

Review

# Industry 4.0 in Financial Services: Mobile Money Taxes, Revenue Mobilisation, Financial Inclusion, and the Realisation of Sustainable Development Goals (SDGs) in Africa

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**Abstract:** The use of mobile phones is a global phenomenon that provides developing countries with novel opportunities to enhance economic growth and facilitate improvement in the welfare of citizens. Governments have introduced mobile money taxes to improve tax revenue generation. This has been met with criticism by the public, media, and businesses on the basis that they hinder financial inclusion, constrain economic growth, and impede the attainment of some of the 2030 sustainable development goals, such as reduction in poverty, minimising inequality, building strong institutions, and providing decent work. Through a comprehensive critical review of literature, this study discusses mobile money taxes and their effects on revenue mobilisation, financial inclusion, and the attainment of the 2030 sustainable development goals. The findings reveal mixed opinions. While some scholars argued that mobile money taxes were instrumental in improving revenue generation, tax compliance, and reducing tax administration and compliance costs, some suggested otherwise, pointing out their negative impact. The unfavourable externalities include reduced financial inclusion, affordability challenges, reduction in usage of mobile money platforms, increased poverty and inequality, and ultimately the non-achievement of SDGs. The study contributes to the theoretical literature on the body of taxation and financial inclusion. It also gives insights to policymakers regarding likely implications of mobile money taxes.

**Keywords:** mobile money; financial inclusion; revenue mobilisation; economic development; taxes



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## 1. Introduction

Mobile money services' development in emerging markets and developing countries such as Rwanda, Burundi, Tanzania, Kenya, and Zimbabwe have fundamental implications for financial inclusion of vulnerable groups. This is affirmed by the Global System for Mobile Communications Association (GSMA) [1] which states "For developing countries, mobile money has enabled a "leapfrog" in financial infrastructure by passing antiquated payment systems and putting financial services into the hands of those previously excluded". Mobile money addresses information asymmetry and increases revenue mobilisation. Mobile money use has grown tremendously in Africa as a palliative rejoinder to the COVID-19-induced transacting challenges. The importance of mobile money in developing countries is indisputable. GSMA [1] and Ndung'u [2] table eight reasons why mobile money is critical to these countries. These are (1) expanding financial inclusion, (2) driving economic growth, contributing to economic development, and boosting productivity, (3) promoting transfers, savings, withdrawals, and access to credit, (4) enhancing tax collection, thus improving domestic revenue mobilisation through improving tax administration efficiency, reduction in corruption, improved compliance, and thus broadening the tax base, (5) promoting formalisation by allowing access to formal financing and services for the informal economy, (6) improving the effectiveness of public service delivery, (7) poverty reduction, (8) reducing the cost of international remittances, and (9) solidifying monetary policy.

Mobile money transactions have grown exponentially across the African continent over the past decade. These continue to expand in reach and volume. The question is, what are the implications of taxing or not taxing these transactions for domestic revenue mobilisation in the African continent? According to Karombo [3] and GSMA [1], in 2020 mobile money transactions were approximated at about 27.5 billion in volume, and their value soared by over 23% to USD 495 billion in value by the end of the year 2020. The expansion could be linked to the COVID-19 pandemic. During the crisis, revenue generation from taxes, exports, and tourism activities declined between the years 2020 and 2021. Economic activity shrunk due to the pandemic and responsive measures such as lockdowns, closure of companies, remote working, and social distancing requirements as well as travel bans. Mobile money taxes provide a reprieve for the post-pandemic reconstruction expenditure and an opportunity for widening the tax bases and an arm to tax the informal sector in its informal status without formalising it. The COVID-19 pandemic led not only to a decline in tax revenues, but a fall in prices of commodities, especially minerals, which most developing countries trade as resources were devoted to fighting the scourge, and production declined [4]. This loss of income led to a remarkable loss in revenues to finance public expenditure. Collaborative efforts are needed between tax practitioners, governments, and tax administrators in avenues to boost tax revenue mobilisation, enhance economic development, and close the gap opened by the reduction in aid due to COVID-19 challenges that affected both developed and developing countries. Taxation of mobile money is more critical than ever after the COVID-19 pandemic because of the heightened dependence on digital services and mobile money [5,6].

With the declining commodity prices, increases in international debts, reductions in tax revenues, and the expansion of the digital economy, African countries are under domestic and international stress to mobilise more revenue to finance public expenditure and honour their debt obligations, respectively. What drives the proposals or implementation of mobile money taxes in Africa? What could be the negative externalities or implications of implementing mobile money taxes? The challenges of domestic revenue mobilisation in African countries are compounded by a burgeoning informal economy and weaknesses in tax administration capacity as well as tax policy weaknesses. Mobile money taxation (and digital financial services (DFSs) in general) and financial inclusion are viewed as developmental problems for Africa. The former affects revenue generation, and the latter is a matter of the realisation of the SDGs [7]. In concurrence, Pushkareva [8] avows “DFS present a unique opportunity for ensuring sustainable growth of SSA countries. Arguably, taxing the DFS provides SSA with additional revenue to which to eliminate extreme poverty and improve gender balance”.

In pursuance of understanding the rationale for introducing mobile money taxes and the possibility of unanticipated outcomes emerging from mobile money tax policy implementation that could possibly affect the marginalised or previously underserved segment of the population, perpetuate inequalities, and constrain the fulfilment of SDGs, this paper critically explores the literature on mobile money taxation in Africa.

Mobile communication has grown tremendously in the African continent to incorporate into formal the financial services channels the previously unserved or underserved (financially excluded) constituent of the population regardless of their failure to access physical financial institutions. Mobile money platforms such as orange money in Botswana, Ecocash in Zimbabwe, and M-Pesa in Kenya, among others, contributed considerably to ensuring that the previously financial excluded can financially transact, make payments, borrow, and save, thus addressing affordability and access concerns. Africa is arguably the leader in mobile money usage [9,10]. Considering this argument, and the novel and contentious nature of mobile money taxes and their possible negative implications considering tax are a cost that can either be passed on to consumers or absorbed by businesses, such a study is crucial in the African context. The study makes two important contributions. Firstly, to the theoretical body of knowledge on taxation of mobile money, financial inclusion, and the attainment of SDGs. There is a dearth of literature linking mobile money

taxes to financial inclusion and the attainment of SDGs. Secondly, to policy construction by unpacking the role of mobile money and highlighting possible negative externalities that can arise from taxation. Domestic revenue mobilisation and the widening of the tax base form fundamental objectives of African governments, and mobile money taxes can provide an ideal tax base but with potential unwanted repercussions. This article would help inform mobile money tax policy initiatives and amendments by unpacking the likely unintended consequences, such as the likelihood of market distortions increasing, potential for increased tax evasion, and overreliance on cash transactions, thus affecting revenue mobilisation and financial inclusion if the mobile money transactions are overtaxed.

## 2. Literature Review

This section reviews related literature to give a contextual background for the review. The section discusses the literature on industry 4.0 in the financial sector as mobile money is part of the digital financial services sector. The sector also delves into mobile money taxes in Africa, elaborating on their structure, motives for their implementation, and criticism with respect to their formulation, structure, and multiplicity when combined with other taxes levied on the telecoms sector.

### 2.1. Industry 4.0 in the Financial Services Sector in Africa

The expansion of the digital economy globally and in Africa must be understood in the ambience of the fourth industrial revolution (4IR). The 4IR is founded on the utilisation of technology, digitisation of processes, and the digital transformation of business processes and other aspects of the economy. In relation to the financial services sector, digital transformation entails the provision of digital financial services [11,12]. These services are obtained and delivered through digital platforms and mobile devices. These include debit cards, credit cards, and cell phone banking. These services also cover new designs built on cloud computing, such as digital platforms, mobile payments, and crypto assets. These are commonly described as Fintech [13]. These services include mobile money, which is the focus of this article. Mobile money utilisation provides financial services in Africa to the traditionally unbanked segments of the populations, thus bringing them into the regular financial system. This heightens the likelihood of savings mobilisation for the financially deprived, those in the informal economy, and the poverty-stricken [14].

