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TAX INCENTIVES, FORMAL ACCOUNTING PRACTICES, AND FINANCIAL INCLUSION AMONG WOMEN ENTREPRENEURS IN NIGERIA'S INFORMAL SECTOR

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Abstract
This study explored how tax incentives, formal accounting practices, and financial inclusion are interconnected among women entrepreneurs in Nigeria's informal sector. Data from 281 women entrepreneurs in Southwest Nigeria were gathered using structured questionnaires and analysed through descriptive statistics, Pearson chi-square tests, and structural equation modelling. The results showed that most respondents had limited awareness of and utilisation of tax incentives. Business registration was significantly associated with access to tax incentives ($\chi^2 = 17.097$, $p < 0.01$), and access to financial services strongly correlated with financial inclusion ($\chi^2 = 111.555$, $p < 0.01$). Additionally, adopting formal accounting practices significantly enhanced financial inclusion ($\chi^2 = 25.376$, $p < 0.01$). Structural equation modelling revealed that formal accounting practices mediate the link between tax incentives and financial inclusion. Formal accounting acts as a crucial bridge, facilitating the transfer of policy benefits into improved financial outcomes. The study concludes that tax incentives alone are inadequate to increase financial inclusion; they require support from formalisation and stronger accounting practices. Inclusive, formal accounting practices are essential in translating tax incentives into greater financial inclusion for women entrepreneurs. Recommendations include simplifying registration and tax procedures for women and implementing targeted educational campaigns to increase understanding of the benefits of tax reform.

Keywords: Tax incentives; Financial inclusion; Informal sector; Women entrepreneurs
JEL Classification Codes: G53, H25, M41, O17, J16.

1. Introduction

Financial inclusion is described as access to formal financial services. (Demirgüç-Kunt et al., 2022; Allen et al., 2016). Research conceptualises financial inclusion as a multidimensional concept that encompasses not only access but also the effective use and quality of these services (Sarma, 2008; Ozili & Mhlanga,2024). While inclusion in the formal financial system creates new economic opportunities and encourages growth (Demirgüç-Kunt et al., 2022; Nkoa & Song, 2023), it also serves as a tool for addressing structural inequalities affecting women (Omar & Inaba, 2020). Typically, informal businesses operate outside formal regulations and institutions (Chen, 2012; International Labour Organisation [ILO], 2018), limiting their access to official financial services and products (Demirgüç-Kunt et al., 2022). Thus, the informal sector is considered important in shaping financial inclusion outcomes. Women entrepreneurs constitute a large part of the global informal workforce (ILO, 2018; World Bank, 2022) and, to that extent, are affected. To improve financial inclusion for women entrepreneurs, policies should therefore aim to support their transition into the formal economy (Omar & Inaba, 2020; Demirgüç-Kunt et al., 2022).

The informal sector comprises unregistered and weakly regulated economic activities operating outside formal institutional frameworks. It is usually small-scale and characterised by low levels of organisation. The sector has a high level of self-employment and lacks legal protections (ILO, 2018, 2018; Chen, 2012; Schneider & Enste, 2000; National Bureau of Statistics [NBS],2021). The informal sector accounts for a higher share of total employment globally (ILO, 2018; La Porta & Shleifer, 2014) and for about 92.7% of total employment in Nigeria (NBS, 2022). Globally, more women appear to work informally, highlighting gender employment gaps (World Bank, 2022). Women entrepreneurs own and manage a range of businesses within and across nations. They make operational decisions and accept the associated risks of managing their businesses. Their efforts improve household welfare and contribute to economic resilience (Kabeer, 2012). These women entrepreneurs can be integrated into the formal financial system by adopting formal accounting practices (McMahon, 2001; Minnis, 2011; Ciza et al., 2025). These practices include, but are not limited to, the systematic recording and reporting of business transactions (Minnis, 2011; Ciza et al., 2025; Webb et al., 2020). Maintaining accurate financial records this way enhances transparency and provides reliable information (Minnis, 2011; Ciza et al., 2025; McMahon, 2001; Gyamera et al., 2023).

Formal accounting practices refer to the systematic recording, classification, measurement, and reporting of financial transactions in accordance with established accounting standards and regulatory requirements (Minnis, 2011; Ciza et al., 2025). These practices ensure the availability of reliable, comparable financial information essential for decision-making, accountability, and regulatory compliance (International Accounting Standards Board [IASB], 2023; International Public Sector Accounting Standards Board [IPSASB], 2023). Formally registered enterprises are generally required to maintain accurate financial records and fulfil reporting obligations (World Bank, 2022; Organisation for Economic Co-operation and Development [OECD], 2023). Therefore, the adoption of formal accounting is closely associated with business formalisation. Governments often use tax incentives as policy instruments to encourage business registration and participation in the formal economy (OECD, 2023; World Bank, 2022). By promoting formalisation, these incentives may encourage women entrepreneurs in the informal sector to keep proper financial records (OECD, 2023; Ulyssea, 2020). The resulting improvement in the quality and credibility of financial information can reduce information asymmetries between entrepreneurs and financial institutions. This, in turn, enhances creditworthiness assessments and facilitates access to formal financial services (Urueña-Mejía et al., 2023; Demirgüç-Kunt et al., 2022). Consequently, formal accounting practices may serve as an important mechanism through which tax incentives contribute to financial inclusion among women entrepreneurs in the informal sector (Minnis, 2011; Ciza et al., 2025; World Bank, 2022; OECD, 2023; Webb et al., 2020).

Existing research shows that informal firms respond to regulatory and institutional incentives that affect their decision to formalise (Bruhn & McKenzie, 2014; World Bank, 2022; OECD, 2023; Ulyssea, 2020). However, there is limited empirical evidence on how tax incentives contribute to improved financial inclusion for female entrepreneurs in the informal sector, especially in developing countries such as Nigeria (Bruhn & McKenzie, 2014; World Bank, 2022; OECD, 2023; Ulyssea, 2020; Perry et al., 2007; World Bank, 2022; ILO, 2018; Demirgüç-Kunt et al., 2022). Most existing research examines the broad dynamics of informality and formalisation, or the relationship between firm performance and formalisation (de Mel et al., 2013; Ulyssea, 2018). However, there remains limited empirical understanding of the behavioural and managerial processes by which policy tools, such as tax incentives, drive the

shift from informality to participation in the formal financial system. In particular, the importance of formal accounting practices as a mediating mechanism linking tax incentives to financial inclusion outcomes has not been sufficiently studied.

