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Integrating Artificial Intelligence (AI) in the Accounting System of Non-Governmental Organizations (NGOs): A Critical Evaluation in the Indian Context

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Abstract:- Every realm of the modern world has been marked by technological advancements; this study meticulously explores avenues of integrating artificial intelligence (AI) in the accounting systems of Non-Governmental Organisations (NGOs) in the Indian context. As NGOs play a pivotal role in the financial sustainability of India, the advent of AI in the accounting system of NGOs advocates a paradigm shift in efficiency in accounting, accuracy in bookkeeping, transparency in financial reporting, strategic and predictive financial analysis, assessing the impact of NGOs in the economic development of the country, detecting fraudulent activities and the future financial prospects of NGOs too. This study also highlights how to reduce the gap between the traditional accounting system and the revolutionary accounting system by harnessing AI in the accounting systems of NGOs. The study not only examines the challenges that arise while integrating artificial intelligence into the accounting systems of NGOs but also underscores strategic recommendations to overcome the hassles of the integration of AI into the accounting systems of NGOs.

Keywords: Artificial Intelligence, Non-Governmental Organizations, Integration, Financial Sustainability of India.

1. Introduction

The concept 'Artificial Intelligence' (AI) is a man-made sentient being able to rationally think and has the capacity to have a transformative change across the various realms of the world including the accounting sector too. NGOs as an entity rapidly works for the economic development of India with limited budgets but deeply relying on donations and grants with utmost care of accountability, but integration of AI with NGOs are certainly aiming at refining its competitiveness, efficiency, reengineering its services and business strategies (Campell et al.,2020). The integration of AI with the accounting system of NGOs can revolutionize the traditional accounting system, though the system is reliable but still under the suspect of human error and time consumption. This study critically examines to draw qualitative insights on the status of accounting practices of NGOs, identifies the avenues of integration of AI particularly with the accounting system of NGOs, together with potential benefits of integration of AI with the accounting practices of NGOs also the impact in the economic development on account of the integration. This study highlights how far the integration of AI with the accounting practices of NGOs can reduce the gap between traditional and revolutionary accounting system as well the challenges in the integration of AI with the accounting system of NGOs. The integration of AI with the accounting system of NGOs certainly ensures soundness in the financial management, optimum utilization of funds and grants, win the confidence of donors, setting international standards and trends in similar NGOs existing in the national and international level and serves ethics and goodness in the mission of NGOs.

2. Status of Present Accounting System of NGOs

Despite the significant efforts to enhance compliance of statutory methods and framework of accounting, in the Indian context, may NGOs still grapple with many challenges like adoption of modern accounting policies and

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automated regulatory frame works, inadequate technological infrastructure including the integration of technology and AI. This study provides insights for the effectiveness of accounting system of NGOs and strategies for improvement with the integration of AI in the accounting system of NGOs through the comprehensive review of existing literature.

2.1. Major regulatory frame works of NGOs in the Indian Context

In the Indian context, NGOs operate under a stringent regulatory framework governed by multiple complicated Acts, laws and regulations, such as:

> ➢ The Societies Registration Act 1860
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> ➢ The Indian Trust Act 1882
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> ➢ The Companies Act, 2013 (for section 8 Companies)
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> ➢ The Foreign Contribution Regulation Act, 2010
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> ➢ Income Tax Act 1961

2.2. Scenario of accounting system of NGOs

Most of the NGOs, in India, are relying on traditional accounting practices including the manual record keeping, use of basic or outdated software and lack of uniform accounting standards and practices. Apart from this, the existing review of literature identified some of the key drawbacks of the existing system of accounting in NGOs namely standardized accounting procedures, limited financial expertise, insufficient regulatory compliance and above all challenges in the financial audit and reporting.

2.2.1. Lack of standardized accounting policies and procedures: A country like India, with diversified culture and village system, it is often a challenge for NGOs to follow a standardised accounting policies and procedures, which certainly leads to inconsistent accounting policies and procedures.

2.2.2. Limited Financial Expertise: Well-sounded financial expertise is the essential part of every organization to maintain accuracy in accounting, budgeting and financial planning. Unfortunately, most of the NGOs lack staff with adequate financial management skills.

