International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

The Role of Big Data Analytics in Curbing Financial Crimes in Zimbabwe's Public Sector

Shellyne Dandazara[1], David Chisunga[2]

[1]Student, Forensic Accounting and Auditing, Harare Institute of Technology
[2]Lecturer, Forensic Accounting and Auditing, Harare Institute of Technology

ABSTRACT

Financial crimes such as corruption, procurement fraud, and embezzlement continue to undermine Zimbabwe's public sector, eroding economic stability and public trust. Traditional auditing methods have proven inadequate in detecting and preventing sophisticated financial irregularities. This study explores the transformative potential of Big Data Analytics (BDA) in enhancing transparency, accountability, and fraud detection within Zimbabwe's public institutions. Using a qualitative desk research methodology combined with a multiple case study approach, the study draws on secondary data from government reports (2021–2025), academic literature, and international agency briefs. Findings indicate that BDA can revolutionize forensic investigations, risk detection, and compliance monitoring through applications like anomaly detection and predictive modelling. However, challenges such as data fragmentation, skill deficits, and infrastructure gaps hinder implementation. This paper proposes actionable policy reforms, capacity building initiatives, and technological investments to integrate BDA effectively, offering insights for policymakers to foster data-driven governance in Zimbabwe.

Keywords: Big Data Analytics, Financial Crime, Public Sector, Zimbabwe, Forensic Accounting, Corruption

1. INTRODUCTION

Zimbabwe's public sector faces persistent financial irregularities, with recent Auditor General reports documenting rampant embezzlement, ghost workers, misallocation of funds, and contract manipulation (Auditor General of Zimbabwe, 2022; 2023). The 2023 report alone flagged over ZWL$21 billion in unsupported expenditures and irregular procurements, highlighting the scale of the challenge (Auditor General of Zimbabwe, 2023). These crimes not only drain public resources but also exacerbate economic instability in a country already grappling with hyperinflation and currency crises. Traditional auditing tools and reactive forensic investigations are ill-equipped to address the complexity of modern financial crimes, which exploit weaknesses in manual and legacy systems.

Big Data Analytics (BDA), defined as the process of analysing vast datasets to uncover patterns, trends, and anomalies, has emerged as a powerful tool in global financial governance (OECD, 2021). Through enabling real-time data processing and predictive insights, BDA offers a proactive approach to fraud detection and prevention. This paper examines the potential of BDA to curb financial crimes in Zimbabwe's public sector, addressing the following research question: How can BDA be leveraged to enhance transparency and accountability in Zimbabwe's public financial management? The study also examines implementation challenges and proposes strategic interventions to bridge existing gaps.

2. LITERATURE REVIEW

2.1 Big Data Analytics in Public Sector Governance

Big Data Analytics (BDA) is transforming public sector governance by improving decision-making, service delivery, and accountability. Governments generate vast data from financial transactions, public services, procurement, and records. When effectively used, BDA offers actionable insights that boost efficiency and transparency (Kitchin & Lauriault, 2022).

A key benefit is evidence-based policymaking, where real-time analysis of social, economic, and environmental data enables proactive decisions, such as forecasting public health needs or budget pressures (Munyoro & Zhou, 2023). This shifts governance from reactive to strategic. BDA also enhances accountability. Open data platforms and analytical tools allow citizens and watchdogs to monitor spending, project implementation, and service delivery. In countries like Zimbabwe, this can help restore trust in public institutions and improve audit effectiveness (Maposa & Duri, 2024).

Operationally, BDA improves efficiency by identifying bottlenecks, reducing waste, and optimizing resource use, vital in resource-constrained settings (Chikohomero & Mudzonga, 2021). However, success depends on data infrastructure, skills, and regulation. Data privacy, cybersecurity, and ethical use are critical to maintaining public trust and realizing BDA's full benefits (Kitchin & Lauriault, 2022). In summary, BDA offers a powerful tool for transparent, responsive, and efficient public governance.