While earlier research shows that formalisation improves firms' access to credit and financial services (de Mel et al., 2013; Ulyssea, 2020; World Bank, 2022; OECD, 2023), there has been limited attention to the internal processes within these firms (La Porta & Shleifer, 2014; Ulyssea, 2020). These include record-keeping, accounting, and financial reporting (Minnis, 2011; Ciza et al., 2025; Maseko & Manyani, 2011; McMahon, 2001). Such processes are crucial for turning formalisation into real financial inclusion benefits (Webb et al., 2020; La Porta & Shleifer, 2014). Additionally, even though it is widely recognised that women entrepreneurs are more inclined to operate informally and encounter greater barriers to formal financial services, the gendered processes through which policy incentives interact with informal business practices to affect financial inclusion are still not well understood, especially in Nigeria (Perry et al., 2007; La Porta & Shleifer, 2014). The lack of a clear mechanism linking tax incentives, accounting methods, and financial inclusion hampers a full understanding of how policy measures translate into tangible financial outcomes for women in informal sectors. In an attempt to address the identified gaps, this study examines the relationship between tax incentives and financial inclusion among women entrepreneurs in Nigeria's informal sector and the association of this relationship with formal accounting practices. The study contributes to a more nuanced understanding of how fiscal policy instruments can enhance financial inclusion through behavioural and institutional channels in informal economic settings. It focuses on associations using chi-square analysis rather than testing causal relationships. The remaining sections present the literature review, describe the methodology, report the findings, and conclude with appropriate recommendations.

2. Literature Review

Conceptual Review

Tax incentives are fiscal policy tools which reduce tax burdens through exemptions, deductions, credits, and tax holidays (Zee et al., 2002; Klemm & Van Parys, 2012; OECD, 2023). Tax incentives offer immense benefits to entrepreneurs. They stimulate investment, promote formalisation, improve compliance, encourage business registration, and influence entrepreneurial activity and investment choices in developing economies (Klemm & Van Parys, 2012; OECD, 2023; Zee et al., 2002; La Porta & Shleifer, 2014). They also reduce business costs and increase engagement with the formal sector (de Mel et al., 2013; Ulyssea, 2020). Studies indicate that tax incentives positively contribute to entrepreneurship and business performance, particularly among formal enterprises (Beck et al., 2005; Klemm & Van Parys, 2012; OECD, 2023). However, the benefits of tax incentives are unevenly distributed, excluding many informal-sector operators due to a lack of registration and weak institutional integration (Perry et al., 2007; La Porta & Shleifer, 2014; Ulyssea, 2020).

The literature confirms that the informal sector in Nigeria is a major source of employment and income (Adekoya et al., 2020; La Porta & Shleifer, 2014; Schneider & Enste, 2000; Ulyssea, 2020). However, women are disproportionately represented in the informal sector, mainly engaged in small-scale trading and microenterprises (Ulyssea, 2020; ILO, 2018; Chen et al., 2018; OECD, 2023). Informality is driven by high compliance costs, low institutional trust, and limited access to formal business support systems (Beck et al., 2005; La Porta & Shleifer, 2014; Ulyssea, 2020). This likely explains why women operating in the informal sector face structural challenges and difficulties obtaining credit (Ulyssea, 2020; ILO, 2018). Women entrepreneurs operating in the informal sector often face major barriers to financial inclusion.

These include insufficient business documentation, lack of acceptable collateral, and poor integration with formal financial systems, all of which hinder their access to formal credit and financial services (World Bank, 2022; ILO, 2018; Demirgüç-Kunt et al., 2022). Additionally, broader institutional and socio-cultural factors such as gender norms, limited financial literacy, and structural exclusion from formal banking exacerbate these challenges, especially for women-owned informal enterprises (World Bank, 2023; Allen et al., 2016). Overall, these combined factors sustain financial exclusion by restricting women entrepreneurs' ability to establish financial histories and meet the criteria of formal financial institutions. The above issues further hinder formalisation efforts and prevent informal women entrepreneurs from accessing tax incentives available to registered businesses (Klemm & Van Parys, 2012; OECD, 2023; La Porta & Shleifer, 2014; Ulyssea, 2020; Zee et al., 2002). Formalisation is therefore a critical channel through which firms become visible within the tax system and become eligible for fiscal incentives designed to encourage compliance and enterprise growth (Klemm & Van Parys, 2012; OECD, 2023; Ulyssea, 2020). Tax incentives encourage business formalisation by reducing the perceived and actual costs of registration (Klemm & Van Parys, 2012; OECD, 2023; Zee et al., 2002). An important outcome of business formalisation is the adoption of formal accounting practices, which support compliance with reporting requirements and improve financial transparency.

Formal accounting practices involve the systematic recording, classification, measurement, and reporting of financial transactions in accordance with established standards and regulations (Minnis, 2011; Ciza et al., 2025; IASB, 2023; IPSASB, 2023). These practices ensure the creation of reliable, transparent, and comparable financial information, which supports decision-making, accountability, and compliance with regulatory requirements (IASB, 2023; IPSASB, 2023). Financial accounting is the practice of recording monetary transactions and processing them in accordance with established principles and standards to generate reports for users of accounting information in a specified format and manner (Dechow et al., 2010; Nobes et al., 2020). Accounting practices enhance the quality of financial data, leading to increased transparency and greater business credibility (Dechow et al., 2010). Maintaining organised financial records enables enterprises to keep track of their financial standing and operational results to external stakeholders. This enhances transparency and reduces information asymmetry, thereby boosting firms' credibility and improving their access to external financing (Healy & Palepu, 2001; Bushman & Smith, 2001; IASB, 2023). Empirical studies indicate that high-quality financial reporting also facilitates more precise credit evaluations and investment decisions by financial institutions, especially in contexts where collateral is limited and lending depends heavily on accounting data (IASB, 2023; Stiglitz & Weiss, 1981; Demirgüç-Kunt et al., 2022).