### 2.2. Mobile Money Usage, Financial Inclusion, and the Achievement of SDGs in Africa

The use of mobile money in Africa has grown tremendously from the time of its inception around 2002 in Kenya, 2009 in Ghana, and 2011 in Zimbabwe, among other early adopters. It covers the greater part of the continent. The widening of mobile money financial services in Africa has enabled millions of people who were financially excluded to conduct financial transactions in a relatively affordable, safe, and reliable way [15]. The transformative power of mobile technology has heightened financial inclusion in Africa, financial inclusion being defined as the delivery of affordable, accessible, reliable, and quality financial services to all groups of the population, including the vulnerable, such as the poor, low-income earners, girls and women, the youth, and the informal sector, as well as vendors. According to Tan [16], Sub-Saharan Africa (SSA) constitutes about 50% of the approximately 350 million mobile money accounts in the world. In 2021, an estimated USD 1 trillion in global transaction was obtained using mobile money platforms, and 70% of this figure is attributed to SSA. The researcher further states that in 2021, SSA accounted for 435 of all new mobile accounts globally. In the same year, SSA's mobile money transactions expanded by 40% when compared to the global average estimated at 31% [16]. Africa is in its early stages of digital financial inclusion, and mobile taxes could be fiscally inequitable and be a hindrance to financial inclusion if not properly designed.

Digital technologies such as mobile money are making it relatively inexpensive to process large volumes of small transactions and to deliver an array of financial services in areas where infrastructure is poor or non-existent. Businesses and individuals can

now invest money, transfer, and receive money, make purchases and payments, check balances, and make savings in the comfort of their homes, even those in remote areas. Owing to the huge number of mobile money users and the lack of comprehensive brick-and-mortar bank networking, mobile money could be seen as a game changer for financial inclusion. Mobile money is greatly used in SSA countries such as South Africa, Botswana, Zambia, and Zimbabwe and has expanded to East Africa (Tanzania, Uganda, Ethiopia, Kenya, and Rwanda, among others). Eleven mobile platforms are available in six West African Economic and Monetary Union countries, which include Benin, Mali, Niger, Senegal, Burkina Faso, and Cote d'Ivoire. Mobile money has been used for person-to-person services (P2Ps), business-to-business services (B2Bs), business-to-person services (B2Ps), and government-to-person services (G2Ps). With these activities, mobile money could be seen as a game changer for financial inclusion [17].

Mobile money is a key factor in achieving social cohesion, fostering sustainable economic growth, increasing poverty reduction efforts, and achieving sustainable development goals. A few selected studies are presented in Table 1 below to shed more on the relationship between mobile money usage, financial inclusion, economic development, and the fulfilment of the 2030 SDGs in African countries.

From Table 1, it is evident that policies geared towards the promotion of mobile money usage can decrease unemployment and support government initiatives of improving economic growth, reducing poverty, and encouraging growth in entrepreneurship as well as financial inclusion of those in the informal sector and in remote areas. Therefore, taxation of mobile money activities becomes a concern for digital transformation, financial inclusion, and the attainment of SDGs in Africa. Challenges surrounding the fruition of SDGs linked to poverty in Africa are glaring. Mobile money is therefore essential to the attainment of the poverty reduction goal of 3% by 2030.

**Table 1.** Mobile money and the realisation of SDGs.

Studies	Focus	Findings
Evan [18]	Mobile money usage and financial inclusion in 44 African countries	Significant positive relationship between mobile money usage, internet access, and financial inclusion
Mutsonziwa and Maposa [19]	Mobile money as a driver for financial inclusion in Zimbabwe	Mobile expands financial inclusion, increases productivity, and helps poverty alleviation efforts
Ahmad, Green, and Jiang [5]	Mobile money and financial inclusion in Africa	Mobile money contributes to financial inclusion
Koomson, Martey, and Etwire [20]	Mobile money and the growth of entrepreneurship	Mobile money influences the growth of entrepreneurship for women, rural dwellers, and the youth. Incomes from entrepreneurship can be used to deliver the achievement of SDG 8, decent work and full productivity and employment generation, SDG 1, poverty reduction, SDG 2 (reduction in hunger and food insecurity), and for purchasing clean energy (SDG 7).
Asongu, Biekpe, and Cassimon [21]	Mobile money and inclusive development in Africa	African countries have a larger informal sector, and mobile money is key to poverty reduction and financial inclusion (thus addressing SDGs 1 and 10)
Baganzi and Lau, [22])	Trust and risk in mobile money adoption in Uganda	Mobile money can help in the achievement of SDGs in Uganda to reduce injustice and inequality, poverty eradication, and mitigation of climate change by 2030. Resources saved by, remitted to, and transferred to the previously excluded segments of the population can enable them to fulfil some of the SDGs, thus contributing to national attainment.
Rotondi and Billari [23]	How mobile money affects school participation	Mobile money usage allows deposits, transfers, receipts, and withdrawals at reduced transaction costs and from remote areas. This increases chances of children going to school, and parents can pay in an affordable manner, thus achieving SDG 10, reducing inequality, and SDG 1, reducing poverty.
Bukari and Koomson [24]	Mobile money for healthcare utilisation in Uganda	Mobile money usage enhances the rural population's utilisation of healthcare, as they are more able to spend money on healthcare in an affordable and reliable way and can also easily and quickly receive money from relatives in urban areas.

Source: own compilation.

### 2.3. Mobile Money Taxes (MMTs) in Africa

Generally, formal banks provide services to businesses, the formally employed individuals, and the rich. Disadvantaged groups such as the informal sector and the unemployed are not entirely included in the conventional banking system [25]. In most African countries, mobile money usage has grown considerably to close this gap, thus expanding opportunities for financial inclusion. Munoz, Mascagni, Prichard, and Santoro [26] submit that in SSA in 2019, more than 40 percent of the region's population utilised mobile money accounts, though the actual percentages differ in relation to countries. For example, countries such as Namibia, Kenya, Zimbabwe, Uganda, Ghana, and Tanzania heavily rely on mobile money to transact both formally and informally [10,27].

African countries have increasingly rolled out mobile money taxes to collect revenue from both the informal and formal sectors as the usage of mobile money has cut across all social divides. Individuals, small businesses, and large corporations all use it. Table 2 gives a summary of mobile money tax frameworks in selected African countries, especially in Sub-Saharan Africa, where mobile money usage is more pronounced [1].

**Table 2.** Summary of mobile money tax frameworks in Africa.

Country	Tax	Tax Rate	Effective Date/Proposal Date	Mobile Money Accounts
Cameroon	Mobile Money Tax	0.2%	February 2022	19.5 million
Ghana	Mobile Money Tax	1.75%	February 2022	12 million
Tanzania	Mobile Money Tax	0.1%	July 2021	33 million
Zimbabwe	Intermediate Monetary			
	Transfers Tax/ Mobile Money	2%	October 2018	9.4 million
Uganda	Mobile Money Tax	0.5%	July 2018	27 million
Cote d'Ivoire	Mobile Money Tax	7.2%	January 2019	

Source: author's compilation.

Table 1 presents the different mobile money tax frameworks and the accompanying tax rates. The frameworks are diverse, but the commonality among them is that they are all sectors specific to mobile money and do not cover other financial services such as banks, apart from the Zimbabwean tax framework, which is also applicable to bank transfers and swiping transactions with bank cards. The mobile money taxes have been criticised for compromising financial inclusion, economic growth, and tax revenue mobilisation owing to their formulation, structure, and multiplicity when combined with other taxes levied on the telecoms sector.

### 2.4. Motives for Introducing Mobile Money Taxes in Africa

The growth of mobile money usage in Africa piqued the interests of governments and revenue authorities to introduce mobile money taxes. Various motives have been tabled to explain the introduction of mobile money taxes in Africa. These include the pervasiveness of the issue of informality, low tax-to-GDP ratios in most African countries, and the need to widen the tax base and reduce budget deficits [1,26,28]. The informal sector has grown tremendously in most African countries and contributes very little tax revenue [29–31]. Despite the introduction of presumptive taxes, the informal sector remains challenging to tax [32,33]. Mobile money offers convenience in taxing the informal sector. Taxing this sector would increase the tax base and enhance tax collections and help countries close the revenue deficits in most African countries [32].