2.2 Financial Crimes in Zimbabwe's Public Sector

Financial crimes in Zimbabwe's public sector such as embezzlement, procurement fraud, ghost workers, and misuse of public funds, have eroded trust, weakened service delivery, and harmed economic stability. These issues stem from weak internal controls, limited transparency, and poor enforcement of anti-corruption laws (Munyoro & Zhou, 2023). Auditor-General reports consistently expose unauthorized spending, unsupported payments, and procurement violations across ministries and parastatals (Chikohomero & Mudzonga, 2021). Contracts are often awarded without due process, sometimes to politically connected entities, reflecting deep governance flaws. A key challenge is the lack of strong accountability mechanisms. Oversight bodies like ZACC and the Public Accounts Committee are under-resourced and often face political interference, which limits their effectiveness and protects high-profile offenders (Maposa & Duri, 2024).

Payroll fraud, particularly ghost workers, is prevalent in sectors like education and local government where oversight is weak (Nyikadzino & Mhlanga, 2022). Corruption in procurement inflates costs and undermines service delivery, straining already limited national resources. These crimes divert funds from vital sectors like health and infrastructure, deter investment, and fuel public distrust. To combat them, integrating Big Data Analytics into audit and oversight can enhance transparency, enable real-time monitoring, and support early fraud detection.

2.3 BDA in Forensic Accounting and Auditing

Big Data Analytics (BDA) is transforming forensic accounting and auditing by improving the speed and accuracy of detecting, investigating, and preventing financial crimes. Unlike traditional methods that rely on sampling, BDA allows for real-time analysis and examination of full data sets, enabling more effective fraud detection (Munyoro & Zhou, 2023).

In forensic accounting, BDA helps identify anomalies, patterns, and hidden relationships through tools like text mining, network analysis, and machine learning. These can uncover concealed transactions, conflicts of interest, and collusion, especially valuable in high-risk, corruption-prone sectors like Zimbabwe's public sector (Maposa & Duri, 2024). In auditing, BDA supports continuous auditing,

allowing real-time monitoring of financial processes and controls. This reduces detection lag and focuses resources on high-risk areas, improving audit efficiency and effectiveness (Chikohomero & Mudzonga, 2021). Predictive analytics further strengthens investigations by using historical data to score risk and direct attention to likely fraud areas, enabling targeted, resource-efficient interventions (Khumalo & Ndlovu, 2022). Data visualization tools, such as dashboards, enhance communication of findings, aiding transparency and helping decision-makers act swiftly (Mupfumira & Chirume, 2023).

Challenges such as data privacy, skills shortages, and infrastructure needs remain, but with proper policies and investment, BDA can significantly strengthen forensic and audit functions.

2.4 Leveraging Big Data Analytics in Curbing Financial Crimes

Big Data Analytics (BDA) is vital in curbing financial crimes by enabling real-time detection and analysis of transactions. In public sectors prone to corruption, BDA processes vast datasets to identify anomalies and suspicious trends, allowing early intervention (Kitchin & Lauriault, 2022).

BDA enhances transparency and accountability by integrating data across government agencies to trace fund movements, detect duplicate payments, and identify shell companies involved in procurement fraud. Visual dashboards provide real-time insights, improving audit speed and accuracy (Munyoro & Zhou, 2023). Predictive analytics helps forecast fraud risks based on historical patterns, enabling auditors to focus on high-risk departments and vendors, particularly useful for addressing systemic issues like payroll and procurement fraud in Zimbabwe (Chikohomero & Mudzonga, 2021). When combined with AI, BDA systems continuously refine detection models, reducing manual work and ensuring consistent, scalable oversight, critical in low-resource settings (Maposa & Duri, 2024).

In summary, BDA strengthens financial oversight by improving detection, enhancing predictive capabilities, and promoting accountability. Its strategic use can support Zimbabwe's reform efforts and rebuild trust in public finance.

2.5 Empirical Case Studies of Big Data Analytics in the Public Sector

a) IRS Fraud Detection – USA

The U.S. IRS uses predictive analytics to detect anomalous refund claims by integrating tax return and payment history data. This system has saved over $2 billion annually (IRS, 2021).

b) i-Tax & IFMIS Integration – Kenya

Kenya linked its i-Tax and IFMIS systems to analyze tax and procurement data. This integration improved revenue collection and flagged tax and procurement fraud (Mwangi & Oduor, 2021).

c) Smart Public Finance – Rwanda

Rwanda's finance ministry uses BDA to monitor budget execution and procurement. The system uncovered ghost workers and irregular contracts, recovering over RWF 5 billion (Ndayishimiye & Habimana, 2022).

d) Corruption Watch – South Africa

South Africa's Corruption Watch uses BDA and crowdsourced data to analyze procurement and audit records, exposing irregular tenders and aiding investigations into state capture (Moyo & Jansen, 2023).

e) e-TIP System – Zimbabwe

ZIMRA's e-TIP system integrates customs and border data to monitor transit goods, reducing smuggling and boosting revenue by 20% between 2020 and 2022 (Munyoro & Zhou, 2023).

