

Mobile money taxation and informal workers: Evidence from Ghana's E-levy

Nana Akua Anyidoho¹ | Max Gallien²  | Mike Rogan³ |
Vanessa van den Boogaard⁴

¹Institute of Statistical, Social and Economic Research, University of Ghana, Ghana

²Institute of Development Studies, University of Sussex, UK

³Rhodes University, South Africa

⁴University of Toronto, Canada

Correspondence

Max Gallien, Institute of Development Studies, University of Sussex, UK.
Email: m.gallien@sussex.ac.uk

Funding information

Bill and Melinda Gates Foundation, Grant/Award Number: OPP1197757; Direktoratet for Utviklingssamarbeid, Grant/Award Number: QZA-17/0153; Foreign, Commonwealth and Development Office, Grant/Award Number: 300211-101; Styrelsen för Internationellt Utvecklingssamarbete

Summary

Motivation: In recent years, governments in low-income countries have increasingly introduced taxes on mobile money transfers. These are often explicitly promoted as a way of taxing informal economic activity, but critics have noted their potential negative impact on lower-income groups and specifically those in the informal sector. Yet there is virtually no evidence base on the effects of mobile money taxes on informal workers.

Purpose: This article assesses how informal workers in Accra, Ghana, use mobile money and how they perceive Ghana's Electronic Transfer Levy (E-levy), introduced in May 2022. This provides a particularly interesting case study to explore the equity implications of the tax, as the policy was explicitly justified as a way of taxing the informal economy but also includes measures to limit the tax burden on lower-income groups.

Methods and approach: The article uses data from a survey of 2,700 self-employed informal workers in the Accra Metropolitan Assembly to capture citizen perceptions of the policy and to examine the likely impact of the E-levy on informal workers with reference to equity.

Findings: Overall, our results suggest that the E-levy is highly regressive. Further, we show that most informal workers disapprove of the E-levy, reflecting not just concerns about its equity impacts, but also disappointment with the government's performance.

Policy implications: Our findings suggest that taxes on digital financial services should be reconsidered from an equity perspective. While some policy measures, including those undertaken in Ghana, can protect low-income earners, they are often insufficient to counteract overall regressive impacts. Where they are implemented, social spending from the revenue from these taxes should target low-income populations in the informal economy, while governments should focus on building trust among informal workers with regard to revenue raising and spending.

KEYWORDS

digital financial services, Ghana, informal workers, mobile money, taxation

1 | INTRODUCTION

In recent years, low- and middle-income governments have increasingly turned to taxes on digital financial services (DFS), and particularly money transfers and mobile money, as a means to raise revenue (Matheson & Petit, 2021; Mullins et al., 2020). With growing fiscal deficits as a result of the COVID-19 pandemic and a recognition of the increasing use of DFS (Agur et al., 2020; Berger, 2020; The covid-19 crisis is boosting mobile money, 2020), there has been renewed interest in taxing mobile money (e.g., ATAF, 2020). Since the start of the pandemic, Tanzania, Ghana, and Cameroon have introduced mobile money taxes, building on several other recent examples throughout Africa.¹ To their proponents, mobile money taxes represent an opportunity to tap into the rapidly expanding user base of mobile money services and the profits of their providers, as well as to establish a relatively simple and transparent means of collection.²

Frequently, mobile money taxation has also been presented as a way to extract revenue from the large informal sectors that exist in many low-income countries, with increasing pressure to do so in the context of the pandemic (Gallien et al., 2021). As argued by Mpofu (2022, p. 2), “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.” This is in line with common arguments that the tax base needs to be broadened, and that the informal sector is otherwise evading taxes or is undertaxed. However, these assumptions have been increasingly challenged by evidence of the substantial formal and informal tax burdens on many informal workers (Anyidoho & Steel, 2016; Gallien & van den Boogaard, 2021; Rogan, 2019). There is thus a significant equity risk related to mobile money taxation, which may potentially add another tax burden on those already “operating at the margins of profitability” (Lahey, 2018, p. 39; see also Joshi et al., 2014).

Despite this possibility, the impact of mobile money taxation on equity is often overlooked. A recent meta-review found that there are no existing studies that provide robust “insights as to how best to tax DFS fairly and transparently” (Mader et al., 2022, p. 37). In contexts of high informality, it is particularly relevant to consider how informal workers use mobile money, how mobile money taxation impacts informal workers, and how informal workers perceive the fairness of mobile money taxes, in the context of an implicit fiscal social contract with the state. These questions are critical to formulating policy on mobile money taxes, and yet are remarkably absent from popular debates about the potential of DFS to spur financial inclusion, revenue gains, or both.