### 2.5. Criticism of Mobile Money Taxes in Africa

Mobile money usage heightens the digitalisation of remittances, and citizens in developing countries have harnessed the power of mobile money to fulfil SDGs [34,35]; therefore, the introduction of mobile money taxes has been met with conflicting opinions. Mobile



money taxes have been considered a worthwhile move by some researchers, but there are concerns regarding their construction, design, and administration [8,26]. On the other hand, some researchers consider them an impediment to financial inclusion [1,28]. These concerns are discussed in line with the individual concerns.

### 2.5.1. Mobile Money Taxes Policy Formulation

Policy formulation processes are considered weak and not comprehensive and evaluative enough, thus resulting in poorly designed mobile money taxes. Meanwhile, Silue [7] points to the following African countries as the ones having taxes on mobile activities: Cote d'Ivoire, the DRC, Rwanda, Uganda, Kenya, Burundi, Tanzania, Malawi, and Zimbabwe. Table 3 gives an insight into mobile money tax policy formulation in a few selected African countries.

From Table 3, it is evident that stakeholder consultation and awareness engagement on mobile money taxes were inadequate in the selected African countries. This could explain the outcry, criticism, and seeming lack of acceptance and the perceived negative impacts of the policy. Tax policy acceptance requires trust in the government and a feeling that policy ownership can be gained only through stakeholder engagement.

**Table 3.** Formulation of mobile money tax policy in selected countries.

Country	Description of Mobile Money Tax Policy Formulation
Uganda	Generally, the tax policy construction process often involves comprehensive research and incident analysis. Close collaboration and cooperation are required between various stakeholders, such as private and public sectors, Ministry of Finance, and the Ugandan Revenue Authority. Mobile money tax policy was formulated based on a directive from the office of the President. This points to deficiencies in the consultative engagement process, in tax incidence analysis, and the assessment of the likely impacts on users or their responsive behaviour.
DRC	Tax policy formulation is generally disorganised with three bodies responsible for its construction. Tax administration is equally fragmented with multiple players. Consultative processes are not prioritised in tax policy design. Taxes are generally imposed. Similar circumstances surround the implementation of mobile money taxes in the country.
Cote d'Ivoire	While the 0.5% tax on mobile money was introduced in 2018, it was later repealed and criticised for its lack of consultative engagement; the one introduced in 2019 tried to address public criticism by being expenditure-specific. What remains unknown is whether the taxes are used for the expenditures that their rollout linked them to. In 2019, the country re-introduced a mobile money tax at 7.2%. This was split as follows: 2% for rural digital development, 0.2% for financing cultural expenditure, 0.25% for addressing fraud challenges in the industry, and 4.75% for general taxes.
Malawi	Tax policy changes or amendments are generally proposed through budgets by the Ministry of Finance, after having completed drafts from consultative engagements with other stakeholders such as the Malawi Revenue Authority, the public, parliamentary committees, civic organisations, professional bodies, and academics. After all the views have been considered, consolidated, reviewed, and evaluated and tax incidences of the proposed tax assessed, then tax policy is formulated. Mobile money taxes were formulated, inspired by other countries, and benchmarked in accordance with the tax policy of other countries without considering internal views from different stakeholders that were generally pertinent to tax policy formulation.
Zimbabwe	The introduction of the 2% intermediate monetary transfer tax was met with an outcry from the public, telecoms companies, and the Zimbabwe Chamber of Commerce as well industry in general. The issue of the lack of consultation was key on the criticism list as well as the effects on financial inclusion together with affordability concerns.

Source: author's compilation based on GSMA [1].

### 2.5.2. Mobile Money Taxes and the Principles of a Good Tax System

Mobile money taxes and DFS taxes in general have been criticised for violating the canons of taxation or principles of a good tax system (equity, certainty, simplicity, convenience, efficiency, and economy, among others). Table 4 presents a synopsis of the

discussion on the principles of an ideal tax system and their evaluation with respect to mobile money taxes.

**Table 4.** Mobile money taxes and the canons of taxation.

Principle	Articulation in Relation to Mobile Money Taxes
Equity	Entails that taxpayers that are similarly situated or have the same incomes in similar conditions must be taxed in the same way (horizontal equity). Vertical equity, on the other hand, considers the ability to pay, meaning those who earn more income must pay more tax and those that earn less pay less. In relation to mobile taxes, the equity or fairness principle is violated as the tax in most countries does extend to the banking sector. It also does not consider the varying circumstances of taxpayers, especially the fact that mobile money platforms are largely used by the underrepresented or underserved segments of the population. Violation of equity lowers tax morale as well as trust in the government and tax morale [29,30].
Certainty	Taxpayers must be certain of their tax liability and how to honour their tax liability. Tax policy must have some consistency and stability, even though it must be dynamic and evolve as the business environment changes. Mobile money tax policy construction in African countries has been fragmented and unstable to a great extent, characterised by proposals, introduction of the taxes, withdrawals of the tax policy, outright repealing, re-implementations, and constant amendments. To say the least, mobile money tax policy has been unstable. This affects policy acceptance and compliance as well as the stability of the business and investment climate.
Convenience and economy	Tax policy must be simple to comprehend, not heavily burdensome, and convenient to pay. Though the mobile money tax rates may appear small, when considering the nature of the population served by the mobile money platforms, the taxes are a significant component of incomes, and their impact may be pervasive. Viewed from the angle of service providers, they are burdensome as these providers are already saddled with multiple taxes on telecom companies, as shown in Table 4. The multiplicity of taxes makes mobile money taxes heavy. The service providers are also burdened by the administrative responsibility to collect, aggregate, and remit the taxes to revenue authorities.
Efficiency	Considers economic and administrative factors. There is a need for tax policy to strike an equilibrium between the revenue generation and economic development as well as other functions of tax policy. Mobile money taxes are criticised for not paying attention to the possible negative externalities, such as reduced usage, capital flight, and market distortions as well as effects on economic growth and financial inclusion or the attainment of SDGs. Administrative efficiency entails lowering of administrative and compliance costs.

Source: author's compilation.

From Table 4, the concerns about the principles of an ideal tax system are visible. This results in challenges in adherence to the principles of a generally accepted tax system, and these could significantly affect tax policy effectiveness in the mobilisation of tax revenues. This also affects countries in delivering on other key roles of tax policy, such as building a social contract with citizens, stimulating stakeholder engagement, fair distribution of resources, driving economic growth, and reducing market distortions. The structure of a tax system could also influence how governments achieve the sustainable development goals (SDGs). In this case, mobile money is a key component of DFSs, and these services are key to digital financial inclusion, which in itself drives financial inclusion. Poorly designed mobile money taxes could affect financial inclusion unfavourably and the attainment of some of the SDGs. Multiplicity of taxes has been another concern raised by researchers regarding the introduction of mobile money taxes in Africa.

Therefore, considering the observations in Table 4, the convenience, reliability, affordability, and heightened financial inclusion that have been provided by mobile money to the previously underserved and unserved constituents of the population are compromised, hence the violation of the convenience principle. Secondly, the digital transactions become costly, forcing people back to cash and its accompanying challenges. Thirdly, the convenience principle is compromised even for the taxpayers, who could settle their



tax obligations and other payments from the convenience of their homes and offices. Person-to-person transactions, business-to-business transactions, government-to-person, and person-to-government mobile money transactions are impeded when mobile money transactions become expensive due to tax cost.

In relation to the certainty principle, African governments and policymakers must work towards bringing more stability, consistency, and certainty to the mobile money taxation frameworks and certainty. In their current state, the mobile money frameworks are characterised by imposition of policies and taxes, their amendments, their withdrawal, and re-introduction in countries such as Uganda, Rwanda, Kenya, and Cote d'Ivoire [36]. The consequences are compromised revenue mobilisation, loss of tax morale, negative impact on businesses, increased tax collections and compliance costs, and an unstable investment climate that discourages foreign direct investment and domestic investments.