Financial inclusion is described as having access to financial services (World Bank, 2022; Demirgüç-Kunt et al., 2022). More broadly, financial inclusion encompasses access to, availability of, and usage of affordable formal financial services, including savings, credit, insurance, and payment services (Demirgüç-Kunt et al., 2022). The concept serves as a veritable tool to encourage entrepreneurial growth and resilience (Demirgüç-Kunt et al., 2022; Wang et al., 2023). Clear and trustworthy financial information helps maximise the benefits of financial inclusion (Allen et al., 2016). Robust accounting systems facilitate access to external funding by enabling lenders to assess risk more effectively (Healy & Palepu, 2001; World Bank, 2022). Reliable accounting records help bridge information gaps between entrepreneurs and financial institutions by enhancing the quality and trustworthiness of financial data available to lenders. This improvement enables more precise credit risk evaluations, promotes transparency, and is associated with the likelihood of obtaining formal financial services

(Demirgüç-Kunt et al., 2022; Bhattacharyya et al., 2023; World Bank, 2022; Healy & Palepu, 2001). Accordingly, tax incentives may encourage women entrepreneurs in the informal sector to formalise their businesses and adopt formal accounting practices. Through improved financial transparency, credibility, and record-keeping, formal accounting practices may serve as a mediating mechanism through which tax incentives contribute to financial inclusion among women entrepreneurs.

Theoretical Review

This study uses deterrence, institutional, and financial intermediation theories to explain formalisation, accounting, and financial inclusion among Nigerian women entrepreneurs in the informal sector.

Deterrence Theory and Compliance in the Informal Sector

Deterrence theory, based on economic rational-choice models, explains tax compliance as a cost–benefit decision. People tend to comply when the expected costs of evasion outweigh the benefits (Becker, 1968; Allingham & Sandmo, 1972; OECD, 2023). Compliance is influenced by enforcement, audit chances, and sanctions (Slemrod & Yitzhaki, 2002; OECD, 2023). Recent studies show that deterrence remains important but is more effective when combined with behavioural and institutional factors (Adom, 2026; Beer et al., 2022; Gangl & Hofmann, 2023; Alm, 2019). Entrepreneurs are more likely to comply with tax obligations and formalise activities when deterrence is strong, and the benefits of formalisation outweigh the remaining informal activities. Higher perceived detection risks and harsher sanctions raise costs of evasion, boosting compliance (Allingham & Sandmo, 1972; Slemrod & Yitzhaki, 2002; OECD, 2023). In informal economies, this effect weakens due to limited enforcement, weak systems, and institutional constraints that undermine the credibility of deterrence. Thus, compliance depends on economic factors, governance quality, institutional environment, and behavioural responses (Alm, 2019; Beer et al., 2022; Gangl & Hofmann, 2023). Despite its limitations, deterrence theory explains how tax incentives encourage women entrepreneurs in Nigeria's informal sector to formalise their businesses as they weigh the costs and benefits. Formalisation is more attractive when benefits outweigh costs (Becker, 1968; Allingham & Sandmo, 1972; Slemrod & Yitzhaki, 2002). However, evidence shows that tax incentives alone cannot sustain formalisation without strong enforcement and institutional support, such as better access to finance, markets, and services (Ulyssea, 2020).

Institutional Theory and Structural Influences on Informal Businesses

Institutional theory views economic behaviour as influenced by formal rules, norms, and regulations within a specific context (North, 1990; Scott, 2014). It suggests organisations mimic dominant expectations to gain legitimacy, resources, and sustainability (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Modern research highlights that securing legitimacy involves aligning with evolving institutional logics, standards, and societal expectations that shape organisational strategies (Thornton et al., 2012). Firms adopt formal accounting practices when required by key actors like governments and regulators. This aligns with efficiency and legitimacy, enhancing resource access, stakeholder confidence, and integration into the formal economy (DiMaggio & Powell, 1983; Scott, 2014). Recent studies show that organisations adjust their practices to meet evolving institutional pressures and remain competitive (Thornton et al., 2012). In many developing economies, weak regulation, limited government support, and low trust in public institutions hinder formalisation (North, 1990; Acemoglu & Robinson, 2012). These issues increase compliance costs and reduce benefits, discouraging businesses from formalising. Such institutional weaknesses still impede entrepreneurship, especially in low- and middle-income countries (World Bank, 2022). Women entrepreneurs

face additional challenges, such as limited access to information, finance, institutional support, and networks, which reduce their capacity to adopt formal accounting methods (Thapa Karki et al., 2021). Institutional theory explains why women entrepreneurs adopt formal accounting practices, citing institutional pressures and the pursuit of legitimacy within the broader regulatory and socio-economic context. Their compliance is influenced not only by efficiency but also by the need to meet regulatory requirements, satisfy stakeholders, and access resources associated with formal economic participation (Scott, 2014; Thornton et al., 2012).

Financial Intermediation Theory and Access to Finance for Informal Enterprises

Financial intermediation theory shows how financial institutions gather savings, reduce information gaps, and allocate funds efficiently (Levine, 1997; Allen et al., 2016). They handle adverse selection and moral hazard through screening, monitoring, and assessing borrowers' creditworthiness, risks, and financial data. Evidence indicates that thorough borrower evaluation is vital for enhancing financial inclusion, especially for micro, small, and women-owned businesses in developing countries (World Bank, 2022). The theory holds that access to finance primarily depends on accurate, verifiable financial data (Stiglitz & Weiss, 1981; Diamond, 1984; Healy & Palepu, 2001). When borrowers and lenders face information asymmetry, adverse selection and moral hazard can arise, prompting lenders to emphasise credible financial disclosures to assess creditworthiness. Consequently, entrepreneurs without formal financial records face substantial credit constraints due to reduced transparency and heightened perceived risk. Although some criticise financial intermediation theory for assuming efficient systems, especially in developing economies with shortcomings (Beck & Demirgüç-Kunt, 2006; Alesina et al., 2013), it remains relevant for understanding how formal accounting promotes financial inclusion. Reliable financial info reduces asymmetry, supports transparency, helps lenders assess risk, and allocates credit more efficiently. Formal reporting signals borrower credibility and aids access to financing, especially for firms moving from informal to formal systems (Bushman & Smith, 2001; Berger & Udell, 2006; La Porta et al., 1998). This study shows that, consistent with financial intermediation theory, women entrepreneurs who adopt formal accounting improve access to credit and financial services by enhancing data quality, transparency, and verifiability, thereby reducing informational asymmetries in lending. Better disclosure helps lenders assess risk accurately and boosts perceived creditworthiness, supporting greater financial inclusion (Demirgüç-Kunt et al., 2022).