We explore these questions in the context of Ghana, which, after a heated political debate, recently introduced a 1.5% charge on electronic transfers known as the Electronic Transfer Levy, or the E-levy. There are at least two features that make Ghana's E-levy an important case study, especially with reference to informality. First, in the run-up to the policy's introduction, the goal of extracting revenue from the country's large informal sector was made explicit by the government (Yeboah, 2021). Second, Ghana's E-levy differs from many similar policies by including a minimum threshold that makes transactions under 100 cedis (GHS) —about USD 8—per day tax-free (Ansah, 2021).³ The government has thus made an effort to both “capture” informal workers and spare the most vulnerable. The likely impact on these groups, however, has yet to be explored. While the policy has been the subject of considerable popular and media attention, evidence-based debate has been limited.

We make use of a novel and statistically representative dataset of the self-employed in the informal sector in Accra to explore the likely impact of a mobile money tax on equity and informal workers' perceptions of the policy

¹This includes Uganda, Zimbabwe, Côte d'Ivoire, Kenya, and the Republic of the Congo. Malawi introduced a mobile money tax proposal, but it was abandoned before being approved (Clifford, 2020).

²Apeti and Edoh (2023) have argued that “mobile money significantly increases tax revenue in mobile money countries relative to non-mobile money countries.” For an introduction to the discussions of both the benefits and drawbacks of DFS taxes from a revenue perspective see also Munoz et al. (2022).

³Using the July 2022 exchange rate.

proposal in the context of their broader relationship with the state. To the best of our knowledge, this is the largest and most detailed study of the effects of DFS taxes on informal workers. Capturing the views of informal workers is particularly important given the challenges informal workers often face in finding political representation and voice (Hendriks et al., 2022; Kabeer et al., 2013), as well as the overall lack of inclusivity of the decision-making processes around the E-levy (e.g., Sensitize public, 2022). While focusing on the effects of informal workers as a whole, we disaggregate our analysis by income and gender, which we expect to impact mobile money usage and thus the distribution of new tax burdens. As discussed below, low-income individuals are likely to face a higher relative burden of mobile money taxes as they are more likely than high-income individuals to not have access to traditional financial services, and because a flat-rate tax will represent a larger share of their income. Relatedly, as women tend to be disproportionately represented among low-income individuals, they may be more affected by mobile money taxation than men.

We find that, while the threshold is effective in sheltering some low-income users from facing a new tax burden, the overall effect of the E-levy is highly regressive, in line with expectations, with users in the bottom quintile paying the largest share as a proportion of their income. Consequently, we can show that the removal of this threshold mooted by the Ministry of Finance but eventually rejected by parliament (Parliament rejects removal, 2022) would have a particularly adverse effects on lower-income users, despite the overall reduction in the levy's rate. We show that most informal workers do not support the E-levy, reflecting both concern about its impact on equity and disappointment with the government's overall performance. As we discuss in Section 6, a substantial part of our sample expresses not merely disaffection with the E-levy but with the government more widely, with over 80% of respondents indicating that they are not satisfied with its performance. Notably, while women are less likely to be liable for E-levy payments, they are substantially more likely to disapprove of its introduction.

These findings are significant beyond Ghana. As countries around the world explore the possibility of mobile money taxation to address fiscal deficits in the post-Covid world, there is a scarcity of evidence-based data to support policy-making. One group has been notably absent from a rapidly growing literature. Given the frequency with which informal workers are referenced in the discourse around mobile money taxation, there is little systematic data on their perceptions of these initiatives. This article seeks to provide a first step in addressing this gap, providing empirical evidence in the context of Ghana and highlighting issues of equity in policy implementation that may be significant in other contexts. While the precise outcomes of mobile money taxation will depend on the nature of the policy design and context, our findings highlight the need for more empirical evidence on the likely equity impacts of mobile money tax policies wherever they are considered.

The following section briefly reviews the literature and policy landscape related to taxation of DFS and identifies key knowledge gaps. Section 3 provides context about the emergence of the E-levy in Ghana, while Section 4 describes the novel sampling frame and data upon which the analysis is based. Section 5 explores the likely impact of the E-levy on equity and Section 6 captures informal workers' perception of the levy and determinants of support for the policy. Section 7 discusses the results and their implications for both theoretical and policy approaches to taxes on DFS.

