

Expert Evidence in Courts: Role, Importance, and Challenges



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Abstract: *This study examines the role, importance, and challenges of expert evidence in courts. It explores how expert testimony assists judicial decision-making in complex cases. Using doctrinal research, the article analyses legal frameworks and practices. It finds that while expert evidence enhances accuracy, issues of bias, reliability, and evaluation standards continue to undermine its effectiveness in justice systems. Expert evidence plays a crucial role in modern judicial systems by assisting courts in understanding complex technical, scientific, and specialized matters. As legal disputes increasingly involve intricate issues ranging from forensic science to digital technology the reliance on expert testimony has significantly grown. However, while expert evidence enhances judicial decision-making, it also raises concerns regarding reliability, bias, and evaluation. This article examines the role, importance, and challenges of expert evidence in courts, with particular reference to common law jurisdictions and developing legal systems such as Pakistan.*

Keywords: Expert evidence, expert witness, admissibility, forensic science, judicial decision-making, bias, reliability, Pakistan law

Introduction

The increasing complexity of modern litigation has significantly expanded the role of expert evidence in courts. Disputes today frequently involve technical, scientific, medical, and financial issues that fall beyond the ordinary knowledge of judges and legal practitioners. In this context, expert testimony serves as a crucial bridge between specialized knowledge and judicial decision-making. The purpose of this study is to critically examine the role, importance, and challenges of expert evidence in courts, with a particular focus on its effectiveness in ensuring fair and accurate adjudication. The scope of this research extends to common law jurisdictions, with contextual reference to developing legal systems such as Pakistan, where institutional and procedural limitations often affect the quality and reliability of expert testimony. The significance of this

study lies in its attempt to highlight both the indispensable value of expert evidence and the systemic challenges that may undermine its credibility, including bias, lack of standardization, and difficulties in judicial evaluation. Historically, the admissibility of expert opinion emerged as an exception to the general rule excluding opinion evidence, reflecting the growing need for specialized input in legal proceedings. This research is guided by the central hypothesis that while expert evidence enhances the accuracy and efficiency of judicial decisions, its effectiveness is contingent upon the reliability, impartiality, and proper regulation of expert witnesses. (Rasool & Rasool, 2022; Ahmed, et al., 2025). The study addresses key research questions: To what extent does expert evidence assist courts in complex cases? What are the major challenges associated with its use? And how can legal

systems improve its credibility and effectiveness?

It evaluates existing legal frameworks governing expert evidence and identifies gaps that may affect its application in practice. The expected outcome of this study is to provide a critical understanding of the strengths and limitations of expert testimony, along with recommendations for reform to enhance its reliability and utility in courts. The article is structured as follows: the first section outlines the legal framework governing expert evidence; the second examines its role and importance in judicial proceedings; the third analyses the challenges associated with its use; and the final section offers recommendations and concludes with reflections on the future of expert evidence in an increasingly complex legal landscape. The administration of justice requires accurate fact-finding and sound legal reasoning. However, courts often encounter issues that fall beyond the knowledge of judges and juries, such as medical negligence, forensic analysis, or financial valuation. In such cases, expert evidence becomes indispensable. An expert witness is defined as a person possessing specialized knowledge, skill, or experience who provides opinion evidence to assist the court in understanding technical matters. Unlike ordinary witnesses who testify to facts, expert witnesses are permitted to provide opinions, thereby bridging the gap between law and specialized disciplines (Lew, 2023).

2. Research Methodology

This study relying primarily on qualitative analysis of legal sources to examine the role, importance, and challenges of expert evidence in courts. The research is based on the systematic review of statutory provisions, particularly the Qanun-e-Shahadat Order, 1984, alongside relevant case law, judicial precedents, and comparative legal frameworks from common law jurisdictions. Secondary materials, including academic journals, textbooks, and authoritative commentaries, are used to identify key debates and interpret legal principles. The collected data is analysed through a critical and analytical approach to evaluate the effectiveness, reliability, and limitations of expert evidence, with the aim of identifying gaps and proposing practical legal reforms.