2.6 Literature Gap

While global research highlights Big Data Analytics (BDA) as effective in detecting and preventing financial crimes, most studies focus on developed countries with strong technology and governance

systems. Evidence from North America, Europe, and parts of Asia shows BDA improves transparency and fraud detection through real-time data and predictive analytics. However, there is limited research on BDA's use in resource-constrained settings, especially in Sub-Saharan Africa (Munyoro & Zhou, 2023; Maposa & Duri, 2024).

In Zimbabwe, few empirical studies address practical challenges in adopting BDA for forensic accounting and public auditing. Problems like poor data quality, lack of system interoperability, limited technical skills, and institutional resistance to transparency are often overlooked but crucial for effective implementation (Chikohomero & Mudzonga, 2021). Additionally, socio-political barriers such as politicized oversight bodies, corruption culture, and restricted public data access further hinder BDA deployment. Without considering these factors, the literature offers only a partial view of BDA's potential. This study aims to fill this gap by exploring both opportunities and challenges of BDA within Zimbabwe's unique socio-economic and political context, providing insights on tailoring data-driven tools to strengthen financial accountability in developing countries.

2.7 Theoretical Framework

This study is grounded in a combined theoretical framework drawing from the Technology Acceptance Model (TAM) (Davis, 1989) and Institutional Theory (DiMaggio & Powell, 1983) to connect BDA adoption with decision-making processes in the public sector. TAM posits that perceived usefulness and ease of use influence technology adoption, which in this context translates to BDA's role in facilitating proactive decision-making, such as real-time fraud detection and evidence-based policymaking (e.g., forecasting budget risks as noted in Munyoro & Zhou, 2023). Institutional Theory complements this by explaining how external pressures (e.g., regulatory reforms and international standards) and internal norms (e.g., resistance to transparency) shape BDA integration, influencing public sector decisions toward greater accountability and efficiency (Kitchin & Lauriault, 2022).

This framework links BDA adoption to enhanced decision-making by emphasizing how analytics tools enable data-driven shifts from reactive auditing to strategic, preventive governance. For instance, in Zimbabwe's public sector, BDA can support decision-makers in identifying high-risk areas (e.g., procurement fraud) through predictive modelling, aligning with institutional reforms under the National Development Strategy 1 (NDS1). By integrating these theories, the study provides a robust lens for analyzing BDA's transformative potential while addressing adoption barriers in resource-constrained environments.

3. METHODOLOGY

This study adopts a qualitative desk research design combined with a multiple case study method to explore the role of BDA in curbing financial crimes in Zimbabwe's public sector. The research design is defined as an exploratory, interpretive approach that relies on secondary data analysis and comparative case examination to uncover patterns, challenges, and opportunities. Desk research involves systematic review and thematic analysis of existing documents, while the multiple case study method entails in-depth analysis of selected empirical cases (e.g., from Kenya, Rwanda, South Africa, and Zimbabwe) to provide contextualized insights.

This design is appropriate for the study objectives, which are exploratory in nature, aiming to understand BDA's potential applications, benefits, and implementation barriers in a developing country context without requiring primary data collection. Qualitative desk research allows for cost-effective, in-depth exploration of complex socio-political factors (e.g., corruption and institutional resistance) that

quantitative methods might overlook, while the case study component adds empirical richness by enabling cross-case comparisons and actionable recommendations (Yin, 2018). This hybrid approach is justified given Zimbabwe's resource constraints, where primary fieldwork may be logistically challenging, and it aligns with the need for contextual depth in anti-corruption studies.