2 | THE IMPACT OF MOBILE MONEY TAXATION: LIMITED EVIDENCE

The use of DFS has expanded widely in low- and middle-income countries in the past decade: in sub-Saharan Africa, 47% of the population (548 million people) had a registered mobile money account in 2020, with 29% of those accounts representing active users (Andersson-Manjang & Naghavi, 2021). Among low-income countries for which data is available, the average number of mobile money accounts is more than twice the number of commercial bank accounts, while in many lower-middle-income countries mobile money usage is the same as or higher than commercial bank usage (Bazarbash et al., 2020). Alongside this growth, governments have increasingly

sought to tax DFS (Fan et al., 2020; Okunogbe & Santoro, 2021). Mobile money taxes, in particular, are seen as relatively easy to capture (Lees & Akol, 2021), particularly in relation to, say, corporate income taxes on financial service providers. These taxes are often also motivated by a desire to capture revenue from workers in the informal economy, who are often framed as tax evaders.

While there have been few policy impact evaluations, popular perceptions of mobile money taxes have been largely negative, fuelling widespread industry, popular, and political resistance. In Uganda, for example, the tax faced massive civil society outcry and public protest (CSBAG, 2018; Lees & Akol, 2021). Some opposition is rooted in a concern that mobile money taxation may undermine financial inclusion and the development benefits that are often thought to accompany it (Ackah & Opoku, 2021; Clifford, 2020; Ndung'u, 2019; Whitehead, 2019). If businesses were less likely to use mobile money because of a new tax, then access to capital, business performance and growth, and business formalization would be negatively affected (Mader et al., 2022). There is limited evidence, however, of the impact of mobile money tax on mobile money usage. It is unclear whether immediate declines in usage after policy changes will be long-lasting or detrimental from a development perspective (Fuchs et al., 2016; Rukundo & Magumba, 2018). After the introduction of a tax on mobile money in Uganda, for instance, mobile money use recovered to pre-policy levels after 18 months (Clifford, 2020). More generally, the existing literature “says next to nothing about DFS impacts on businesses, industry and government, or the macroeconomy” (Mader et al., 2022, p. 33; Duvendack & Mader, 2019).

Another common concern about mobile money taxes is their impact on low-income groups. Some have suggested that mobile money taxes impose a disproportionate burden on lower-income and vulnerable groups because of the flat rate at which they are imposed and because lower-income groups have fewer financial service options (Clifford, 2020; UNCDF, 2021). In most low-income countries, only about 30% of the population use traditional banks (Munoz et al., 2022), with this wealthier segment of the population being better placed to shift between digital and traditional financial providers. By contrast, lower-income earners currently represent a significant proportion of DFS usage, with fewer options to avoid a sector-specific levy.⁴ Women, in particular, are often highlighted as a group likely to be disproportionately negatively affected by mobile money taxes, so such taxes may further worsen gender inequities in financial inclusion (Clifford, 2020).

Despite these concerns, data are limited on the implications of mobile money taxes on equity in contexts of high informality and unequal access to formal financial services. Critically, other outcomes often used to justify the introduction of mobile money taxes—including the broadening of the tax base or greater social spending—are hardly explored at all (Mader et al., 2022), while the political implications of a broad-based and unpopular tax are insufficiently considered. A recent meta-review found that there are no existing studies that provide robust “insights as to how best to tax DFS fairly and transparently” (Mader et al., 2022, p. 37). We attempt to add to the evidence base on mobile money taxes in the context of the informal economy in Accra at the time of the introduction of the E-levy.

3 | THE CONTEXT OF THE E-LEVY IN GHANA

In November 2021, Ghana's Minister of Finance and Economic Planning, Ken Ofori-Atta, announced the planned introduction of an Electronic Transaction Levy in the 2022 budget. The E-levy was originally proposed as a 1.75% charge on mobile money payments, bank transfers, point of sales transactions and inward remittances, though much of the public and policy discourse centred on mobile money transfers, known colloquially as MoMo. The

⁴In Uganda, for example, the percentage of the poor population who have a mobile money account increased from 10% to 17% from 2011 to 2017 (Munoz et al., 2022). While usage did not decrease after the introduction of the tax, the average transaction value per user decreased, indicating that larger-value tiers remained in the banking system where they do not attract transaction taxes (The Independent, 2020). This appears to confirm that “it is those conducting in smaller transactions sizes, predominantly the poor, that bear the brunt of the tax” (Clifford, 2020, p. 24). Similarly, the IMF speculated that the new tax on mobile money transactions was “likely to hit the rural poor disproportionately hard” (IMF, 2019, p. 13).