With respect to effectiveness and efficiency principles, the design of the tax systems influences their impact, and “badly designed mobile money taxes have been shown to have a distortionary impact on the demand for mobile money services” [36]. Policymakers must uphold the two principles by appropriately designing mobile money tax frameworks; otherwise, their inappropriate design could affect other tax heads, financial inclusion, digital transformation, digital financial inclusion, and the usage of digital financial services as well as the fruition of economic plans and the SDGs.

### 2.5.3. Mobile Money Taxes and the Multiplicity of Taxes in the Telecoms Sector

Mobile money taxes arguably burden both the consumers and service providers, especially considering the multiplicity of taxes facing the telecoms sector. The burden is coupled with other charges such as internet taxes and other digital service taxes in the form of corporate income taxes and VAT on digital taxes that have been recently introduced in some developed and African countries. This therefore raises concerns about the current design or structure of mobile money tax frameworks. Pushkareva [8] and GSMA [1] suggest that African tax systems are poorly formulated due to capacity weaknesses, lack of in-depth and appropriate evaluation, and research, and more so due to the political economy factors that drive tax policy. Table 5 provides a summary of the variegated taxes levied on the telecoms sector in different African countries to give insight into the true nature of the tax burden arising from the sector-specific taxes in addition to other general taxes such as VAT and corporate income tax.

**Table 5.** Taxes on the telecoms sector in selected African countries.

Country	Corporate Tax	VAT	Tax/Charge on Cell Phone Airtime	Tax on Mobile Money Operators' Revenue	Tax on Mobile Money Transactions
Cote d'Ivoire	30%	18%	3%	7.2%	
DRC	35%	16%	10%	3%	
Kenya	30%	16%	10%	-	12%
Malawi	30%	16.5%	10%	-	1%
Rwanda	30%	18%	10%	-	-
Uganda	30%	18%	12%	10%	0.5%
Zimbabwe	24.72%	15%	10%	-	2%
Tanzania	30%	18%	17%		10%

Source: author's compilation based on Silue [7], GSMA [1], and Pushkareva [8].

As seen in Table 4 above, in addition to the obligation to pay corporate income tax and VAT, mobile operators are obligated to honour regulatory taxes, excise taxes, and other fees and taxes unique to the industry, such as the novel digital services taxes (DSTs) and the VAT on digital services. The major fiscal tax liabilities, as outlined in Table 4, suggest overly burdensome overall taxes on the sector.

### 3. Materials and Methodology

The article was a critical review to assess mobile money taxes in African countries and how they relate to financial inclusion and the attainment of SDGs. A critical review involves an in-depth assessment of related literature on the subject area to reveal areas of disagreements and convergences amongst researchers so that research gaps can be made visible [37,38]. The literature was gathered through the Google Scholar database and Scopus database using the “Publish or Perish” search tool. The literature was enhanced by searching websites such as GSMA that publish articles on mobile technology issues and the Institute of Development Studies. A total of 60 articles were reviewed. Wee and Banister [39] recommend between 50 and 100 papers for a comprehensive review article. The literature was discussed thematically. The literature was reviewed until the saturation point was achieved, and this was the point at which no new information on the issue under review was arising from further reviewing of more papers [40]. Sebele-Mpofu [40] encourage qualitative researchers to present their research findings under themes for easier comprehension by readers.

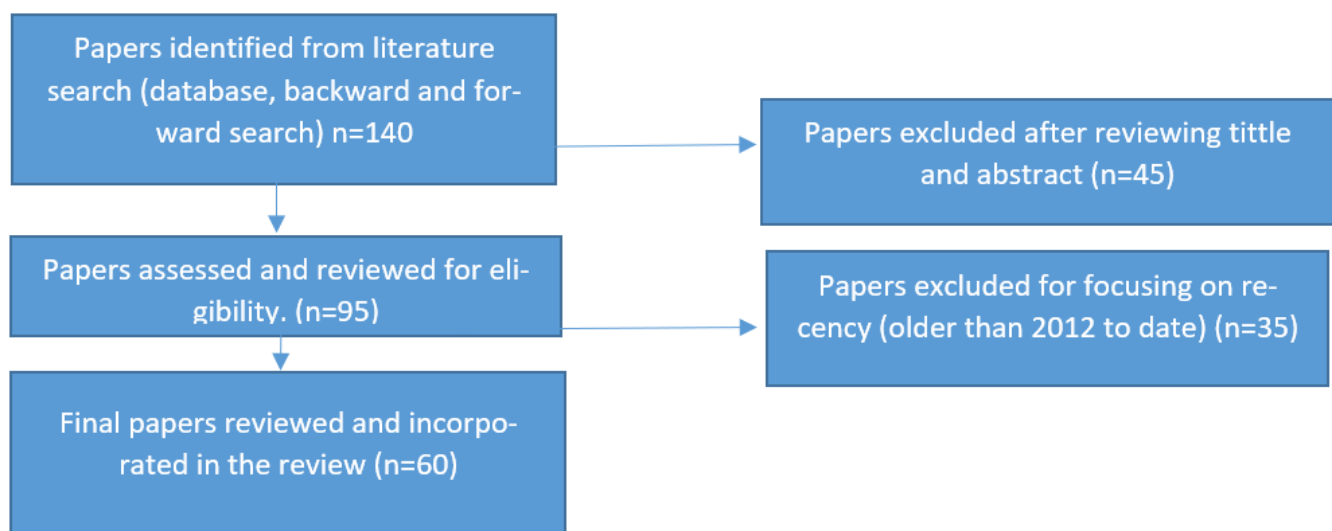
The review process is outlined as follows:

**Literature search and selection:** To identify the appropriate studies, the initial step was to search through the Google Scholar database for studies relevant to mobile money, mobile money taxes, revenue generation, financial inclusion, and the fulfilment of the SDGs. The Google Scholar database was used for the initial search in the literature review based on recommendations from various literature review scholars who recommend it due to it being extensive, comprehensive, and open access [41–44]. Xiao and Watson [44] refer to the database as “a very powerful open access database that archives journal articles as well as ‘grey literature’ such as conference proceedings, thesis and reports”. The search words that were used for the initial scoping search for literature included: “Mobile money usage and Financial inclusion in Africa or African countries”, “Mobile money and Sustainable Development Goals or SDGs in Africa or African countries”, and “Mobile money taxes in Africa or African countries”, “Mobile money taxes and Revenue Mobilisation in Africa”, and “Mobile money taxes, financial inclusion, and the achievement of the SDGs” in Africa or African countries.

**Inclusion and exclusion criteria:** The focus was on original peer-reviewed papers, conference proceedings, and papers from other development bodies as well as tax blogs. The researcher scanned through all the titles, keyword abstracts, and introductions for the study outputs extracted from the initial papers. Although mobile money was first introduced in Kenya in 2002, the literature search was restricted to papers published around 2012 when the use of mobile money gained momentum in Africa with an estimated 640 million users. Papers were selected based on the inclusion criteria of relevance and recency using backward and forward snowballing searches [42,43]. With backward snowballing, the researcher scanned through the selected articles’ reference lists to choose those studies whose titles matched the focus of this review, and these were searched for in different databases and evaluated for relevance using the keywords, abstract, and introduction [43,45]. Forward citation searching involved reviewing additional publications that cited the articles identified in step one. The articles identified were assessed against the criteria of relevant title, abstract, and introduction as well as recency to determine their appropriateness for the study. The search and evaluation process are presented in the flow chart in Figure 1.

