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TRADITIONAL KNOWLEDGE DISCLOSURE AND DIGITAL INNOVATION ACCOUNTABILITY IN EMERGING ECONOMIES

Evidence from Corporate Reporting Practices and Governance Mechanisms

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1. Chiamaka Ngozi Okafor

Department of Accounting, University of Nigeria, Nsukka, Enugu State, Nigeria
Email: chiamaka.okafor@unn.edu.ng ORCID: 0000 0002 1155 4301

2. Leila Amina Hassan

Department of Business Administration, University of Nairobi, Nairobi, Kenya
Email: leila.hassan@uonbi.ac.ke ORCID: 0000 0003 4088 2266

3. Sipho Dlamini

School of Accountancy, University of Cape Town, Cape Town, South Africa
Email: sipho.dlamini@uct.ac.za ORCID: 0000 0001 9920 7744

4. Zahra Bint Mahmoud

Department of Accounting and Finance, University of Dar es Salaam, Dar es Salaam, Tanzania
Email: zahra.mahmoud@udsma.ac.tz ORCID: 0000 0002 6709 1180

ABSTRACT

Background: Traditional knowledge has increasingly attracted policy attention within emerging economies due to its relevance to biodiversity, indigenous innovation, cultural identity, and sustainable livelihoods. Yet, corporate utilisation of traditional knowledge in product development and supply chain sourcing raises accountability concerns, particularly when digital innovation accelerates data extraction, algorithmic commodification, and cross border commercialisation.

Aim: This study examined how traditional knowledge disclosure influences digital innovation accountability among firms in emerging economies, while assessing whether governance mechanisms strengthen transparency and responsible digitalisation of indigenous resources.

Methodology: The study adopted an ex post facto design using balanced panel data from 72 listed non financial firms across Nigeria, Kenya, South Africa, and Tanzania covering 2014 to 2024. Traditional knowledge disclosure was measured using a structured index capturing reporting on community engagement, benefit sharing, intellectual property safeguards, and indigenous consent processes. Digital innovation accountability was operationalised through disclosures on data ethics, algorithmic governance, cybersecurity controls, and innovation risk oversight. Data were analysed using descriptive statistics, correlation analysis, fixed effects regression, and robust regression for sensitivity.

Findings: Traditional knowledge disclosure showed a positive and statistically significant association with digital innovation accountability, indicating that firms reporting community consent and benefit sharing practices are more likely to strengthen ethical digital governance and innovation risk control. Governance quality, proxied by audit committee diligence and board independence, significantly strengthened the relationship, suggesting that responsible reporting on indigenous resources improves when oversight structures are active. However, disclosure quality varied substantially across countries, reflecting uneven regulatory enforcement and heterogeneous stakeholder pressure.

Contributions: The study contributes to sustainability reporting and digital accountability literature by extending disclosure research to traditional knowledge governance, a neglected domain in corporate reporting within emerging economies. It provides evidence that ethical management of indigenous knowledge resources is increasingly interconnected with digital innovation systems and risk governance.

Recommendations

Regulators: Develop traditional knowledge disclosure guidance that integrates indigenous benefit sharing expectations with digital governance requirements.

Firms: Embed indigenous consent, benefit sharing, and knowledge protection into innovation governance frameworks and board oversight.

Researchers: Incorporate qualitative validation, assurance mechanisms, and sectoral analysis to assess whether reported practices reflect substantive accountability.

Keywords: Traditional knowledge disclosure, Digital innovation accountability, Indigenous consent, Benefit sharing, Algorithmic governance, Emerging economies.

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1.0 INTRODUCTION

Traditional knowledge represents indigenous and community based knowledge systems developed over time through cultural practice, environmental interaction, and intergenerational transfer. In emerging economies, traditional knowledge contributes to biodiversity conservation, healthcare practices, agricultural resilience, and cultural industries. However, increased commercial interest has positioned traditional knowledge as a strategic resource for firms seeking competitive advantage through natural products, cultural branding, and locally embedded innovation ecosystems.

Digital innovation has transformed the speed and scale at which traditional knowledge can be documented, analysed, and monetised. Datafication of indigenous knowledge through digital platforms, mobile applications, and algorithmic modelling can generate new value pathways, but also introduces accountability risks linked to privacy, consent, unfair appropriation, and benefit distribution. These concerns are amplified when reporting practices remain weak and when governance mechanisms do not provide effective oversight.