Combined Overview of Theoretical Perspectives

The three theories suggest that no single factor determines women entrepreneurs' formalisation in Nigeria's informal sector. Instead, it results from multiple forces that align with integrated entrepreneurship and institutional perspectives (Scott, 2014; Thornton et al., 2012). Deterrence theory views formalisation as a rational decision based on enforcement and risks, while institutional theory highlights regulation and legitimacy. Financial intermediation theory stresses the importance of information quality for credit access. These views show that formalisation is complex, driven by economic motives, institutions, and the needs of the financial system. Women entrepreneurs use formal accounting primarily to comply with regulations, gain legitimacy, and enhance financial credibility to secure funding.

This study is anchored on deterrence theory, institutional theory, and financial intermediation theory (Becker, 1968; Allingham & Sandmo, 1972; North, 1990; Scott, 2014; Stiglitz & Weiss, 1981; Levine, 1997). These theories jointly explain formalisation behaviour, accounting practices, and financial inclusion among women entrepreneurs in Nigeria's informal sector.

Together, these theories provide an integrated explanation of how tax incentives influence formalisation decisions, how institutional pressures encourage formal accounting practices, and how accounting information facilitates access to financial services among women entrepreneurs in the informal sector (North, 1990; Scott, 2014; Demirgüç-Kunt et al., 2018). Economic deterrence and rational choice models are adopted to describe the relationship between tax incentives and compliance. The models provide insight into how compliance with tax laws depends on weighing the likelihood of detection against the gains from evasion (Becker, 1968; Allingham & Sandmo, 1972). By implication, therefore, compliance is seen as a rational choice determined by enforcement levels (Slemrod & Yitzhaki, 2002). Put into perspective, entrepreneurs are more likely to comply when the costs of evasion outweigh the benefits. However, these assumptions do not always apply in informal-sector environments (Frey & Torgler, 2007; Luttmer & Singhal, 2014). While deterrence theory helps explain how tax incentives influence the costs and benefits of formalisation, it provides only a limited explanation of how entrepreneurs in informal settings respond to such incentives (Slemrod & Yitzhaki, 2002). Deterrence theory explains how economic incentives influence the decisions to formalise businesses (Slemrod & Yitzhaki, 2002; North, 1990). Deterrence theory remains relevant here as it explains how individuals respond to incentives through rational calculations of costs and benefits (Becker, 1968; Slemrod & Yitzhaki, 2002). Decisions to formalise a business depend on weighing expected benefits against perceived costs (Becker, 1968; Allingham & Sandmo, 1972; Slemrod & Yitzhaki, 2002). In this study, deterrence theory mainly explains how tax incentives influence formalisation and compliance choices among women entrepreneurs in Nigeria's informal sector (Allingham & Sandmo, 1972; Slemrod & Yitzhaki, 2002; Ulyssea, 2020).

Institutional theory argues that economic behaviour is influenced by broader systems of rules, social norms, and regulations (North, 1990; Scott, 2014). The theory explains that organisations conform to the expectations of regulators and financial institutions to secure legitimacy (DiMaggio & Powell, 1983; North, 1990; Scott, 2014; Thornton et al., 2012; Meyer & Bromley, 2023). Thus, companies are more inclined to adopt bookkeeping, financial reporting, and documentation practices when these are demanded or anticipated by external stakeholders such as the state, creditors, and trading partners (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Thornton et al., 2012; Meyer & Bromley, 2023). In this study, institutional theory explains the adoption of formal accounting practices, as compliance with reporting and documentation standards often aims to gain legitimacy and access to opportunities in the formal economy. Existing research shows that many developing countries have institutional environments characterised by weak enforcement, limited support, and low public trust, all of which hinder economic activity and firm growth (North, 1990; Acemoglu & Robinson, 2012; La Porta et al., 1998). These conditions reduce the benefits of formalisation, discouraging firms from moving into the formal sector (North, 1990; La Porta & Shleifer, 2014; Besley & Persson, 2013). Firms often lack the motivation to adopt formal practices because the advantages of compliance are often uncertain or minimal (North, 1990; La Porta & Shleifer, 2014; Besley & Persson, 2013; Olken & Pande, 2012). Women entrepreneurs in the informal sector may face especially tough constraints, including limited access to information, business networks, and formal institutions. These institutional factors can impact their decision to formalise and their readiness to adopt formal accounting practices.

The financial intermediation framework holds that financial institutions mobilise savings from those who do not have immediate use for them and allocate credit to those in need of funds for economic purposes. These institutions assess risk, information asymmetries, and borrowers' creditworthiness before making funds available (Levine, 1997; Allen et al., 2016;

World Bank, 2022; Demirgüç-Kunt et al., 2022). It emphasises that accurate, verifiable information about borrowers is crucial for accessing formal financial services (Stiglitz & Weiss, 1981; Diamond, 1984; Healy & Palepu, 2001). Financial intermediation theory has been criticised for assuming that financial systems operate efficiently and neutrally (Stiglitz & Weiss, 1981; Beck & Demirgüç-Kunt, 2006; Alesina et al., 2013; World Bank, 2022; Demirgüç-Kunt et al., 2022). Despite this criticism, the theory remains valuable for explaining how formal accounting practices facilitate access to finance (Bushman & Smith, 2001; Berger & Udell, 2006). Formalising businesses can enhance firms' visibility and credibility and improve their ability to meet the information standards of formal lenders (Beck et al., 2005; La Porta et al., 1998). Thus, financial intermediation theory offers the theoretical foundation for how formal accounting practices can enhance financial inclusion by decreasing information asymmetry and improving lenders' ability to assess creditworthiness. Taken together, the three theoretical insights make it clear that formalising informal women-owned businesses is not driven solely by economic incentives. Instead, it stems from the interplay of cost–benefit considerations, institutional contexts, and access to financial systems.