reform was explicitly motivated by a desire to tap into the “enormous potential” for tax revenue in the informal economy (Yeboah, 2021), with the informal economy described as “the principal target of the Levy” (Wales & Niesten, 2022). Implicit in this was a claim that the informal economy in Ghana is not currently taxed. The President himself stated,

We cannot continue to allow less than ten percent...of the population carry the direct tax burden of 30.8 million people. We must provide an opportunity for every Ghanaian to contribute towards nation building... [and] ensure that the hidden, submerged or informal economy is brought within the remit of the formal economy (Communications Bureau, 2022).

The tax was immediately challenged on several grounds: that it violated principles of taxation by potentially placing a double burden on taxpayers, that it would roll back progress on the digitalization of the Ghanaian economy, and, importantly, that it would increase the hardships of informal workers already hard hit by the pandemic (Ackah & Opoku, 2021; Nyabor, 2022a). In the face of widespread public opposition, the administration embarked on a nationwide campaign to sell the tax to the Ghanaian public. Within the context of contentious partisan debate around the E-levy bill in parliament, the minister and other members of the administration carefully framed the tax as an extension of President Akuffo-Addo's Ghana Beyond Aid agenda (Government of Ghana, 2019), emphasizing that the E-levy would mobilize revenue for development and diminish aid dependence. In particular, they argued, it would keep Ghana from returning to seek assistance from the International Monetary Fund (IMF) (Ghana 'Beyond Aid', 2022; Nyabor, 2022b).⁵

The E-levy was passed in parliament in March 2022 and rolled out on May 1, 2022. In response to criticisms about the potentially disproportionate impact of the tax on the poor, the Ministry of Finance introduced an exception for transactions of GHS 100 cedis or less a day. It claimed this accounted for 40% of transactions, and would thus provide sufficient relief for the poor (Ansah, 2021).⁶ It moreover argued that the E-levy would fund development projects that would benefit this same demographic by supporting spending on entrepreneurship, infrastructure, and youth employment. In addition, the rate of the tax was lowered to 1.5% on the value of transfer amounts over the threshold, in the “true spirit of burden-sharing” and to reduce “the impact on the average Ghanaian” (Government to re-submit, 2022).⁷ On 22 December 2022, Parliament approved a further reduction of the tax to 1% from January 2023, although a second amendment to the bill—the removal of the GHS 100 non-taxable threshold—was rejected (Parliament rejects removal, 2022).

While the government has thus taken steps to both capture new revenues and protect the poor, the impacts have yet to be explored. Key questions remain about the implication of the tax for informal workers, who represent 89% of employment nationally, with a higher proportion of women than men (Baah-Boateng & Vanek, 2020). The rest of this article aims to fill this knowledge gap by providing empirical evidence to inform the debate about the equity impacts of the E-levy.

⁵The reform has been used explicitly as a way to avoid an IMF bail-out (Inveen, 2022), with the potential to use new revenue from the levy as a form of collateralization to attract investors (Hearson & Abounabhan, 2022); this may make it difficult to repeal in future (Scrapping E-Levy, 2022). In July 2022, however, just two months after the introduction of the E-levy, the government announced that it would begin talks with the IMF for support.

⁶Considerable confusion remains about how the daily threshold will work, including with regard to the cumulative nature of transfers, the use of multiple accounts, and how the threshold will actually be enforced (Wales & Niesten, 2022).

⁷In addition to the GHS 100 daily threshold, other exemptions announced in the policy included transfers between accounts owned by the same person, transfers for payment of taxes and other charges on specific government platforms, and operational transfers between mobile money agents and their principals. In addition, while mobile money transfers done through mobile money agents fall under the E-levy, the practical challenges of differentiating between exempt and non-exempt amounts and transfers has meant that these transactions are not taxed, providing a loophole for mobile money users to avoid the tax.

4 | DATA AND METHODS

The data analysed in this article come from an original survey conducted in April and May 2022 with 2,700 self-employed informal workers in the Accra Metropolitan Assembly (AMA), which accounts for just over a third of both total urban employment in Ghana and of all urban informal employment (Baah-Boateng & Vanek, 2020).⁸ Using a two-step sampling method, our sample is representative of small unregistered economic units in the AMA.⁹ In line with recent estimates from the official Labour Force Surveys (see Baah-Boateng & Vanek, 2020), our data suggest that the vast majority (about 84%) of informal income-generating activities are operated by own-account workers,¹⁰ with men more likely to be employers than women (see Appendix: Table A1).