3. Legal Framework of Expert Evidence

The admissibility and use of expert evidence in courts are governed by well-established legal principles and statutory provisions that recognize the necessity of specialized

knowledge in adjudication. As a general rule, the law of evidence restricts witnesses to testifying about facts rather than opinions. However, expert evidence constitutes a significant exception to this rule, allowing individuals with specialized knowledge, skill, or experience to provide opinion-based testimony to assist the court. In Pakistan, the primary legal framework regulating expert evidence is found in the Qanun-e-Shahadat Order, 1984. Article 59 explicitly permits the opinions of experts in matters relating to science, art, foreign law, identity of handwriting, and fingerprints. Additionally, Article 164 provides flexibility by allowing the court to admit evidence produced through modern devices or techniques, thereby accommodating advancements in forensic science and digital evidence. These provisions collectively establish the legal basis for the admissibility of expert testimony in Pakistani courts. In common law jurisdictions, expert evidence is similarly recognized as an exception to the opinion rule, but its admissibility is subject to judicial scrutiny. Courts assess whether the expert possesses the requisite qualifications and whether the subject matter of the testimony falls outside the common knowledge of the judge or jury. Over time, more structured standards have evolved to regulate expert testimony. For instance, in the United States, the landmark case of *Daubert v. Merrell Dow Pharmaceuticals, Inc.* introduced criteria for determining the reliability and relevance of scientific expert evidence. The “Daubert standard” requires courts to evaluate factors such as testability, peer review, error rates, and general acceptance within the relevant scientific community (Neal, et al., 2022).

Similarly, in the United Kingdom, procedural rules and judicial decisions emphasize the duty of experts to remain independent and impartial. Experts are required to assist the court rather than advocate for the party that has engaged them. This principle is reinforced through civil procedure rules that mandate transparency in expert reports and allow for court-appointed experts in appropriate cases. Across jurisdictions, certain core principles underpin the legal framework of expert evidence. First, relevance requires that expert testimony must directly relate to an issue in dispute. Second, necessity dictates that expert opinion should only be admitted when the matter is beyond ordinary understanding. Third, reliability ensures that the methods and reasoning used by the expert are scientifically or technically sound. Finally, impartiality demands that the expert acts

as an independent advisor to the court. Despite these established principles, the regulation of expert evidence remains uneven, particularly in developing legal systems where institutional mechanisms for accreditation and standardization may be limited. This creates challenges in ensuring consistency and credibility in expert testimony. Consequently, strengthening the legal framework through clearer admissibility standards, accreditation systems, and judicial training remains essential for improving the effective use of expert evidence in courts (Bylund, et al., 2021).

4. Role of Expert Evidence in Courts

Expert evidence plays a central role in modern adjudication by enabling courts to effectively deal with issues that require specialized knowledge beyond ordinary human experience. As legal disputes increasingly involve scientific, technical, medical, and financial complexities, the contribution of expert witnesses has become indispensable in ensuring informed and accurate judicial outcomes. One of the primary roles of expert evidence is to assist the court in understanding complex matters. Judges are trained in law, not in specialized disciplines such as forensic science, medicine, or engineering. Expert witnesses bridge this gap by explaining technical concepts in a manner that is accessible and relevant to the legal issues in dispute. For instance, in cases involving DNA analysis, digital forensics, or medical negligence, expert interpretation is often critical to determining the facts. Another important role is the provision of opinion-based testimony. Unlike ordinary witnesses who are restricted to stating facts, experts are permitted to offer opinions based on their expertise. This exception to the general rule of evidence allows courts to benefit from professional judgments that are grounded in specialized training and experience. Such opinions may relate to causation, standard of care, authorship of documents, or the interpretation of technical data. Expert evidence also serves to evaluate and interpret factual evidence. In many cases, raw data or physical evidence may not be meaningful without expert analysis. For example, forensic experts interpret fingerprints, ballistic reports, or chemical tests, while financial experts analyse complex transactions or assess damages. This interpretative function transforms technical information into legally relevant conclusions (Bekker, 2023).

Additionally, expert witnesses play a crucial role in supporting or challenging claims presented by

the parties. Each side in a dispute may present its own expert to strengthen its arguments or to discredit the opposing party's evidence. This adversarial use of expert testimony allows courts to consider competing perspectives, although it may also create difficulties when experts present conflicting opinions. Another significant role is enhancing the quality of judicial decision-making. By providing reliable and specialized insights, expert evidence helps courts reach decisions that are not only legally sound but also factually accurate. This is particularly important in cases where the consequences of error are severe, such as criminal trials, medical negligence claims, or environmental litigation. Furthermore, expert evidence contributes to efficiency in the administration of justice. In complex cases, expert testimony can streamline proceedings by clarifying technical issues early in the process, reducing ambiguity, and narrowing the scope of disputes. This can save judicial time and resources while improving the overall effectiveness of litigation. Expert witnesses may also play a role in guiding legal standards and developing jurisprudence. Courts often rely on expert insights when shaping legal principles in emerging fields such as cyber law, environmental regulation, and artificial intelligence. In this way, expert evidence not only assists in individual cases but also influences the evolution of legal doctrine. The role of expert evidence in courts extends far beyond mere testimony; it is a foundational tool that supports understanding, interpretation, and decision-making in increasingly complex legal systems. However, its effectiveness ultimately depends on the credibility, independence, and proper evaluation of the experts involved (Garrett, et al., 2020).