Existing studies have successfully used similar methodologies in comparable research contexts. For instance, Mwangi & Oduor (2021) employed qualitative desk research and case study analysis to examine BDA integration in Kenya's i-Tax and IFMIS systems, yielding insights into fraud detection in Sub-Saharan African public finance. Similarly, Ndayishimiye & Habimana (2022) used a multiple case study approach with desk-based secondary data to evaluate BDA's impact on Rwanda's public finance, uncovering ghost workers and irregular contracts, mirroring the financial crime challenges in Zimbabwe. These references demonstrate the methodology's effectiveness in providing richer empirical evidence and practical findings in resource-limited African settings.

Data was sourced from recent publications, including Auditor General reports (2021–2025), peer-reviewed journals, and briefs from international development agencies like the World Bank and OECD. Thematic content analysis was employed to identify recurring themes at the intersection of BDA and financial crime prevention, focusing on applications, benefits, and implementation challenges. For the case studies, purposive selection criteria were applied (e.g., relevance to public sector fraud in Africa), and cross-case synthesis was used to draw generalizable insights. The qualitative approach provides in-depth contextual insights, though it is limited by the absence of primary data or quantitative metrics. To ensure credibility, only reputable and recent sources (2021–2025) were used, and findings were cross-verified across multiple documents. Ethical considerations, such as avoiding misrepresentation of data, were prioritized. Future research could complement this study with primary data from stakeholder interviews or quantitative analyses of BDA outcomes.

4. FINDINGS AND DISCUSSION

4.1 Limited Use of BDA in Zimbabwe's Public Financial Management

Despite Zimbabwe's commitment to digital transformation under the National Development Strategy 1 (NDS1), the adoption of BDA in public financial oversight remains negligible. The Auditor General's Office, a key oversight body, lacks integrated digital audit platforms and relies on retrospective analysis of manually compiled data (Auditor General of Zimbabwe, 2023). This reactive approach fails to detect sophisticated financial crimes in real time, perpetuating systemic inefficiencies.

4.2 Potential Applications of BDA in Curbing Financial Crimes

Big Data Analytics (BDA) offers powerful and transformative capabilities for combating financial crimes within Zimbabwe's public sector. A key application is anomaly detection, where real-time monitoring flags irregularities like double invoicing and payments to fictitious vendors (Abeysekera & Wickramasinghe, 2023). BDA also improves procurement monitoring by cross-referencing supplier and contract data to uncover bid rigging, collusion, and inflated prices (World Bank, 2022). Additionally, BDA enables predictive risk modelling using historical audit data to identify high-risk departments or projects for targeted oversight (Kariuki & Nyangweso, 2023). It also combats payroll fraud by integrating payroll systems with national ID databases to detect ghost workers and duplicate payments (Auditor General of Zimbabwe, 2022).

These applications shift public financial management from reactive auditing to proactive, data-driven fraud prevention, enhancing transparency and resource efficiency. Drawing from the multiple case study

analysis, Rwanda's Smart Public Finance system demonstrates how BDA can recover funds from ghost workers (Ndayishimiye & Habimana, 2022), offering actionable lessons for Zimbabwe's education sector. Similarly, Kenya's i-Tax integration highlights procurement fraud flagging (Mwangi & Oduor, 2021), which could be adapted to Zimbabwe's parastatals for real-time monitoring.

4.3 Challenges Hindering BDA Implementation in Zimbabwe

Although BDA holds great potential, its effective implementation in Zimbabwe's public sector is challenged by several obstacles. Data fragmentation remains a major issue, with departments operating in silos and lacking standardized data-sharing protocols, limiting cross-agency fraud detection (World Bank, 2022). There is also a critical skills shortage; a lack of data analysts, forensic accountants, and IT professionals' hampers BDA deployment and innovation (Nyoni, 2022). Infrastructure limitations, including high costs of digital tools and unreliable electricity and internet, further restrict real-time analytics (Chikozho, 2021). Institutional resistance to transparency poses another hurdle, with some officials opposing reforms that expose corruption (Mugari, 2021). Additionally, regulatory and ethical gaps, such as weak data protection laws, risk misuse of financial data and reduce public trust (UNODC, 2022).

Case study evidence reinforces these challenges: In South Africa's Corruption Watch, crowdsourced BDA faced data privacy issues (Moyo & Jansen, 2023), while Zimbabwe's e-TIP system succeeded despite infrastructure gaps through targeted investments (Munyoro & Zhou, 2023), providing actionable pathways for overcoming silos.