Corporate disclosure functions as a transparency mechanism that reduces information asymmetry and signals responsible conduct to stakeholders. Yet, traditional knowledge is rarely integrated into mainstream sustainability reporting frameworks, resulting in limited visibility and inconsistent accountability practices. This study therefore examines whether disclosure on traditional knowledge practices strengthens digital innovation accountability among firms operating in emerging economies.

2.0 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Conceptual review Traditional knowledge disclosure covers reporting on indigenous community engagement, prior informed consent, benefit sharing, cultural heritage protection, and intellectual property safeguards. Digital innovation accountability reflects the transparency and governance systems through which firms manage ethical risks in digital transformation, including data privacy controls, algorithmic oversight, cybersecurity readiness, and innovation risk management.

Theoretical review Stakeholder theory suggests that firms disclose traditional knowledge practices to maintain legitimacy and strengthen relationships with communities, regulators, and consumers. Institutional theory explains that disclosure adoption depends on coercive pressures from regulators, mimetic pressures from peer firms, and normative expectations from professional and civil society groups. These theories jointly predict that greater disclosure and stronger governance should improve accountability outcomes.

Empirical review Sustainability disclosure studies show that transparency improves reputation and risk management, but evidence remains mixed due to symbolic compliance and weak enforcement. Digital accountability research highlights that governance quality influences data ethics and cybersecurity disclosure, suggesting that oversight structures can improve substantive reporting.

Hypotheses H1 Traditional knowledge disclosure significantly influences digital innovation accountability in emerging economies. H2 Governance mechanisms significantly strengthen the effect of traditional knowledge disclosure on digital innovation accountability.

3.0 METHODOLOGY

The study adopted an ex post facto research design using balanced panel data from 72 listed non financial firms across Nigeria, Kenya, South Africa, and Tanzania over 2014 to 2024. Traditional knowledge disclosure was measured using an index capturing community engagement reporting, consent processes, benefit sharing disclosures, and knowledge protection safeguards. Digital innovation accountability was measured using disclosures on data ethics frameworks, cybersecurity controls, algorithmic governance, and innovation risk oversight.

The model specification is expressed as $DIA_{it} = \beta_0 + \beta_1 TKD_{it} + \beta_2 GOV_{it} + \beta_3 (TKD \times GOV)_{it} + \beta_4 FSIZ_{it} + \beta_5 LEV_{it} + \beta_6 GROW_{it} + \epsilon_{it}$, where DIA denotes digital innovation accountability, TKD denotes traditional knowledge disclosure, GOV represents governance quality indicators, and control variables include firm size, leverage, and growth.

4.0 DATA ANALYSIS AND DISCUSSION OF FINDINGS

Descriptive statistics suggest that traditional knowledge disclosure remains uneven across emerging economies, with higher disclosure levels observed in firms operating in consumer products, pharmaceuticals, and extractive linked supply chains. Digital innovation accountability disclosures show moderate expansion, particularly in firms adopting cybersecurity frameworks and reporting data governance structures. Correlation results indicate a positive association between traditional knowledge disclosure and digital innovation accountability.

Regression results reveal that traditional knowledge disclosure positively and significantly influences digital innovation accountability, suggesting that firms reporting indigenous consent and benefit sharing practices are more likely to adopt transparent innovation governance and ethical digital controls. Governance quality significantly strengthens this relationship, implying that oversight structures promote more credible disclosure and risk accountability. The results underscore that traditional knowledge governance is increasingly inseparable from digital innovation risk management in emerging economies.

5.0 CONCLUSION AND RECOMMENDATIONS

The study concludes that traditional knowledge disclosure enhances digital innovation accountability among firms in emerging economies. It further demonstrates that governance mechanisms strengthen this relationship, confirming that responsible digital innovation requires both transparent reporting and effective oversight. The findings emphasise the need for integrated disclosure frameworks that capture indigenous knowledge governance alongside digital accountability metrics.

Regulators should develop disclosure guidance that integrates traditional knowledge protection with digital governance expectations. Firms should embed consent and benefit sharing protocols into digital innovation strategy and board oversight. Researchers should extend the study using qualitative validation, assurance measures, and sector specific disclosure dynamics.

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