Empirical Review

Tax Incentives and Entrepreneurial Formalisation

Recent studies show that tax incentives are vital for promoting business formalisation and are influenced by institutional quality, regulatory efficiency, and perceived benefits. A meta-analysis of 170 impact estimates from 38 studies finds that tax incentives, simplified registration, and awareness campaigns boost formalisation, especially when combined with institutional reforms (Jessen & Kluve, 2021). Reforms tackling multiple constraints at once are more effective than isolated actions. Jessen and Kluve (2021) show that tax simplification, registration reforms, and information campaigns are more effective when combined with broader institutional measures. OECD (2023) notes that reducing compliance costs alone is insufficient without improved access to finance and greater institutional trust. Gaarder and van Doorn (2021) cite high perceived costs as a major reason informal firms avoid formalisation, while the ILO (2018) stresses the need for tailored registration and tax systems for micro and small enterprises. Evidence from Nigeria shows that high compliance costs, complex procedures, weak administration, and low trust reduce SME formalisation (Falana et al.,2024; Beer et al., 2022). Ojo and Shittu (2023) find similar issues with Value Added Tax (VAT). Overall, tax complexity and weak institutions hinder formalisation, but reforms combining simplification, transparency, and financial access are more effective. Evidence from low- and middle-income countries shows that administrative burdens, taxation, and limited awareness hinder formalisation (ILO, 2018; OECD, 2023). Entrepreneurs see benefits such as access to finance and markets, but often lack support with registration (ILO, 2018; World Bank, 2022).

In Nigeria, Adom (2026) finds that financial constraints, taxation, regulation, and enforcement affect formalisation, with integrated policies outperforming isolated tax reforms. Financial constraints limit access to finance, discouraging formal registration among productive firms. Tax incentives work better with simplified procedures, enforcement, improved access to finance, and post-registration benefits (Jessen & Kluve, 2021; OECD, 2023; World Bank, 2022). Weak governance, multiple taxes, and limited support reduce effectiveness in developing economies (ILO, 2018; OECD, 2023). Reforms that boost trust, compliance, and financial access yield stronger outcomes. Bruhn and McKenzie (2014) show that registration reforms alone are not enough without access to credit and markets. Evidence indicates that integrated reforms are more effective than fragmented ones.

Accounting Practices and Entrepreneurial Formalisation

Accounting practices are central to SME performance, transparency, and sustainability. Reliable bookkeeping improves financial outcomes by reducing information gaps, aiding decision-making, and increasing access to finance. Ciza et al. (2025) show that accounting information boosts SME performance directly by increasing access to banks, building lenders' trust, and enhancing market participation. Similarly, Palacín-Sánchez et al. (2022) find that bookkeeping improves SME performance, with owners' accounting skills mediating financial planning and decisions. Palacín-Sánchez et al. (2022) show that high-quality financial reporting reduces information asymmetry and improves access to trade credit. Many other studies also indicate that accounting systems go beyond compliance, enhancing transparency, financial management, and trust, thus boosting access to finance and sustainability (Hamid et al., 2023; Falana et al., 2024; Ciza et al., 2025; Palacín-Sánchez et al., 2022). In Nigeria, Afo and Kim (2022) and Ojo and Shittu (2023) find that poor record-keeping and high compliance costs reduce tax compliance and discourage participation in the formal sector. In Sub-Saharan Africa, better-bookkeeping SMEs perform better, are more disciplined, and have easier access to credit (Ciza et al., 2025; Palacín-Sánchez et al., 2022). These outcomes depend on financial literacy, accounting skills, and digital capability. Reports by OECD (2023) and the World Bank (2022) highlight gaps in these skills among micro and small enterprises, which limit the effectiveness of accounting systems in supporting formalisation.

Financial Inclusion and Entrepreneurial Formalisation

Financial inclusion boosts entrepreneurial growth by expanding access to credit, savings, and digital financial services. Demirgüç-Kunt et al. (2022) find that access to financial accounts and digital payments enhances resilience and economic participation. Evidence further shows that financial inclusion promotes entrepreneurship by expanding access to productive finance, rather than merely increasing access to financial services (Adegbite & Machethe, 2020; Ozili & Mhlanga, 2024; Omotubora, 2024; Hassan &Utulu, 2022). Institutional quality strengthens this relationship (World Bank, 2022; OECD, 2023), while financial literacy enhances entrepreneurs' ability to use financial services effectively (Zogning, 2023). Financial inclusion is most effective when combined with financial literacy, supportive institutions, and regulatory improvements (Omotubora, 2024; World Bank, 2022; OECD, 2023). Expanding access alone is insufficient without capabilities that support investment and formalisation. Evidence shows it improves resilience, savings, and market participation (Demirgüç-Kunt et al., 2022; OECD, 2023; World Bank, 2022), especially where literacy and institutional quality are high (Hasan et al., 2023; Lyons & Kass-Hanna, 2021). Gains are greatest with financial education and supportive environments enabling investment (Koomson & Danquah, 2022)

Financial inclusion promotes formalisation by enhancing access to finance and stronger financial records (Demirgüç-Kunt et al., 2022; Zins & Weill, 2016). Its success depends on institutional and financial capabilities (OECD, 2023; World Bank, 2022). Women entrepreneurs face constraints such as limited collateral, digital exclusion, and weak financial literacy (Demirgüç-Kunt et al., 2022; Ahmed et al., 2023), and limited awareness of financial programmes often hampers their inclusion (ILO, 2018).