While being the first study to capture a representative sample of informal operators in Accra,¹¹ there are two key limitations to our data. First, the collection of information on mobile money usage before and immediately after the introduction of the levy does not account for how transaction behaviour might change due to the levy. We surveyed individuals in the month before (73% of the sample) and the month in which the E-levy was introduced (27% of the sample), both being periods when public debate about it was most active.¹² The simulated tax amounts that we present in this article are based on the assumption that transaction patterns and amounts would not change as a result of the introduction of the levy, or that they had not already changed in anticipation. While there has probably been some adjustment in usage since the introduction of the E-levy, this seems to us the most reasonable approach based on empirical evidence on usage in other contexts, given the absence of strong research on how usage will change in the medium term. There is evidence from Uganda, for example, that initial mobile money usage can decrease immediately after the implementation of an E-levy, but then rebound after the initial implementation period (ICTD, n.d.). There is further evidence that the anticipation of the E-levy may have already changed consumer behaviour (Ahead of E-Levy, 2022), though initial reports suggest that usage has already rebounded (Mobile money transactions fall, 2022). Where relevant in our analysis we have nevertheless controlled for the effects of people being surveyed before or after the implementation of the tax.

Second, there is the potential for recall bias among respondents, particularly in reporting mobile money transaction amounts. It was difficult to collect information on the previous month's transactions without asking for detailed recollections of expenditure; to overcome this, we asked respondents to estimate the amounts transacted above the threshold. Despite these limitations, we believe that the estimates presented here provide a useful baseline account of usage and perceptions of mobile money among a segment of the workforce in Ghana that is purported to be an important user of mobile money services, as well as an intended target of this levy.

⁸Accra attracts workers from across the country (and beyond) and has long been the focus of academic interest in the informal economy. This is due, in part, to its vibrant markets and high density of informal urban trade in which, historically, women have been prominent (Darkwah, 2022; Hart, 1973; Overå, 2007; Robertson, 1983).

⁹We used a two-stage cluster sampling approach. In the first stage, the clusters identified in the AMA, which in this case are the enumeration areas (EAs), were selected at random, though also taking into consideration income classification of communities. Once EAs were selected, a listing exercise was undertaken to determine a master list of households in each EA. For the second stage, respondents were sampled from the household master list if they owned or operated a business small (fewer than 10 employees) or income-generating activity. Employees were not included. The final sample was drawn from these listed household members after using a screening question on the registration of the business activity to narrow the sample further to activities that were unregistered (the criterion used as a proxy for informality). While the survey does not include informal employees, for simplicity we use "informal workers" interchangeably with "informal employers and own-account workers" in the remainder of this article.

¹⁰These are self-employed informal sector workers without any paid employees.

¹¹We use the term "informal operator" to denote the self-employed in the informal sector. This group includes both own account workers as well as employers. The self-employed are a subset of the informal sector which also includes employees and contributing family workers. The informal sector is, in turn, a subset of the informal economy which, using the internationally agreed International Labour Organization (ILO) definition, includes all economic activities by workers and economic units both within and outside the informal sector, which—de jure or de facto—are not covered or are insufficiently covered by formal arrangements (such as legal and social protection) (Husmanns, 2004; ILO, 2018).

¹²Questions were asked about activities in the months before the introduction of the E-levy, with reference to the use of mobile money—transactions during the previous calendar month (March or April, depending on the time of the interview)—to capture a snapshot of mobile money transactions prior to the introduction of the levy.

