et al. \(2025\)](#) discovered that analytics are improved by technology and aid the audit processes and decision-making abilities. These findings are extended with the findings of this study since audit technology does not only enhance the quality of audit but also has a direct effect on organizational performance. This is especially true in the UK retail market where the use of data analytics and automation is becoming more and more required to operate in high volumes and high dynamism of market. One of the contributions of this study is the discovery that audit expertise is an important mediating variable. The findings reveal that good internal control system, audit technology positively impact audit expertise, which consequently increases the performance of the business. Such a result is backed by [Vitalis et al. \(2024\)](#), who stated that professional competencies play a crucial role in the internal audit, and [Sawaya et al. \(2025\)](#), who discovered that auditor expertise enhances the quality of financial reporting.

Besides, the effectiveness of audit technology, as revealed by [Bogdani et al. \(2025\)](#), depends on the skills and capabilities of auditors. The mediation findings in this study validate that the audit expertise is an instrument that organizational systems and technologies are turned into better performance results. Notably, the mediation analysis indicates that the internal control systems and the audit technology indirectly and directly affect the business performance. This result qualifies the hypothesis that the effectiveness of auditing is not only related to structural and technological causes but on human capital. It supports the view of [Jokipii and Rautiainen \(2024\)](#) who believe that the next phase of the auditor profession is the combination of digital abilities with the use of the expert judgment and experience. Moreover, the R2 values obtained during current study are relatively high, which means that this model can be used to explain a significant percentage of variation in business performance, which proves mutual significance of the internal controls, technology and expertise as required for realizing different outcomes. The findings add to the literature as they offer an integrated framework that brings both the technology and human aspects of audit effectiveness together has not been covered in the past studies.

## CONCLUSION

The purpose of study was to investigate how the internal control systems and audit technology can influence business performance in the context of UK retail sector where the audit expertise was a mediating variable. The results affirm the fact that internal control systems and audit technology are influential in the positive impact on business performance and this shows that are critical in terms of boosting efficiency, transparency and governance in organizations. The research determines that expertise in auditing is a crucial mediating factor that enhances such relationships. Results indicate that although companies can consider investing in development of modern control systems, audit technologies, availability of qualified and competent audit

professionals is key to ensuring best use of them. Audit expertise improves interpretation of audit data, decision making process and aspects on which audit processes are appropriately executed.

This is to imply that, as much as systems and technologies play their own, independent role in influencing performance, performance is greatly maximized when coupled with experienced audit professionals. Theoretically, the research study adds to the available body of knowledge by incorporating internal control system, audit technology and audit expertise to a single framework. It builds on previous studies by proving the mediating effects of human skill in the correlation between audit practices and business performance. As far as practical implications are concerned, the findings have significant implications to retail organizations in the United Kingdom. THE Managers and policymakers should not just pay their attention to enhancing internal controls as well as using modern audit technologies, but also invest in training and development of audit professionals. In general, authors of the study reach the conclusion that sustainable business performance requires a balanced approach that includes such elements as robust control systems, modern technology, and professionalism. The model can be expanded in future studies that may explore other variables like organizational culture, risk management practices, or external audit quality, and use the framework in other sectors or geographical settings.

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