**Data extraction, analysis, and synthesis:** Using the NVIVO qualitative data software, data from the selected papers (that had been stored in the Endnote citation database) were extracted, aggregated, and thematically discussed. The analysis was built on the major themes that had been inductively derived from the reviewed literature. The focus of the review was on four fundamental aspects, and these are mobile money taxes, revenue mobilisation from mobile money taxes, mobile money, financial inclusion and the attainment of SDGs, and mobile money taxes and their impact on financial inclusion and the SDGs, with a special focus on Africa. Using the NVIVO software, extracts from the various studies were extracted, grouped in line with the themes, and then combined during the literature review

section presentation to create the compilation presented in Section 4 on findings. These results were discussed in relation to key themes, and where subthemes were identified, these were also used. The results were narratively explained, showing converging, and diverging perspectives, with the hope of synthesising issues of convergence and divergence that emanated from reviews to identify research gaps, controversies, and weakly explored issues to give directions for further research. The narrative discussions were enhanced with tables to give a visual and clear presentation of statistics to support the discussions.



**Figure 1.** Flowchart presenting the literature review process. Source: own compilation.

## 4. Results

This section discusses the review findings under four themes discerned from the review objectives and the reviewed literature.

### 4.1. Mobile Money and Revenue Mobilisation

Tax revenue mobilisation is generally weak in developing countries, including African countries. This is due to several challenges that constrain effective tax revenue generation, yet taxes represent a significant portion of total national revenues in most African countries, perhaps except for the oil-rich countries. These challenges include the lack of adequate research capacity to inform tax policy, administrative weaknesses, the political economy that affects policy construction and administration, lack of specialist knowledge, and failure to tap tax revenues from the ICT-powered economy, driven by the digital economy. These challenges are further compounded by the growing digital economy, the large informal sector, tax avoidance and evasion by multinational enterprises, and narrow tax bases in Africa [46–48]. Due to these constraints, African countries have low tax to GDP ratios when compared with developed countries. While the tax to GDP ratio of developed countries estimated is at 24%, that of SSA is approximated at 15.6% (around 8% lower than that of developed countries). The ratio is generally lower even for individual African countries in comparison with the tax to GDP ratio for developed countries. For example, in Uganda the ratio is 12.7%, Kenya, 15.6%, Cote d'Ivoire 16.5% and Malawi 17.1%. Some of the African countries such as Uganda are performing below the SSA tax around the GDP ratio average [1].

Mobile money taxes could boost revenue generation efforts due to the ease of tax collection. The fact that tax collection is carried out through telecommunications companies and mobile money transfer businesses on behalf of the government makes tax collection simple, convenient, and less cumbersome [49,50]. Just like withholding taxes, governments can collect taxes directly from a few sources as compared to millions of mobile money users. This kind of collection minimises administration and tax compliance costs as the

agent or mobile money platform collects tax each time a transaction takes place. This kind of collection brings simplicity and transparency to tax administration though unfairly burdening mobile networks with tax administrative or collection responsibilities. The ease of collection is envisaged to increase tax collections. There is no denying that mobile money taxes reduce tax evasion and increase tax compliance and ultimately tax collections. They also reduce the effects of corruption, institutional weaknesses, lack of technical skills, and shortage of human capital on tax collections [49,51]. Albeit this is not to say mobile money taxes are the way to go. Other key fundamentals need to be considered.

Even though the revenue mobilisation possibilities are evident, there are varying perspectives among different stakeholders (tax experts, policymakers, the public, civic organisations, economists, and telecoms service providers, among others) on the desirability of mobile money taxes. Disagreements coalesce around the possibilities of increasing revenue generation and boosting economic growth through financing government expenditure on one hand and, on the other hand, the likelihood of harmful impacts on the long-term goal of financial inclusion and the fruition of the SDGs. Contention among various stakeholders surrounds the impact of these taxes, the motivations behind their implications, and their design or structure.

While some researchers argue that mobile money taxation increases revenue generation, others argue to the contrary, suggesting that such taxation could negatively affect tax revenue generation, increase tax evasion, and tax non-compliance, and ultimately reduce tax revenue collections [51]. As expressed by Ndung'u [2], "taxation of mobile phone airtime and financial transaction may not expand the tax base significantly but rather may reverse the gains in retail electronic payments and financial inclusion". Taxation may discourage the usage of mobile money and increase tax evasion by encouraging the poor and the informal sector to revert to cash, thus leading to a reduction in tax revenue. Wandaogo et al. [49] propose that person-to-government payments using mobile money platforms improve the effectiveness of domestic revenue mobilisation in countries affected by the prominence of informality, bureaucratic tendencies, corruption, and low levels of financial inclusion. These features characterise most African economies. Mwesigwa [51] argues that mobile money increases tax evasion as consumers abandon banking halls for roadside kiosks or complete transactions over the phone, reducing tax revenues collected. The formal intermediaries are important for taxpayer identification, and their abandonment affects tax revenues because when the receipt and spending of mobile money is carried out secretly, a reduction in the taxable income is observed.

#### *4.2. Mobile Money, Mobile Money Tax, and Financial Inclusion*

Financial inclusion has increasingly become topical and at the centre of discussions between both policymakers and researchers as a likely source of economic developments and other gains for the economy. There is no consensus on the definition of financial inclusion [52,53]. Sarma [54] defines financial inclusion as the easy access, availability, and usage of financial services for all citizens of a country. Munoz et al [26] citing the World Bank describes financial inclusion as ensuring access to and usage of affordable financial services as well as products. Usage can include transacting, transfers, savings, payments, insurance, and access to credit. Financial inclusion is a key driver of economic growth, efficient resource allocation, improving intermediation, increasing savings, and enhancing entrepreneurial operations. Mobile money reduces the costs of banking and costs of travelling to banks.

The volume and magnitude of mobile money transactions in Africa point to tremendous progress towards financial inclusion [55,56]. GSMA [57] submits that in 2020, mobile money accounts increased by 12% to 562 million, and monthly functioning accounts rose to 161 million, representing an 18% jump in SSA. The total volume of transactions rose by 15% to approximately 27 billion, and the value of mobile money transactions increased by 23% to USD 495 billion in the region. These estimates signal increased financial inclusion that is likely to be curtailed by the introduction of mobile money taxes.

Researchers allude to possible positive macro- and microeconomic implications that could emanate from the efficient provision of financial services. Financial development has been argued to facilitate economic growth at firm, industry, and national levels and to boost productivity and capital accumulation. As a part of financial development, financial inclusion has been linked to a reduction in income inequality and is significantly linked with poverty alleviation. Levine [58] posits that financial inclusion is critical because it generates information that is necessary for decision making; it allows for the allocation of capital productively, it allows for monitoring of investments and exerting of corporate control, enhances resource mobilisation and pooling of funds together, promotes trading, diversification, and risk management, and enables easier trading of goods and services. Financial inclusion has been defined in a variety of ways, and these definitions are often interlinked and touch on one or more aspects of financial inclusion. These aspects include ensuring most of the population, especially the vulnerable groups, such as women, the informal sector, and the unemployed, have access to financial services, increasing the level of use of financial services, improving the quality of financial services, and ensuring their affordability. These aspects are interconnected and include greater access, affordability, and ease of use of financial services such as online banking platforms, mobile money, and automated teller machines (ATMs), all of which encourage extensive use of financial services by the population. The level of financial inclusion or exclusion to a greater extent point to dimensions of access, quality, and costs. Digital transformation and the growth of the digital economy present opportunities and changes for revenue generation and financial inclusion in developing countries. The COVID-19 pandemic increased the use of DFSs and exposed the need for their heightened usage. Economies suffered several challenges and significant revenue losses due to the pandemic and response measures to it, such as the lockdowns, social distancing requirements, and remote working, and reduced operating hours and capacity. For example, for non-banked institutions such as microfinance companies, repayments were affected as borrowers could not travel to them to pay their obligations, and the banking activity of individuals who were not registered for online service transactions came to a standstill. In some cases, digital or online banking platforms provided low-quality service, were not functioning effectively, and were not user-friendly. For mobile money platforms, the transaction limits made their use difficult. In response to the challenges, financial institutions are increasingly going digital. Even though digitalisation of financial services is a welcome development, revenue authorities face challenges in mobilising tax revenues from the digital economy [26,59,60]. Efforts are currently being made to tap revenue from this economy through the introduction of digital services taxes (DSTs), VAT on digital services, withholding taxes on digital services, and digital financial services taxes (specifically focusing on DFSs) [58,61]. DFSTs, specifically mobile money taxes, are the focus of this paper.