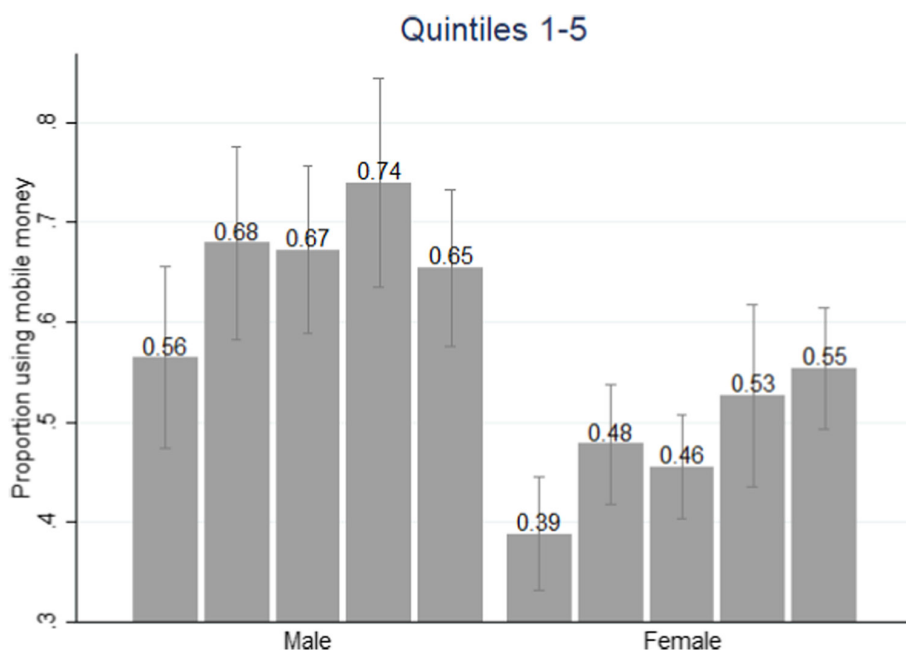


FIGURE 1 Proportion of the sample that uses mobile money for any type of transaction, by gender and earnings quintile.

Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted.

5 | ESTIMATED LIABILITY AND EQUITY OUTCOMES

To understand the impact of the E-levy, we first need to understand how workers in the informal sector use mobile money. Our survey suggests that just over half (51%) of the population of informally self-employed persons in Accra use mobile money. Mobile money transactions are important in the context of limited access to formal bank accounts (about 51% of Accra's informal operators and 41% of mobile money users do not have a bank account) and high usage of mobile money for business purposes.¹³ Reported mobile money usage is lowest among individuals in the first quintile, though across all earnings quintiles men were more likely than women to have used mobile money in the month prior to the survey (Figure 1). Meanwhile, though the top earning quintile reported transacting the highest average amount on the mobile money platform (about GHS 500 and GHS 700, respectively, for women and men), informal operators in the lowest-earning quintile transacted relatively more than those in several of the higher-earning groups (Figure 2). This could be explained by the fact that a larger percentage of informal operators in the lower-earning groups do not have a bank account and, therefore, rely more on mobile money services.¹⁴ An additional explanation is that operators in the lowest earnings quintile may operate high turnover business activities (such as fruit and vegetable sales) while making relatively low earnings or profits.

¹³The modal transaction type for mobile money was for direct transfers to other people, which was used by 46% of the sample (and by 91% of those who use mobile money). This was followed by the purchase of goods and services (16%; 31%), and, to a far lesser extent, for the payment of bills (less than 5%; 9%). Traders and manufacturers in non-consumable goods such as electronics and garments/textiles tended to have larger mobile money transactions, while food retailers reported comparatively lower usage.

¹⁴Among the population of self-employed as a whole, 43% in the lowest-earning quintile have bank accounts compared with 54% in the highest-earning quintile, using own weighted estimates.