3. Methodology

This study used a quantitative survey approach to explore how tax incentives and formal accounting practices influence financial inclusion among women entrepreneurs in Nigeria's informal sector. This method was suitable because it focused on primary data collected at a specific point in time, aiming to identify patterns, relationships, and perceptions regarding taxation, accounting practices, and financial inclusion. The cross-sectional design effectively provided empirical insights from a sample of women entrepreneurs without altering any

variables. The study area was the Southwest geopolitical zone of Nigeria, comprising Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti States. The choice of the Southwest was justified on both economic and practical grounds. Economically, the zone is one of the most commercially active regions in Nigeria, with a high concentration of micro, small, and informal enterprises in trading, food processing, fashion, personal services, and other women-dominated entrepreneurial activities. The region also provides useful context for the study because it combines relatively high exposure to financial institutions, government tax structures, and business registration systems with the persistence of large informal businesses.

The target population comprised women entrepreneurs operating in the informal sector in Nigeria's Southwest geopolitical zone. This included women engaged in unincorporated or loosely organised business activities such as petty trading, food vending, tailoring, hairdressing, artisan work, and related small-scale enterprises. The sampling frame comprised identifiable women entrepreneurs operating in major markets, trading clusters, roadside business locations, and local enterprise hubs within selected states in the Southwest. Because informal sector operators are not always captured in complete official registers, the sampling frame was constructed from accessible concentrations of women-owned informal businesses in these commercial locations. The study employed a multi-stage sampling technique. First, the Southwest geopolitical zone was purposively selected for its high concentration of informal commercial activities and the strong presence of women entrepreneurs. Second, states and major business clusters within the zone were selected to ensure coverage of areas with significant informal-sector participation. Third, respondents were selected from these markets and enterprise locations using a convenience and purposive approach, based on their availability and eligibility as women entrepreneurs in the informal sector. This approach was appropriate because the informal sector is difficult to enumerate fully, and many operators are outside formal business registers, making probability-based selection challenging.

The study sample comprised 281 valid respondents out of 400 questionnaires administered, representing a 70% response rate. This sample size was considered adequate for a survey-based study of this nature because it provided sufficient observations for descriptive analysis and chi-square estimation of associations among the variables of interest. The final sample used in the analysis comprised only properly completed questionnaires, thereby ensuring consistency in the reported results. Data were collected using a structured questionnaire designed to elicit information on demographic characteristics, awareness of and access to tax incentives, registration status, access to financial services, financial inclusion, formal accounting practices, and awareness of recent tax reforms. The instrument was structured primarily as closed-ended items to promote uniformity in responses and facilitate coding and quantitative analysis.

Model Specification

The study was based on the assumption that financial inclusion among women entrepreneurs in the informal sector is influenced by tax-related factors, formalisation, accounting practices, and access to financial services. In line with this, the functional relationship for the study can be expressed as:

$$FI = f(TIA, ATI, REG, AFS, FAP, ATR, PTR, X)$$

For estimation purposes, the conceptual model may be stated in explicit form as:

$$FI_i = \beta_0 + \beta_i TIA_i + \beta_2 ATI_i + \beta_3 REG_i + \beta_4 AFS_i + \beta_5 FAP_i + \beta_6 ATR_i + \beta_7 PTR_i + X_i + \varepsilon_i$$

Where:
FI = Financial Inclusion
TIA = Tax Incentive Awareness
ATI = Accessibility of Tax Incentives
REG = Business Registration Status
AFS = Access to Financial Services
FAP = Formal Accounting Practices
ATR = Awareness of Tax Reform
PTR = Perception of Tax Reform Impact
X = Vector of demographic characteristics such as age, education, type of business, and duration of business operation.

Estimation Techniques

The data collected were analysed using both descriptive and inferential statistical techniques. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarise the demographic characteristics of respondents and to describe levels of awareness, access, and perceptions relating to the key study variables. This approach provided a clear profile of the respondents and allowed the study to present the distributional patterns observed in the data. To examine the relationships between the categorical variables, the study employed the Pearson chi-square test of independence. This technique was appropriate because the major variables analysed in the results section were measured in categorical or ordinal form, and the intention was to establish if a statistically significant relationship exists between them. Specifically, the chi-square test was used to assess the association between business registration and access to tax incentives; between access to financial services and financial inclusion; between formal accounting practices and financial inclusion; and between awareness of tax reforms and perceptions of their impact on business.

4. Results and Discussion

Outcomes of the analysis of data gathered from a survey of women entrepreneurs operating in Nigeria's informal sector are presented and discussed in this section. The results obtained were interpreted in light of the study's objective of assessing the role of tax incentives and formal accounting practices in improving financial inclusion among women entrepreneurs.

Demographic Characteristics of Respondents

The outcome of the analysis of respondents' characteristics is presented in Table 1. The analysis, based on 281 valid observations, provided a sufficiently robust sample for examining issues relating to women entrepreneurship and financial inclusion in the informal sector.

Table 1: Demographic Characteristics of the Respondents

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	281	2.174377	1.384165	1	5
Highest Education Completed	281	3.291815	1.149645	1	5
Marital Status	281	1.608541	0.75342	1	4
Type of Businesses	281	2.085409	1.133815	1	5
Duration of Business Operation	281	2.270463	1.020233	1	4

Source: Authors, 2026.

In Table 1, the mean age is 2.17, with a standard deviation of 1.38, indicating that a large percentage of the respondents in this study fall within the 26–35 age range. This indicates that the majority of women engaged in informal entrepreneurial activities are of working age, supporting the ILO's (2018) observation that women in developing economies frequently rely on informal entrepreneurship as their primary source of livelihood. The highest level of education attained is B.Sc./HND, with a mean of 3.29 and a standard deviation of 1.15. Marital status has a mean of 1.61, indicating that a large proportion of respondents are married. Marital status may influence access to resources, risk-taking behaviour, and household financial decision-making, which in turn may affect business growth and access to financial services. With respect to business characteristics, the type of business recorded a mean value of 2.09, indicating diversity in the sectors in which women entrepreneurs operate. The mean duration of business operation is 2.27, suggesting that many respondents have been engaged in business activities for a moderate period, implying some level of entrepreneurial experience and business stability.