Mobile money is a financial service of choice for most of the underserved segments of the population. Due to its convenience, simplicity, and ease of use, mobile money has closed the gap for the unbanked segment of the population that traditional banking has left open [62,63]. Emerging markets are a hive of activity for mobile money. SSA experienced the most significant growth in mobile money accounts, which were estimated to grow to approximately 500 million by the end of 2020 [1]. This points to significant expansion in financial inclusion. Viewed from the revenue mobilisation perspective, money exchanging hands through these accounts going untaxed would have a substantial effect on untapped tax revenues, thus affecting the propensity of the government to deliver on its objectives as well as the 2030 SDGs. Formal economic activity is estimated at 34% of the population in SSA, implying a narrow tax base for corporate income tax, VAT, and even PAYE. Mobile money taxes provide an opportunity to broaden the tax base by taxing this 64% of economic activity, which is informal.

According to Muthiora [28], “Mobile money is a catalyst for financial inclusion and the development of the digital ecosystem”. In Zimbabwe, mobile money has been instrumental in alleviating transacting challenges in a country bedevilled by hyperinflation, currency



instability, and cash shortages [10]. Despite these positive implications, mobile money taxes could reduce the gains. Karombo [3] states that company profits for some companies, especially retail companies that benefited from mobile money purchases, took a huge knock due to digital payment taxation. The researcher gives the example of OK Zimbabwe and reports, “In November 2021, it had to take a hit on its profit base, due to digital payments tax”. This does not only affect company profits but also consequently corporate tax and VAT collections, affirming the role played by mobile money in Kenya. Muthiora [28] submits “The introduction of mobile money technology and its proliferation after 2000 provided a suitable platform for Kenya to leapfrog access to financial services”. The use of mobile money for different activities has increased in Kenya. For example, in 2018 the use of mobile money to purchase airtime and to transfer money increased from 37.5% to 53.3% and from 4.1% to 44.3% in 2014 respectively. The expansion in usage was also evident with respect to the payment of bills and sending of airtime that also recorded a significant growth from 2.6% to 17.5% and 5.2% to 43.40% respectively over the same period [1]. The increase in usage is also being enjoyed in other African countries as well.

Akinyemi and Mushunje [64] state that the Central Bank of West African States, in promoting the use of mobile money in Guinea-Bissau, Niger, Benin, Senegal, Burkina Faso, and Togo amid the COVID-19 pandemic, relaxed its rules. N’dri and Kakinaka [65] allude to the fact that the expansion of financial inclusion through mobile money usage helps positively change the welfare statistics of the population with respect to education, healthcare, and nutrition, leading to the attainment of the seventeen SDGs.

Mobile money can be viewed as a tool to reduce financial exclusion by addressing two key problems affecting financial inclusion, that is, affordability of banking services and the proximity of the banking infrastructure [66,67]. Dealing with these challenges enhances the reachability of financial services, thus fostering financial inclusion. Mobile money also connects buyers and sellers in branchless banking, promoting both financial inclusion and trade. Akinyemi and Mushunje [64] assert that “Relative to other means of sending or receiving money 88%, 83%, 78%, 80% and 89% agreed that mobile money is easier, safer, more trustworthy, more convenient and faster, respectively”. In Cote d’Ivoire, as mobile money usage expanded, financial inclusion increased for the years 2014 and 2017 [1].

Kenya, South Africa, Egypt, Mauritius, and Nigeria are amongst some of the African nations considering measures to tax digital money or mobile money [6]. The argument is that mobile money companies push the tax burden to consumers, and this results in reduced usage as the costs of transacting on these mobile money platforms increase. In most of the countries that introduced mobile money, usage of the platform decreased. The fact that in many African countries most of the population is largely marginalised and vulnerable makes the likely negative implications of mobile money taxes for financial inclusion and wider development agendas significant. In addition, the fact that taxes on mobile do not extend to the banking sector in most of these countries except in Zimbabwe is problematic, implying that they are regressive; they ignore the equity principle of taxation. The unbanked segments of the population are generally financially excluded or not banked due to inequalities, poverty, low incomes, unemployment, and difficulties in meeting requirements for opening accounts as well as the need to maintain minimum account balances. GSMA [1] submits that 77% of mobile money operators pointed out that in 2019 they paid sector-specific tax obligations in the form of a portion of total revenues, transaction values, and fees. The other 23% of the service providers surveyed reported that the adoption and usage of mobile money services and their business activities declined, accentuating the regressive impact of mobile money taxes. In Cote d’Ivoire the growth in mobile money usage was accompanied by an increase in financial inclusion. According to GSMA [1], an increase in mobile money usage from 24% in 2014 to 34% in 2017 was accompanied by an expansion in financial inclusion from 34% to 41% over the same period. The estimates indicate that mobile money is a driver of financial inclusion and that taxation of mobile money activities is likely to impede on the financial inclusion efforts in African countries.



#### *4.3. Mobile Money Taxes, Revenue Generation, Economic Growth, and Financial Inclusion in African Countries*

Digital transformation in the financial services sector, the increased use of digital financial platforms, and the rollout of mobile money platforms in developing countries are credited for enhancing financial inclusion in these countries [68]. In South Africa, researchers provide evidence that using banking services as opposed to cash reduced transaction costs and risks of using cash and increased the speed of transactions. This was argued to be the case with social service grant pay-outs. The use of banking services and mobile money services increases transparency, reduces corruption, and leaves an audit trail, which also enhances accountability and tax revenue generation. In Kenya, the M-Pesa mobile money platform resulted in significant positive gains in savings, household consumption, and poverty reduction levels. The platform enabled ease and speed in sending and receiving money via both business-to-business (B2B) and business-to-customer (B2C) services as well as between individuals. This platform also helped in risk management. Most M-Pesa transactions are said to occur between individuals. Demirgüç-Kunt and Singer [69] posit that financial inclusion is not only essential for the growth of business and access to financing by SMEs but also important to households with respect to access to credit, savings, and insurance. These advantages could improve economic growth, productivity, and taxable income in the economy. Burns [70] suggests “Inclusive financial systems play a critical role in fostering economic growth and development”.

Taxation of mobile money is likely to boost revenue generation in African countries [71]; the challenge is when such taxation is excessive and complex and not in accordance with good tax system principles. Researchers argue that African governments’ obsession or single-minded focus on mobile money taxation could have unintended negative effects on economic growth, financial inclusion, and the realisation of the wider SDGs [3,7,8,26]. These researchers allude to the multiplicity of taxes on mobile telecommunications providers. For example, in Ghana, in addition to the 5% tax on mobile telecoms, the country introduced a 1.5% mobile money tax. The multiplicity of these taxes risks undermining efforts towards financial inclusion of low-income earners, the informal sector, women and girls, rural communities, and the unemployed in formal financial services systems. Mobile money taxes may be harmful to African governments’ efforts to widening financial inclusion. The taxes could affect the digitalisation of remittances in African countries as well as financial development yet Burns [72] and Scharwatt [35] recommend mobile money usage as an avenue to deliver on these two aspects that are vital for economic growth.