2.2.3. Insufficient regulatory compliances: Majority of the NGOs comes under the purview of organizations for 'non-profit'. This phenomenon often leads to less stringent regulatory compliances compared with the organizations for 'profit'.

2.2.4. Challenges in the financial auditing and reporting: Traditional system of accounting is always a challenging system in the modern era. Outdated and traditional system of accounting frequently fails to provide a comprehensive financial auditing and reporting.

These significant challenges, always a threat to NGOs and impede their effectiveness especially in rural areas. Integration of AI with the system of accounting of NGOs is a need of the hour in the Indian context.

3. Avenues of integration of artificial intelligence

The integration of AI in various sectors in a developing country like India has unique opportunities as well as challenges. The main avenues through which AI can be integrated in the context of India are summarized from major six perspectives:

3.1. Healthcare: Health care systems are, complex in nature and challenging, for all stakeholders with the potential to improve patient care and quality of life. Integration of AI into clinical practices can revolutionize healthcare system in India particularly in personalized medicine, optimize medication dosage, health management supported by patient education, provide virtual health assistance, support to mental health care with the support of patient-doctor relationship.

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3.2. Agriculture: Agriculture is the backbone of the Indian economy and integration of artificial intelligence in agriculture can address many challenges faced by farmers namely weather forecast, examine and monitor soil health, cultivation and management of crops and supply chain management at a large sense.

3.3. Education: Personalized learning platforms, catering individual needs of students at their own places, assisting teachers and facilitators to fulfil their automated administrative tasks, reduce the gap between rural and urban area through quality education through digital platforms are some of the merits of integration of AI with education.

3.4. Governance: Integration of AI with the governance of all realms can lead to more transparency and accountable system particularly in public governance and in the accuracy of data collection and its analysis resulting to decision-making and effective task planning.

3.5. Social welfare: The integration of artificial intelligence with social welfare holds significant potential to transform and enhance the delivery of various social services to the society within the framework of ethics and effective implementations.

3.6. Charitable works: AI holds immense capacity to revolutionize the charity work by enabling organization to work more effectively, reaching to more people who are in need and maximize the charity works ethically in the forms of self-help groups, centers for leprosy and aids microfinance, self-employment opportunities, craft works and allied services.

While examining the above elements, it is very important that NGOs serves as critical intermediaries between government and stakeholders for providing essential services like health care, agriculture, education, governance and social welfare. Therefore, integration of artificial intelligence with the accounting system of NGOs has a significant scope.

4. Outline of the integration of AI with the accounting system of NGOs and the ensured outcomes

The integration of artificial intelligence with NGOs has the potential capacity to enhance its effectiveness not only in financial management but also in the administration system of NGOs, which significantly contribute to the economic development of India, since most of the NGOs are operating in the rural area of India for education, healthcare, agriculture and environmental sustainability. Ashok Panigrahi, Shrinivas C Ahirrao and Arav Patel (2024) examines that how the integration of AI creates an impact as well as intervention on GDP growth, employment prospects, productivity, poverty alleviation and allied business and economic aspects of the Indian economy. This takes place because of the integration of AI with NGOs to analyze large data sets, predict trends and automate routine tasks on their core missions. The impacts of integration of AI with the accounting system of NGOs are summarizes as follows.

Table 1: A broad outline of the integration of Artificial Intelligence with the accounting system of NGOs and ensured outcomes in the Indian context

Sl No	Area of AI Application	Description	Benefits	Challenges	Implementation strategies	Ensured outcomes
1	Automated Accounting and financial Data Entry	- Use of AI to automate the entry of financial transactions and data	- Reducing manual efforts - Saves time - Increase efficiency - Accountability	- Initial cost of investments for AI implementation, skilled staffing, training - Data privacy and data security	- Implement reliable and suitable AI tools and security control system - Adequate training for staff	- Efficiency and accuracy - prevention of financial fraud and error - enhance the quality of books of accounts