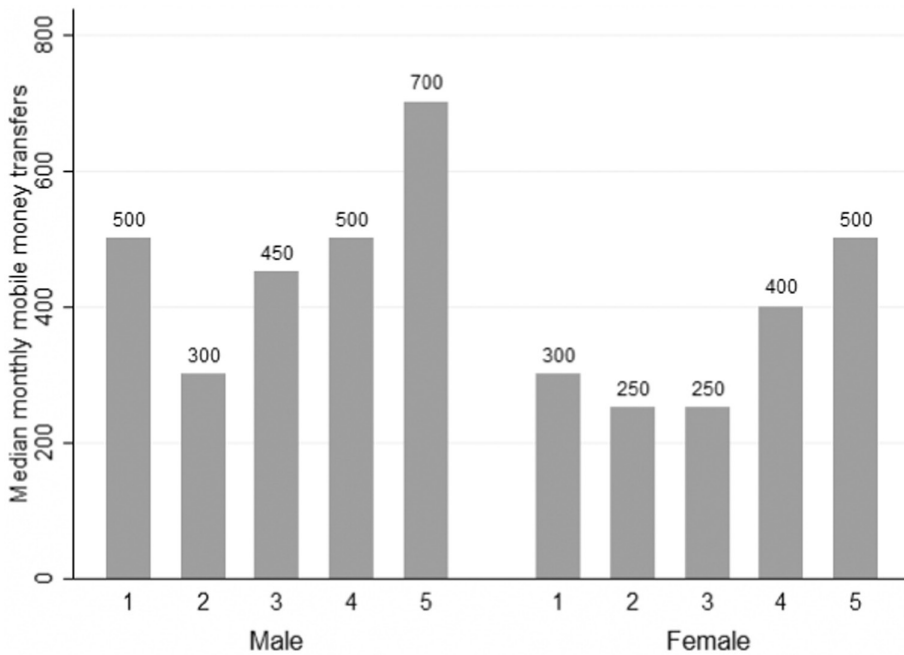


FIGURE 2 Median monthly mobile money transfers (in GHS) among mobile money users by gender and earnings quintile.

Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted.

Based on this usage data, we first estimate the likely liability, dependent on whether and how many mobile money transactions in the previous month exceeded the GHS 100 daily threshold. We find that 31% of the sample would be liable for some amount of E-levy payment, while of those who actually use mobile money, 61% would be liable. Here, our results map quite closely with the government's estimate that the threshold would protect about 40% of mobile money use from taxation. Moreover, our estimates suggest large gender differences in liability, though neither mobile money usage nor potential liability for the recently introduced E-levy appear to be correlated strongly with earnings (see [Figure 3](#)).

We then estimate the amount of tax to be paid by mobile money users who reported transacting over the threshold. [Figure 4](#) breaks this down by income quintile. Here, we find some indications that higher earners are liable for higher E-levy payments. Earners in the highest income quintile on average would be liable for just under GHS 15, with earners in the lowest quintile at roughly half that amount. However, the wide confidence intervals, and high variance in payments overall suggest the need for some caution in interpreting these results. We do not find a statistically significant difference between men and women in terms of their estimated liability. While [Figure 4](#) breaks down the estimated liability in GHS, [Figures 5](#) and [5b](#) analyse liability relative to earnings.

Here we find that, similar to other consumption taxes, the E-levy is highly regressive in its structure, with lower earners bearing a disproportionate burden of E-levy payments in relation to their earnings. [Figure 5](#) shows that, among all mobile money users (both above and below the threshold), simulated E-levy payments would amount to about 4% of reported monthly earnings for the lowest-earning quintile and less than 1% for the two highest earning quintiles. [Figure 5b](#) then restricts the analysis to mobile money users who reported transacting above the threshold and shows that, within the levy's target group, the structure of payments is highly regressive. While estimated monthly E-levy payments represent around 1% of monthly earnings for those in the highest earning quintile, they represent an average of 7%, in the lowest-earning quintile. While the difference

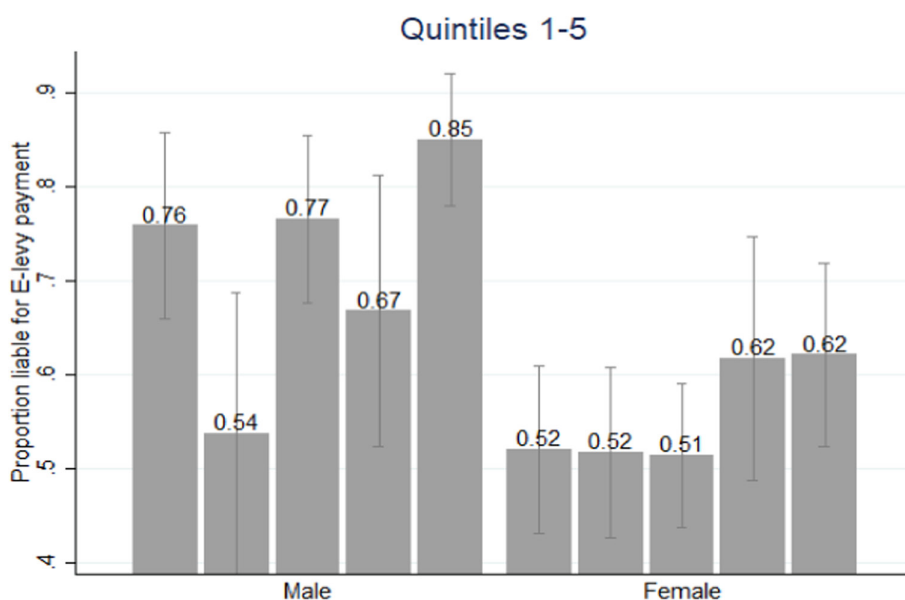


FIGURE 3 Proportion of mobile money users liable for an E-levy payment, by gender and earnings quintile. Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted.