#### *4.4. Financial Inclusion and the Attainment of Selected Sustainable Development Goals (SDGs)*

SDGs are described as policy priorities, set targets, or aspirational goals that countries ought to work towards achieving, despite the unique national contexts, resource capabilities, realities, and levels of development affecting these countries [34,55,73]. Countries must generally seek to align their policy strategies and planning processes with efforts to deliver on the sustainable development goals. In the context of this research, the review sought to assess mobile money tax policy and how it delivers on tax revenue generation and affects financial inclusion. Revenue mobilisation and financial inclusion ultimately affects governments’ propensity to deliver on the SDGs [73,74]. The review focused on selected sustainable development goals, and these were selected because they are visibly and inextricably linked with revenue mobilisation and financial inclusion. Governments need finances to deliver on their roles, and financial inclusion fosters access to cheap and available financial services. According to the reviewed literature, financial inclusion affects economic growth, poverty eradication, and reduction in inequalities and enables access to education and health and to some extent reduces unemployment, while on the other hand, domestic revenue mobilisation, through expansion of the tax base by including the digital economy and mobile money, could provide funds to enhance economic growth, poverty alleviation, investments in education, health and security, and boost employment

creation and investments in infrastructural development. A productive economy where citizens have decent work could lead to the attainment of various SDGs, such as 1 to 5, 8, 9, 10, 11, 16, and 17. The fulfilment of the SDGs could further boost financial inclusion and the continuous cycle of revenue mobilisation, financial inclusion, and the continued achievement of SDGs.

Financial inclusion is important in reducing poverty and the realisation of inclusive economic growth [34,75,76]. According to Mustonziwa and Maposa [19], “In Zimbabwe, the levels of financial inclusion are moderate and mobile money is one of the critical contributors and the key driver to financial inclusion”. Affirming the role of financial inclusion in the realisation of SDGs, Pazarbasioglu et al. [77] asseverate:

“Access to affordable financial services is critical for poverty reduction and economic growth. Countries with deeper and more developed financial systems have higher economic growth and larger reduction in poverty and inequality. For poor people, access to and use of basic financial services can improve incomes, increase resilience and improve lives”.

Revenue generation and financial inclusion are both vital for the attainment of some SDGs. Table 6 gives a summary of the seventeen 2030 SDGs.

Acknowledging the role of mobile money and financial inclusion in reducing poverty and inequality in Zimbabwe, Mustonziwa and Maposa [19] assert that “Mobile money in Zimbabwe has extensively extended the frontiers of financial inclusion to reach millions who were earlier excluded within a relatively short space of time. The growing use of mobile phones in transferring money and making payments has significantly altered the country’s financial landscape as millions who have been hitherto excluded can now perform financial transaction in a relatively cheap, reliable and secure way”. Mobile money can be seen as a conduit for financial inclusion and financial inclusion, enabling the realisation of certain SDGs, such as SDGs 17, 16, 11, 10, 9, 8, 5, 4, 3, 2, and 1.

**Table 6.** Sustainable development goals.

Sustainable Development Goals (SDGs)	Focal Points
SDG 1	Poverty eradication. Countries to work towards eliminating poverty and its manifestations among citizens.
SDG 2	Eradication of hunger. Countries to ensure and enhance sustainable agricultural activities to achieve food security.
SDG 3	Ensure good health and the well-being of citizens. This entails making health facilities also affordable and accessible for all citizens.
SDG 4	Delivering quality education for all. It is important that nations make sure that education is equitable, inclusive, and of good quality for all and offer further learning possibilities.
SDG 5	Addressing gender equality and empowerment of all girls and women.
SDG 6	Provide clean water and sanitation for all. Countries to ensure they have water and sanitation is available to all and on a sustainable basis.
SDG 7	Countries must ensure citizens have access to cheaper, reliable, sustainable, and modernised energy sources.
SDG 8	Decent work and economic growth. Ensure long-term economic growth that is both sustainable and inclusive. Citizens must also have decent work opportunities as well productive employment.
SDG 9	Industrialisation, innovation, and infrastructural development. Countries must promote the building of strong infrastructure, promote sustainable and inclusive industrialisation, and promote innovation.
SDG 10	Reduction in inequalities. Inequalities to be minimised within countries and among them.

Table 6. Cont.

Sustainable Development Goals (SDGs)	Focal Points
SDG 11	Building cities and human settlements that are resilient, inclusive, safe, and sustainable.
SDG 12	Encourage production and consumption that is both responsible and sustainable over time.
SDG 13	Address climate challenges by taking quick steps to deal with climate change and its accompanying impact.
SDG 14	Conserve and protect the lives under water by conservation and sustainable use of seas, oceans, and marine resources to facilitate sustainable development.
SDG 15	Protecting life on the land. Nations must strive to ensure protection, restoration, and promotion of terrestrial ecosystems, sustainable forest management, mitigation of desertification, and reduction in land degradation and combating of biodiversity loss.
SDG 16	To promote peace and justice as well as the building of strong institutions: this could be achieved by countries promoting peaceful and inclusive communities that would foster sustainable development and allow access to justice for everyone. Countries must ensure institutions are inclusive and accountable at all levels.
SDG 17	For the sustainable goals to be achieved, partnerships are key. Nations must enhance the implementation and rejuvenate the global engagements or partnerships to promote sustainable development.

Own compilation.

#### 4.5. Discussion

The introduction of mobile money taxes in the region is a way to increase revenue mobilisation. There is increased concern as evidenced by the results of the literature review that unintended negative consequences that could impede financial inclusion, poverty alleviation efforts, and fruition of the SDGs could emanate from these taxes. While governments lean on the argument that increased revenue mobilisation could produce funds to boost government expenditure to fund education, security, health, and security, among other macroeconomic objectives, researchers and service providers argue to the contrary. The key points for this research centred on the possible effects on three groups of stakeholders, and these are the consumers, the SMEs and mobile service providers, and the government. Financial inclusion and the attainment of SDGs are inextricably connected to these stakeholders.

##### 4.5.1. Possible Effect on Consumers

Mobile money taxes are more likely to have a negative and regressive impact on consumers. They could unfairly and disproportionately burden the poor if not appropriately constructed, and their multiplicity could compound the situation. In their current structure and rates, mobile money taxes threaten financial integration, financial inclusion, and poverty reduction initiatives. The low-income earners and the poor will fail to save enough to pay for food, health, and school fees, thus affecting the SDGs.

##### 4.5.2. Possible Impact on Businesses, SMEs, and Mobile Service Providers

Mobile money taxes impede investment in mobile money and digital platforms, yet digital transformation, the growth of digital financial services, and the expansion of the digital economy are inevitable forces. These forces signal the need for mobile money operators to expand their networks, improve the quality, and contend with new regulatory requirements. Mobile money taxes can affect P2P transactions and B2B transactions, lowering the usage of mobile money and leading to the closure of small businesses that heavily relied on mobile money transactions. This could be due to the increase in the costs of utilities and the loss of the rural clientele base where payments are difficult to make

through traditional financial institutions or it is impracticable to access these financial institutions. This has a negative effect on both consumers and service providers. This could lead to loss of employment, compromising SDG 8. This is affirmed by Shapshak [78] and The Africa Report [79], who highlights the importance of mobile money in Africa, and Van Hove and Dubus [80] and Muthiora and Raithatha [81] as well as Shinyekwa [82], who articulate the possible negative consequences of implementing mobile money taxes.

Mobile money taxes can reduce the usage of mobile money, thus affecting both financial and social inclusion. Even if the taxes herald a promising dawn of tax revenue mobilisation simplification, tax administration efficiency improvement, and increased tax compliance, they can contrastingly result in low tax revenues due to decreased usage, reduced profitability for businesses due to reduction in customers, and the loss of the rural customer base for businesses that are highly dependent on mobile money transactions (loss of VAT and corporate taxes). This might have implications far greater than the simplicity of the tax system benefits for governments.

#### 4.5.3. Possible Effect on the Government

Mobile money taxes could offer a more simplified, convenient, and easy way to collect and boost tax compliance as revenue is collected at the source of the funds. The relationship is tantamount to the withholding tax relationship where the payer deducts the tax before paying the payee. In this case, the mobile money networks offering the mobile money accounts or the banks offering mobile banking services deduct tax each time a person sends money, transfers money, withdraws money, or makes purchases, money transfers, or swipes. This simplifies taxation and improves tax compliance as the revenue authority focuses on fewer taxpayers as compared to millions of money account holders and bank account holders. This is not to trivialise the possible cumbersomeness of the tax audits and verification of the completeness of tax remittances that would be experienced by both revenue authorities and agents (banks and mobile money networks). There is a trade-off between simplicity, enhanced tax compliance, and the chilling implications of the surveillance, vulnerabilities, and implications of mobile usage and taxation with respect to customers' personal information.