Awareness of Tax Incentives among Women Entrepreneurs

The results of the analysis of awareness of tax incentives available to women entrepreneurs in the informal sector are presented in Table 2.

Table 2: Tax Incentives of Women Entrepreneurs

Variable	Obs	Mean	Std. Dev.	Min	Max
Awareness of Tax Incentives or Exemptions available to informal businesses	281	1.512456	0.500737	1	2
	Obs	**Mean**	**Std. Dev.**	**Min**	**Max**
Tax Holidays (Temporary Exemptions)	281	0.227758	0.420134	0	1
Reduced Tax Rate for small women-owned Businesses	281	0.380783	0.486446	0	1
Exemptions from certain levies	281	0.120996	0.326705	0	1
VAT Exemptions	281	0.124555	0.330803	0	1

Source: Authors, 2026

The mean score reported by respondents aware of tax incentives or exemptions for informal businesses is 1.51, indicating that many respondents are either unaware of these incentives or only minimally aware. Further analysis of specific tax incentives shows that awareness remains limited across various incentive types. About 22.8% of these respondents were aware of tax holidays, while 38.1% were aware of reduced tax rates for small women-owned businesses. Awareness of exemptions from certain levies and VAT exemptions is particularly low, with approximately 12.1% and 12.5% of respondents, respectively, reporting awareness. The findings suggest that although tax incentives are designed to support small and informal enterprises, particularly women-owned businesses, their effectiveness may therefore be constrained by low awareness among potential beneficiaries. Tax incentives can achieve their intended objectives only when targeted beneficiaries have sufficient knowledge of their availability and eligibility requirements (Kleven et al., 2011; Slemrod, 2007; Luttmer & Singhal, 2014; OECD, 2021). Therefore, low awareness might have been limiting women entrepreneurs' ability to benefit from government initiatives aimed at promoting business formalisation and financial inclusion. This highlights the need for improved information dissemination strategies and targeted sensitisation programs for informal-sector entrepreneurs.

Accessibility of Tax Incentives in the Informal Sector

Table 3 presents the outcome of the examination of the relationship between business registration with tax authorities and the availability of tax incentives.

Table 3: Tax Incentives of Women Entrepreneurs in the Informal Sector

Accessibility of tax incentives for women entrepreneurs in the informal sector	Is your business registered with any Tax authority?		
	Yes	**No**	**Total**
Not Accessible	25	81	106
	23.58	76.42	100
	36.23	38.21	37.72
Slightly Accessible	6	49	55
	10.91	89.09	100
	8.7	23.11	19.57
Neutral	24	34	58
	41.38	58.62	100
	34.78	16.04	20.64
Accessible	12	30	42
	28.57	71.43	100
	17.39	14.15	14.95
Very Accessible	2	18	20
	10	90	100
	2.9	8.49	7.12
Total	69	212	281
	24.56	75.44	100
	100	100	100
	Pearson	chi2(4)=17.097	Pr=0.002

Source: Authors, 2026

The analysis reveals that the majority of respondents (75.44%) reported that their businesses are not registered with any tax authority, while only 24.56% reported that their businesses are registered. Among respondents who reported that tax incentives are inaccessible, 76.42% operate unregistered businesses, while approximately 24% manage registered businesses. Similarly, among those who reported that tax incentives are slightly accessible, the majority (89.09%) are unregistered. Conversely, the proportion of registered businesses is linked to the proportion of respondents who perceive tax incentives to be accessible or very accessible. The Pearson chi-square statistic (χ^2 = 17.097, p = 0.002) indicates a statistically significant association between access to tax incentives for women entrepreneurs in the informal sector and business registration. This suggests that the level of informality among women entrepreneurs may constrain their access to tax incentives. This insight aligns with Malta et al. (2019), who view that informality creates structural barriers to policy implementation. Consequently, encouraging formalisation through simplified registration processes may improve women entrepreneurs' access to tax incentives and other financial opportunities (La Porta & Shleifer, 2014; Ulyssea, 2018; McKenzie & Woodruff, 2017; World Bank, 2022).

Access to Financial Services and Financial Inclusion

Table 4 explores the relationship between access to financial services and financial inclusion among women entrepreneurs. The results demonstrate a strong relationship between these variables.

Table 4: Access to Financial Services and Financial Inclusion of Women Entrepreneurs in the Informal Sector

Overall Access to financial services	Financially included in Nigeria's current business environment					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Very Good	39	25	5	3	2	74
	52.7	33.78	6.76	4.05	2.7	100
	53.42	27.47	6.67	9.68	18.18	26.33
Good	21	33	30	7	0	91
	23.08	36.26	32.97	7.69	0	100
	28.77	36.26	40	22.58	0	32.38
Fair	10	20	31	16	2	79
	12.66	25.32	39.24	20.25	2.53	100
	13.7	21.98	41.33	51.61	18.18	28.11
Poor	1	11	8	2	2	24
	4.17	45.83	33.33	8.33	8.33	100
	1.37	12.09	10.67	6.45	18.18	8.54
	Pearson	Chi2(3) = 111.555	Pr = 0.000			

Source: Authors, 2026

Among respondents who reported very good access to financial services, 52.7% strongly agree, and 33.78% agree that they are financially included in the current business environment. In contrast, respondents who reported poor or very poor access to financial services are less likely to perceive themselves as financially included. Among those reporting very poor access to financial services, a considerable proportion either disagreed or strongly disagreed with the statement that they are financially included. The Pearson chi-square statistic ($\chi^2 = 111.555$, $p = 0.000$) demonstrates a significant link between access to financial services and financial inclusion. This supports the view that better access to banking, credit, and financial products is essential for enhancing financial inclusion among women entrepreneurs. The finding supports the Central Bank of Nigeria's (2020) conclusion that access to formal financial services is a crucial factor in achieving financial inclusion in Nigeria (Allen et al., 2016; Kim et al., 2018). Limited access to financial institutions, credit facilities, and savings instruments is, therefore, a major constraint for women entrepreneurs in the informal sector.