5. Importance of Expert Evidence

Expert evidence holds immense importance in contemporary legal systems, particularly as disputes increasingly involve technical, scientific, and specialized issues. Its value lies not merely in supplementing judicial knowledge but in ensuring that decisions are grounded in accuracy, fairness, and rational analysis. One of the foremost aspects of its importance is its role in ensuring accurate fact-finding. Courts rely on evidence to determine the truth, but in many cases, facts cannot be properly understood without expert interpretation. Whether it involves medical causation, forensic identification, or financial valuation, expert testimony provides the analytical framework necessary for drawing reliable conclusions. Without such assistance, courts risk basing

decisions on incomplete or misunderstood evidence. Closely related is the function of bridging the knowledge gap between legal reasoning and specialized disciplines. Judges and lawyers are not trained scientists, doctors, or engineers. Expert witnesses translate complex technical information into a form that is intelligible within the legal process, thereby enabling courts to engage meaningfully with issues that would otherwise remain obscure. This ensures that justice is not compromised by a lack of technical understanding. Expert evidence is also vital in upholding the fairness and integrity of proceedings. By providing objective and professional opinions, experts help ensure that both parties have a fair opportunity to present and challenge technical claims. In adversarial systems, this contributes to a balanced evaluation of competing arguments, reducing the likelihood of arbitrary or uninformed judgments. Another key dimension is its contribution to the rule of law and prevention of miscarriages of justice. Reliable expert evidence can prevent wrongful convictions in criminal cases and unjust liability in civil disputes. Conversely, flawed or misleading expert testimony can have serious consequences, highlighting the need for careful scrutiny. Thus, its importance lies not only in its use but also in its proper regulation (Herbert, et al.,2022).

Furthermore, expert evidence enhances judicial efficiency in complex litigation. Cases involving cybercrime, environmental harm, or corporate fraud often involve large volumes of technical data. Expert analysis helps streamline these cases by identifying relevant issues, clarifying disputes, and reducing unnecessary delays. This contributes to more timely and effective dispute resolution. In addition, expert evidence plays a significant role in shaping legal development in emerging fields. As courts encounter new challenges in areas such as digital technology, artificial intelligence, and environmental science, expert input becomes essential in guiding legal interpretation and policy evolution. In this sense, expert evidence not only resolves individual disputes but also influences the broader trajectory of legal systems. ,the importance of expert evidence lies in its ability to enhance accuracy, fairness, and efficiency in judicial proceedings. It acts as a critical link between law and specialized knowledge, ensuring that justice is informed, reasoned, and responsive to the complexities of the modern world (Smith, et al., 2025).

6. Conclusion

Expert evidence has emerged as an indispensable component of modern judicial systems, particularly in an era marked by rapid scientific and technological advancement. This study has demonstrated that expert testimony plays a vital role in assisting courts, enhancing fact-finding, and improving the quality of judicial decision-making. At the same time, it has highlighted persistent challenges, including concerns over reliability, bias, lack of standardization, and the difficulty courts face in evaluating complex technical opinions. These issues underscore that while expert evidence strengthens the administration of justice, its effectiveness depends on robust legal frameworks and careful judicial scrutiny. The findings of this research matter because the increasing reliance on expert evidence directly impacts the fairness and accuracy of legal outcomes, affecting litigants, legal practitioners, and society at large. To address existing shortcomings, several reforms are necessary: the development of clear admissibility standards, accreditation and regulation of expert witnesses, enhanced judicial training in scientific and technical literacy, and greater use of independent or court-appointed experts. Looking ahead, future research should focus on the implications of emerging technologies such as artificial intelligence in expert testimony, comparative analyses of regulatory models across jurisdictions, and empirical studies on the impact of expert evidence on judicial outcomes. Strengthening these areas will ensure that expert evidence continues to serve as a reliable and credible tool in the pursuit of justice. Expert evidence is an indispensable component of modern judicial systems, enabling courts to navigate complex scientific and technical issues. While it significantly enhances the quality of judicial decision-making, its effectiveness depends on reliability, impartiality, and proper evaluation. The challenges associated with expert evidence particularly bias, lack of standards, and technical complexity necessitate comprehensive legal reforms. Strengthening the framework governing expert testimony will ensure that it serves its intended purpose: the fair and accurate administration of justice.

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