4.4 Discussion of Findings

The findings resonate with global literature emphasizing BDA's potential to enhance fraud detection and accountability (Sidauruk, 2024). However, Zimbabwe's context-specific challenges of data fragmentation, skill shortages and resistance to change mirror barriers identified in other developing economies (Sharma et al., 2020). While BDA offers a proactive shift from reactive auditing, its success hinges on addressing structural and cultural impediments, as per the theoretical framework (TAM and Institutional Theory). The multiple case studies provide richer empirical evidence, showing how BDA adoption influences decision-making (e.g., predictive modelling in Rwanda leading to resource recovery). A critical limitation is that without political will and institutional reform, technological solutions alone cannot curb entrenched corruption. Future research should explore stakeholder perceptions and quantitative impacts of BDA pilot projects in Zimbabwe.

5. CONCLUSION

Big Data Analytics presents a transformative opportunity to curb financial crimes in Zimbabwe's public sector by enabling real-time fraud detection, predictive risk assessment, and enhanced transparency. However, the current state of digital infrastructure, skills capacity, and institutional readiness poses significant challenges to effective implementation. If there is strategic policy support, technological investment, and capacity building initiatives, BDA can shift public financial management from a reactive to a preventive paradigm. Whilst Zimbabwe is on an ongoing economic and digital reform agenda, it is now a critical stage to embrace data-driven governance, rebuild public trust, and safeguard national resources.

6. RECOMMENDATIONS

To ensure the successful integration of BDA in Zimbabwe's public sector for curbing financial crimes, th

e following recommendations are proposed:

a. Capacity Building through Targeted Training Programs

Develop and implement comprehensive training programs for public auditors, forensic accountants, and IT professionals focused on BDA tools, machine learning, and data visualization techniques. Collaborate with local universities and international partners to build a competent workforce capable of leveraging BDA technologies to enhance financial oversight.

b. Data Integration and Standardization via a Centralized Platform

Establish a centralized digital platform that integrates financial data from all government ministries and agencies. This platform should facilitate seamless data sharing and enable holistic analysis, thereby addressing existing issues of data fragmentation and enabling more effective use of BDA.

c. Public-Private Partnerships for BDA Innovation

Foster strategic partnerships with local technology firms, academic institutions, and international tech providers to co-develop affordable, context-specific BDA solutions tailored to the public sector's needs. Such collaborations will enhance access to expertise, resources, and innovation, while reducing implementation costs.

d. Investment in Digital Infrastructure

Prioritize upgrading digital infrastructure, including high-speed internet, cloud storage, and cybersecurity systems, to support robust real-time BDA capabilities. Such investments are essential to overcoming current infrastructure limitations and ensuring sustainable, efficient data integration and analysis.

e. Development of a National Data Governance Framework

Develop a comprehensive data governance framework that sets standards for data quality, security, privacy, and ethical use in public sector BDA applications. This framework should align with international best practices and foster public trust by safeguarding sensitive financial information.

f. Stakeholder Engagement to Overcome Resistance to Transparency

Conduct awareness campaigns and workshops targeting public officials to highlight the benefits of BDA and address cultural resistance to increased transparency and accountability. Building understanding and buy-in among key stakeholders is critical to successful adoption and sustained use of BDA technologies.

7. Declaration of Interest

There are no relevant financial or non-financial competing interests to report.

8. Acknowledgements

The author extends heartfelt appreciation to Mr. David Chisunga for his invaluable supervision, guidance, and constructive feedback throughout the course of this research. Gratitude is also extended to the Harare Institute of Technology for providing academic support and resources that made this study possible.

9. References

1. Abeysekera, I. and Wickramasinghe, D., 2023. *Data analytics in public sector accounting: Bridging the accountability gap*. *Journal of Public Budgeting, Accounting & Financial Management*, 35(1), pp.12–31.
2. Auditor General of Zimbabwe, 2022. *Annual Report on the Appropriation Accounts, Finance and Revenue Statements and Fund Accounts for the Year Ended December 31, 2021*. Harare: Government of Zimbabwe.