Mobile money taxes could lead to loss of employment and retrenchments (loss of income tax or pay as you earn), thus perpetuating poverty and inequality. Mobile money taxes could also possibly lead to further fracturing of the implicit social contract between a government and its citizens. The implicit social contract presupposes that as citizens pay their fair share of taxes, the government should in turn deliver quality public goods and services to justify the investment in taxes [30]. The tax levied must be fair, transparent, equitable, economic, and convenient. Mobile money taxes in their current form could hurt the fiscal objectives of African governments. The taxes can fail to mobilise the much-anticipated revenues but conversely affect the other possible advantages that could boost public finances. For example, through digitisation of taxes, rates, water and electricity bill payments, levies, and other fees such as license fees, the government can easily and conveniently collect public revenue. This is affirmed by Muthiora and Raithatha [81], who suggest that in Kenya, digitisation of the National Transport Safety Authority payments resulted in the monthly generated revenue increasing from USD 1.1 million to USD 2 million between July 2015 and October 2016. Tan [16], showing the possible negative impact, submits that in Tanzania, person-to-person remittances reduced from 30 million to 18 million, reflecting a 38% reduction in usage in 2021.

#### 4.5.4. Implications of Mobile Money Taxes and Customer Privacy and Confidentiality

The use of mobile money through mobile money accounts such as M-Pesa, Orange money, and Ecocash as well as mobile banking apps can be said to be linking two services together: firstly, the telecommunication services, which use a sim card for communication purposes, and secondly, the financial services connected with mobile money and mobile banking accounts. This is especially relevant considering that most African countries, such

as Kenya, Botswana, South Africa, Nigeria, Tanzania, Zimbabwe, and Uganda, have made the registration of the sim card compulsory [83]. Even though the rationale is to enhance the government's propensity for surveillance to reduce financial crimes and illegal money flowing into the system, this, on the other hand, heightens customer vulnerabilities. For example, through the registration details, authorities can follow the social and digital footprints of customers. In the face of these possible privacy invasion implications, customers wanting to have access to their mobile banking services, mobile money accounts, and their telecommunications services have no choice but to provide these personal details [84]. Mobile money accounts and mobile money usage together offer rich data on customers' social networks, personal preferences, behaviour patterns, and financial transactions [85–87], and such data present considerable vulnerabilities and risks in terms of abuse of the information not only by the private sector and criminals but also by authorities. More so from the angle of taxation, the personal data, and financial data from mobile money networks and banks, can be used to collect taxes on behalf of the revenue authorities and remit them accordingly.

The scrutiny of customer information during tax compliance assessments and tax audits increases the risks and vulnerabilities and potential abuse of information even further. Martin [87] raises these concerns and possible implications for tax revenue reduction and financial inclusion gains reversal when citizens revert to cash-driven economies and keep money at home due to perceived surveillance concerns.

## 5. Conclusions, Recommendations, and Areas for Further Research

While it is indisputable that African governments need to increase tax revenues and widen their lean tax bases and that mobile money taxes provide a possible tax base to exploit, it is important to emphasise that in their formulation of tax policy towards mobile money services, these countries do so with an analytic of “discerning” eye. Mobile money taxes are surrounded by controversy, especially their implications for domestic revenue generation and financial inclusion. Mobile money has been key to Africa achieving considerable financial inclusion and contributing to wider development objectives. Mobile money is important for global development and economic empowerment of communities, individuals, and businesses, especially the marginalised sections of the population. Taxation of mobile money is also important for revenue mobilisation, though these taxes have been considered controversial and at times viewed as replications of tax policies between countries, without adequate assessment of the broader implications for the economy, vulnerable groups, taxpayers, mobile service providers, and financial inclusion. In designing and administering mobile money taxes, governments must be wary of the possible trade-offs and unanticipated consequences discussed in the article such as possible loss of revenue, the chilling surveillance concerns, possible increase or reduction in tax revenues, impediment of financial inclusion, and the failure to attain the SDGs. Therefore, when considering mobile money taxes, policymakers must evaluate the possible negative short- and long-term externalities of such tax policies and strive to construct a more inclusive, flexible, long-term-inclined, and comprehensive tax frameworks that will allow for effective tax revenue mobilisation. Properly designed mobile money taxes must be able to reduce the costs of tax collection, administration, and compliance, and foster economic growth and the long-term attainment of the broad development and economic plans as well as the SDGs. Based on the conclusions from the review, the article makes the following recommendations.

### 5.1. Recommendations

The multiple taxes on the telecoms sector, especially the sector-specific taxes, should be revisited and compared to the heavy tax burden faced by mobile service providers. It is important for countries to uphold the principle of equity in taxation, especially with respect to mobile money and other digital financial services as well as the telecoms sector and other sectors. Mobile money taxes seem to disadvantage the informal sector and marginalise

groups as they do not consider the ability to pay principle. The following equity concerns need to be addressed:

- Improvement in the design of mobile money taxes in line with the canons of taxation. Currently, as discerned from the literature review, mobile money taxes in most African countries are the converse of a good tax system guided by the canons of taxation or principles of an ideal tax system, such as equity, convenience, fairness, neutrality, certainty, and efficiency. Therefore, perhaps in trying to align mobile money taxes with the revenue mobilisation goals, financial inclusion, social inclusion, and the attainment of SDGs, African governments must rethink the design of mobile money taxes in line with the principles of taxation. For example, as highlighted earlier in the literature, Zimbabwe is the only country that has added similar taxes to the mobile money taxes to the formal banking transactions such as swipes and transfers. To uphold the principle of equity, both horizontal and vertical, bank transactions must be subjected to taxes similar to those in other African countries. The discriminatory structure of these taxes, which do not cover financial institutions, points to the regressive nature of mobile money taxes. Therefore, extending these taxes to the banking sector would help address the fairness and equity concerns, thus boosting tax morale. Governments also must consider that for some incomes, taxation of mobile money transactions is taxation of already taxed income that was subjected to PAYE for the formally employed (double taxation implications).
- In terms of convenience, the mobile money tax systems must be made to uphold this principle. Governments must find a way that does not burden service providers (deemed agents such as banks and mobile networks) with responsibilities of tax computation, collection, remittances, and general accountability, in addition to their own other tax-related obligations of filing for tax returns on corporate tax, VAT, and PAYE.
- Simplification of mobile money tax legislation to reduce complexity, instability, and uncertainty. Tax legislation is not stable as it is constantly changing, increasing compliance costs, and negatively affecting investor expectations.
- Taxation of DFSs should be more favourable, including the taxation of mobile money by adequately assessing the implications for poverty alleviation, sustainable economic growth, and development as well as the realisation of SDGs such as poverty alleviation, reduction in inequalities, and creating decent work as well as building strong institutions as these SDGs are linked to financial inclusion and economic growth.
- More research on DFS taxes, mobile money taxes, and the impact of these taxes on the wider development goals. There is a dearth of research, literature, and policy contributions on mobile money taxes. Future researchers could perhaps continue to research how to tax mobile money without stifling the mobile money services' growth and unfavourably affecting the undeserved and underrepresented groups and the generally marginalised.

## 5.2. Limitations and Areas for Further Research

This research was qualitative in orientation, and this could have affected the findings as they are narrative in nature, though supported by relevant statistics; further research could use empirical data or perform a quantitative matter analysis of the studies. Further researchers could explore the relationship between mobile money and financial inclusion to build a case for the possibility that mobile money taxes negatively affect financial inclusion and the attainment of the SDGs. Future researchers could also further investigate the effect mobile money taxes have on revenue mobilisation, tax compliance, and simplification in African countries using empirical data and revenue statistics. Future researchers could focus on an empirical evaluation of mobile money taxes and financial inclusion to ensure the taxes can be designed in such a way that they complement the revenue mobilisation drive and the fulfilment of SDGs as well as financial inclusion.



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