Analysis of the Role of Formal Accounting Practices in Financial Inclusion

Table 5 examines how formal accounting practices contribute to financial inclusion. Specifically, it investigates whether maintaining formal financial records is linked to the likelihood of accessing tax incentives or other financial support.

Table 5: Tax Incentives, Formal Accounting Practices and Financial Inclusion of Women Entrepreneurs in Nigeria's Informal Sector.

	Financially included in Nigeria's current business environment.					
Keeping formal records is linked to the chances of accessing tax incentives/ financial support	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Yes	55	55	37	15	5	167
	32.93	32.93	22.16	8.98	2.99	100
	75.34	60.44	49.33	48.39	45.45	59.43
No	7	17	7	2	1	34
	20.59	50	20.59	5.88	2.94	100
	9.59	18.68	9.33	6.45	9.09	12.1
Not Sure	11	19	31	14	5	80
	13.75	23.75	38.75	17.5	6.25	100
	15.07	20.88	41.33	45.16	45.45	28.47
Total	73	91	75	31	11	281
	25.98	32.38	26.69	11.03	3.91	100
	100	100	100	100	100	100
	Pearson	chi2(8)=25.376	Pr=0.001			

Source: Authors, 2026

The results show that 59.43% of respondents believe that maintaining formal records is linked to the likelihood of accessing financial support or tax incentives. Within this group, 32.93% strongly agree, while only 12.1% of respondents believe that keeping formal records may not increase their chances of accessing financial support.

The reported chi-square test statistic ($\chi^2 = 25.376$, $p = 0.001$) indicates a significant association between financial inclusion and formal accounting practices. This suggests that effective record-keeping enhances business transparency and accountability, both of which are key factors that financial institutions and government agencies consider when providing financial support. The finding aligns with existing literature emphasising that proper financial record-keeping improves small businesses' ability to demonstrate financial performance. Financial institutions often require reliable financial records before extending credit to small enterprises (Bushman & Smith, 2001; Healy & Palepu, 2001; Minnis, 2011; Ciza et al., 2025). Therefore, promoting basic accounting practices among women entrepreneurs may significantly enhance their access to formal financial services.

Perceptions of the Recent Tax Reforms

Results presented in Table 6 summarise the analysis of respondents' awareness of recent tax reforms and their perceptions of the impact of these reforms on their businesses.

Table 6: Perception of the New Tax Reforms

Awareness of the tax reforms in Nigeria	Reforms will affect my business positively			
	Yes	**No**	**Not Sure**	**Total**
Yes	49	56	43	148
	33.11	37.84	29.05	100

	66.22	62.92	36.44	52.67
No	25	33	75	133
	18.8	24.81	56.39	100
	33.78	37.08	63.56	47.33
Total	74	89	118	281
	26.33	31.67	41.99	100
	100	100	100	100
	Pearson	chi2(2)=21.6666	Pr=0.0000	

Source: Authors, 2026

The results indicate that 52.67% of respondents are aware of tax reforms in Nigeria, while 47.33% are not. However, perceptions of the impact of these reforms appear mixed. About 33.11% of respondents who are aware of the reforms believe they will have a positive impact on their businesses, while 37.84% believe they will not. About 29.05% of respondents are uncertain about the impact of the reforms on their business operations. The chi-square test results (χ^2 = 21.6666, p = 0.000) indicate a significant association between awareness of Nigeria's recent tax reforms and perceptions of their impact on businesses. This suggests that awareness plays a key role in shaping entrepreneurs' expectations of policy outcomes. The relatively high level of uncertainty among respondents suggests that many women entrepreneurs may not fully understand the implications of the tax reforms for their businesses. This underscores the importance of policy communication and stakeholder engagement to ensure that informal sector operators clearly understand the reforms.

Discussion of Findings

The study examined how tax incentives, accounting practices, and financial inclusion relate among women entrepreneurs in Nigeria's informal sector. It found significant links among these variables, discussed in relation to the study's goal. Women entrepreneurs have limited awareness of tax incentives, and a business's registration status affects access. Formal registration increases the likelihood of benefiting from incentives, while informal businesses are less likely to report access. This shows a structural link between registration and policy access. Financial inclusion is linked to access to financial services. Women with better access to banking are more likely to feel financially included, while those with limited access feel less included. This shows a clear link between service availability and inclusion.

The findings show a strong link between accounting practices and access to financial or tax benefits. Women entrepreneurs with formal accounting records report easier access to financial support than those without, indicating that organised financial records boost participation in formal financial and tax systems. Results show that in Nigeria's informal sector, tax incentives, accounting practices, and financial inclusion are connected for women entrepreneurs. Registering a business is linked to tax incentives, financial services relate to inclusion, and accounting practices facilitate access to financial support. The analysis only shows correlations, not causation. Findings support the link between fiscal awareness, financial access, and record-keeping, aligning with the chi-square analysis.

5. Conclusion and Recommendations

This study shows that financial inclusion among women entrepreneurs in Nigeria's informal sector depends not only on supportive tax policies but also on their awareness, access to financial services, and willingness to adopt formal practices. Low awareness of incentives, business informality, and weak accounting hinder their ability to benefit from government

and financial opportunities. The links between business registration, access to incentives, financial services, and record-keeping highlight that formalisation and financial literacy are key. The study concludes that tax incentives alone are insufficient; improving policy awareness, formalisation, access to finance, and simple accounting practices are essential for meaningful inclusion.

Government agencies and tax authorities should bolster awareness campaigns on tax incentives and exemptions for small, informal, women-owned businesses through localised, market-focused sensitisation programmes, as many respondents reported limited knowledge, suggesting poor communication of the benefits. The study also recommends that registration and tax procedures for women in the informal sector be simplified, since registered businesses are more likely to benefit them. In addition, policymakers and financial institutions should expand affordable, inclusive financial services such as microcredit, savings, mobile banking, and low-barrier products for small-scale, informal businesses with limited collateral and irregular income to enhance financial inclusion. Women entrepreneurs should learn practical, low-cost bookkeeping. Clearer communication and stakeholder engagement on tax reforms are crucial, with targeted education, clarification sessions, and outreach to help women understand the reforms' relevance and benefits.

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