3. Auditor General of Zimbabwe, 2023. *Annual Report for the Year Ended December 31, 2022*. Harare: Government of Zimbabwe.
4. Bertot, J.C., Jaeger, P.T. and Grimes, J.M., 2016. *Big data and public administration: A new frontier for government*. *Public Administration Review*, 76(2), pp.280–284.
5. Chikozho, C., 2021. *The impact of data infrastructure on public sector service delivery in Zimbabwe*. *African Journal of Public Affairs*, 12(3), pp.45–59.
6. Davis, F.D., 1989. *Perceived usefulness, perceived ease of use, and user acceptance of information technology*. MIS Quarterly, 13(3), pp.319–340.
7. DiMaggio, P.J. and Powell, W.W., 1983. *The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields*. American Sociological Review, 48(2), pp.147–160.
8. Gupta, R. and Jain, S., 2022. *Leveraging Big Data Analytics for Public Financial Management in India*. New Delhi: Ministry of Finance.
9. Internal Revenue Service (IRS), 2021. *Annual Report to Congress: Taxpayer Advocate Service*. [online] Available at: https://www.irs.gov [Accessed 5 Jun. 2025].
10. Kariuki, S. and Nyangweso, J., 2023. *Enhancing public financial accountability in Sub-Saharan Africa through predictive analytics*. *African Journal of Accounting, Auditing and Finance*, 9(2), pp.145–164.
11. Maposa, T. and Duri, K., 2024. *Enhancing Public Procurement Oversight in Zimbabwe: A Pilot Study on Big Data Analytics*. Harare: University of Zimbabwe Working Paper Series.
12. Matanda, D., 2021. *Trust in government: The case of Zimbabwe's public sector*. *Journal of African Governance*, 10(2), pp.100–115.
13. Moyo, P. and Jansen, L., 2023. *Citizen-Led Anti-Corruption Initiatives and Big Data in South Africa: The Role of Corruption Watch*. Johannesburg: Institute for Democratic Alternatives in South Africa (IDASA).
14. Mugari, T., 2021. *Data quality issues in the Zimbabwean public sector: A critical analysis*. *Journal of Data Management*, 8(4), pp.22–35.
15. Munyoro, T. and Zhou, M., 2023. *Big Data and Customs Fraud Detection: The Case of Zimbabwe's e-TIP System*. *African Journal of Public Sector Innovation and Management*, 10(2), pp.112–127.
16. Muthoni, M. and Ochieng, D., 2021. *Application of big data in forensic audits: Evidence from Kenya*. *International Journal of Accounting and Finance*, 6(4), pp.99–112.
17. Mwangi, J., 2022. *Effectiveness of Big Data Analytics in Anti-Corruption Agencies: A Kenyan Case Study*. Nairobi: Kenya School of Government.
18. Mwangi, J. and Oduor, P., 2021. *Big Data and Fiscal Transparency: A Case Study of Kenya's i-Tax and IFMIS Integration*. Nairobi: Kenya School of Revenue Administration.
19. Ndayishimiye, J. and Habimana, D., 2022. *Smart Public Finance and Data Analytics in Rwanda: Enhancing Efficiency and Accountability*. Kigali: Ministry of Finance and Economic Planning.
20. Nyoni, T., 2022. *Bridging the skills gap in data analytics within Zimbabwe's public sector*. *Zimbabwe Journal of Education and Development*, 18(1), pp.30–50.
21. OECD, 2021. *Digital Transformation for a More Transparent Public Sector*. Paris: OECD Publishing.
22. Okonjo-Iweala, N., 2021. *Fighting Corruption is Dangerous: The Story Behind the Headlines*. Cambridge, MA: MIT Press.
23. Sharma, P., Gupta, A. and Dey, S., 2020. *Predictive analytics in public sector: A case study of financial crime prevention*. *Public Sector Innovation Journal*, 25(1), pp.42–56.

24. Sidauruk, L., 2024. *Big Data Analytics and the Future of Public Sector Forensics*. *International Journal of Government Auditing*, 41(1), pp.56–72.
25. UNODC, 2022. *Harnessing Big Data to Fight Corruption in the Public Sector*. Vienna: United Nations Office on Drugs and Crime.
26. World Bank, 2022. *Transforming Public Financial Management through Digital Technologies: A Framework for Developing Countries*. Washington, D.C.: World Bank Group.
27. Yin, R.K., 2018. *Case Study Research and Applications: Design and Methods*. 6th ed. Thousand Oaks, CA: SAGE Publications.