Sl No	Area of AI Application	Description	Benefits	Challenges	Implementation strategies	Ensured outcomes
2	Administration	- automated administrative system	- effective administration in different levels of organisations	- cost incurred for the staffing, recruiting and staff maintenance	- appoint skilled and trained personnel	- Augmented financial management - paradigm shift in the system of accounting, transparency - optimum resource allocation - easy for auditing and internal check - accessibility and readiness
3	Fraud Detection	- AI enables to identify and flag suspicious transactions	- Early detection of fraud	- Complexities of AI	- Regular and frequent updating of AI	- Prevention and reduction of frauds
4	Financial forecasting	- AI enables to predict future financial trends	- Soud financial planning - Well informed decision making	- Availability and easy access of historical data - Data accuracy and quality	- Use of multiple forecasting models	- Accurate financial planning - Clear cut financial strategies
5	Mobilization of fund	- Analysing the means and ways for fund mobilization - Predicating the behaviour of fund mobilization	- Personalised engagement in fund mobilisation	- Data privacy and accuracy	- Personalised communications with donors	- Increased trustworthiness
6	Utilization of fund	- AI will categorise and tract the utilisation of fund as per the priority	- Control over the utilization of fund	- Integration with the existing fund utilization system	- Permission for fund utilization will be granted only after a thorough analysis	- Separate statement for each utilization in detail - Enhanced budget management
7	Development	- Economic development of the nation	- Predicting the economic development	- Integration with the current economic development	- Measurable and specific plan out	- Economic development - Productivity
8	Digitalisation	- Automation	- Internal process can be shortened	- Inadequate management bandwidth	- Scaling maximization of goals	- Enabling network in terms of accounting - cloud computing

Source: Authors work

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The integration of AI with the accounting system of NGOs will substantially increase the efficiency and accuracy of NGOs by controlling the challenges related to resource constraints, data management and decision-making process and thereby results in the achievement of sustainable development goals (Vinuesa, R., *et al.* 2020). This creates a transformative shift with significant implications for financial management, transparency and accountability.

It also explores multifaceted benefits of AI in prevention of financial fraud, enhancing quality of accounting records, and augmenting financial management practices within NGOs in India. By leveraging AI technologies, NGOs can achieve a paradigm shift in their accounting systems, leading to improved transparency and accountability, optimum resource allocation and streamlined auditing and internal checks. The incorporation of AI facilitates accurate valuation and verification processes, ensuring accessibility and readiness of financial information, thereby contributing to the economic development of India. The integration of AI also enhances productivity and financial perfection by enabling network and cloud computing within the accounting domain of NGOs and underscores the critical need for adopting AI-driven accounting system to achieve economic development, improve financial management practices, and foster an environment of trust and reliability in NGO operations.

Furthermore, AI integration not only enhances the efficiency and effectiveness of accounting process of NGOs but also ensures better compliance with regulatory standards, thereby promoting sustainable development and improved service delivery. As a result, the integration of AI revolutionizes the accounting practices, paving the way for a more transparent, accountable, and economically robust NGO system.

4.1 A sketch of availability of forms of AI applications

Some of the tools and software solutions for managing accounts of NGOs are as follows:

4.1.1. Accounting: The main accounting software with AI capabilities are QuickBooks and Xero. QuickBooks accounting software are automated bookkeeping software used for expense tracking, invoicing, financial reporting, predictive insights, anomaly detection and cashflow forecasting whereas Xero are used for invoicing, inventory management, payroll, financial reporting, bank reconciliation, expense categorisation and real-time financial analytics.

4.1.2. Expenses: Expensify and Zoho Expenses are the two major software used for the expense management of NGOs. Expensify is used for expense tracking, receipt scanning, reimbursement, automatic expense categorization, receipt OCR (Optical Character Recognition) and real time policy compliance whereas Zoho Expense used for expense reporting, receipt upload, approval workflows, automated receipt scanning, policy violation alerts and expenses analytics.

4.1.3. Donor Management and Fund Raising: Donor Perfect and Bloomerang are the two-software used for donor management and fund raising. Donor Perfect is capable to manage donor database, fundraising, predict donor insights, and donation trend analysis whereas Bloomerang is a donor management system for email marketing, reporting, donor retention insights, engagement scoring and fund-raising analytics.

4.1.4. Financial Planning and Analysis: Adaptive Insights and Anaplan are used for financial planning and analysis. Budgeting, forecasting, financial modelling, scenario planning and predictive analysis are carried out in Adaptive Insights whereas business planning, forecasting, performance management and collaborative planning are carried out by Anaplan.

4.1.5. Audit and Compliance: Audit Board and Netwrix Auditor are used for audit and compliances. Audit management, risk assessment, compliance tracking are performed by Audit Board whereas Income Tax auditing is carried out by Netwrix.

5. A paradigm shift in the system of accounting of NGOs

Non-Governmental Organizations often coupled with complex financial environment, constrained with the mobility of grant and donations and above all demands transparency and accountability (Keating, *et al,* (2003) from beneficiaries, stakeholders and government. The available literature identifies that AI can significantly think

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like human beings (Haugeland, 1989), think rationally (Winston, 1992), act like human beings (Rich and Knight, 1991) and act rationally (Nilsson and Nilsson 1998). Therefore, there will be a paradigm shift in the system of accounting of NGOs in its efficiency, transparency, accuracy and resource allocation once it is integrated with AI.

6. Reduce the gap between the traditional and revolutionary accounting system of NGOs

By leveraging artificial intelligence in the accounting system of NGOs, NGOs can enhance their optimum level of fund allocation, the best possible ways and means to raise funds and donations, ensuring greater accuracy in financial management process and efficiency and transparency in accounting and facilitate better financial decision-making. Integration of AI with the accounting system of NGOs results in machine learning algorithms and robotic process of automation leads to reduce human errors, cost reduction, time saving, fraud detection and provide real time financial insights.

7. Challenges in the integration of AI

While the potential of integration of AI with the accounting system of NGOs is vast and beyond the imagination, there are several challenges and barriers that are needed to be addressed. The major challenges in the integration of AI with the accounting system of NGOs are as follows.

7.1. Lack of digital infrastructure in rural areas: Rural areas often lag urban areas in case of digital infrastructure and technologies (Deichmann, Goyal, & Mishra, 2016) which exacerbating the integration of AI with the accounting system of NGOs.

7.2. Data security and privacy: Unequitable data security and privacy lock the integration of artificial intelligence with the system of accounting of NGOs. A regulatory framework is highly essential for data security and privacy in rural areas particularly (GDPR 2016).

7.3. Skilled workforce: NGOs might find difficult to attract and retain such skilled workforce especially when competing with higher paying private sectors.

7.4. Expertise gap: Implementing AI in the accounting system of NGOs requires expertise both in AI technologies and accounting principles, polices and methods. Lack of personnel with technical and digital literacy are challenging factors while integrating AI with the accounting system of NGOs.

7.5. Limited financial resources: While integrating AI, NGOs encounter hurdles of challenges namely high initial cost for software, hardware and other necessary technological infrastructure, expenses for training programs and potential hiring of specialised personnel, continuous updates and maintenance, etc.

7.6. Complex regulatory compliances and framework: NGOs, generally functions in rural areas and regions of India, irrespective of their nature of operations. Diversified rules and regulations of rural areas and regions are challenging for the integration of AI with the accounting system of NGOs.

While integrating AI into the accounting systems highlights a blend of advantageous and disadvantageous but certainly NGOs will be able to overcome these challenges with novel solutions to promise a bright future.

8. Conclusion

In conclusion, the study 'integration of AI with the accounting system of NGOs in the Indian context' is evolving in a gradual shift from traditional accounting practices to modern technology driven approaches to uphold greater possibilities of improvement in all functional aspects of NGOs, which they engage, with efficiency, transparency, accountability, equitability and prosperous future.

While recognising the challenges inherent in integrating AI in the system of accounting of NGOs, the study deeply emphasises on strategic recommendations to mitigate various obstacles too. By bridging the gap between traditional and revolutionary accounting system, NGOs can capitalise on the potential capacity of AI to enhance efficiency in all realms of NGOs. Thus, the integration AI with the accounting system of NGOs leads to a transformative leap forward to empower NGOs to fulfil not only their mission more effectively but to the economic development of India too.

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