between all income quintiles except the 4th and 5th are clearly statistically significant, we do not find a significant difference between genders, but do find a similarly regressive pattern for both men and women.¹⁵

Not only is the E-levy likely to place a disproportionate burden on the lowest-earning operators in the informal sector, but the relative burden of the levy is very dispersed within the first quintile (Figure 6). The values above the median are particularly high for the first and second quintiles for both women and men. Among women, for example, the share of monthly earnings that would potentially be paid towards the E-levy is as high as about 17% for the lowest-earning quintile. Similarly, among men, those in the lowest quintile would pay up to about 14% of their earnings towards the levy. Therefore, the average shares presented in Figure 5 obscure a large degree of variation in the relative burden of the E-levy among the lowest-earning operators in the informal sector.

Do these findings hold in light of the recent revision to the E-levy's structure? Effective from January 11, 2023, the levy's rate was reduced from 1.5% to 1%. A second amendment to the bill proposed by the Minister of Finance in the 2023 budget included removing the GHS 100 threshold, which would have meant that all mobile money transactions, including very small amounts, would be taxable. While this proposed change was rejected by parliament (Parliament rejects removal, 2022), it is plausible that it will remain on the table as a future adjustment as the government seeks to "aggressively" mobilize resources (Kwafo, 2022). Since the threshold was initially designed to protect low-income users of mobile money, it is important to simulate whether its removal would likely to have any effect on the distribution of tax liability and, in particular, whether lower-income groups are likely to be more vulnerable to additional levy payments. Figures 7 and 7b simulate the changes to the E-levy with the lower rate and no threshold and the lower rate with the original threshold intact, respectively.

As expected, when the new E-levy rate (1%) is simulated without the protective threshold, the main "effect" of the new levy schedule, as shown in the figure, is a more regressive payment structure. Figure 7 is comparable with

¹⁵Some differences also emerge across sectors. We find that home-based workers have the highest simulated effective E-levy rate, with nearly 4% of monthly earnings estimated to be payable to the levy based on past transaction behaviour, with two of the other largest groups, street vendors and market traders, at just above 1% on average – though there is substantial variation within groups.

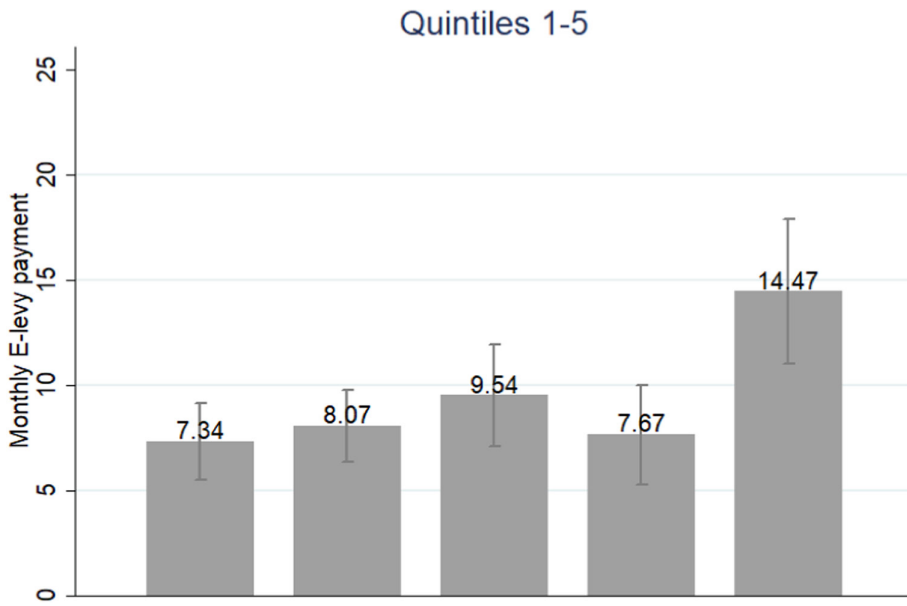


FIGURE 4 Simulated average monthly E-levy payment (in GHS) among informal operators who reported liability, by earnings quintile.

Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted. Responses are conditional on transacting above the threshold.

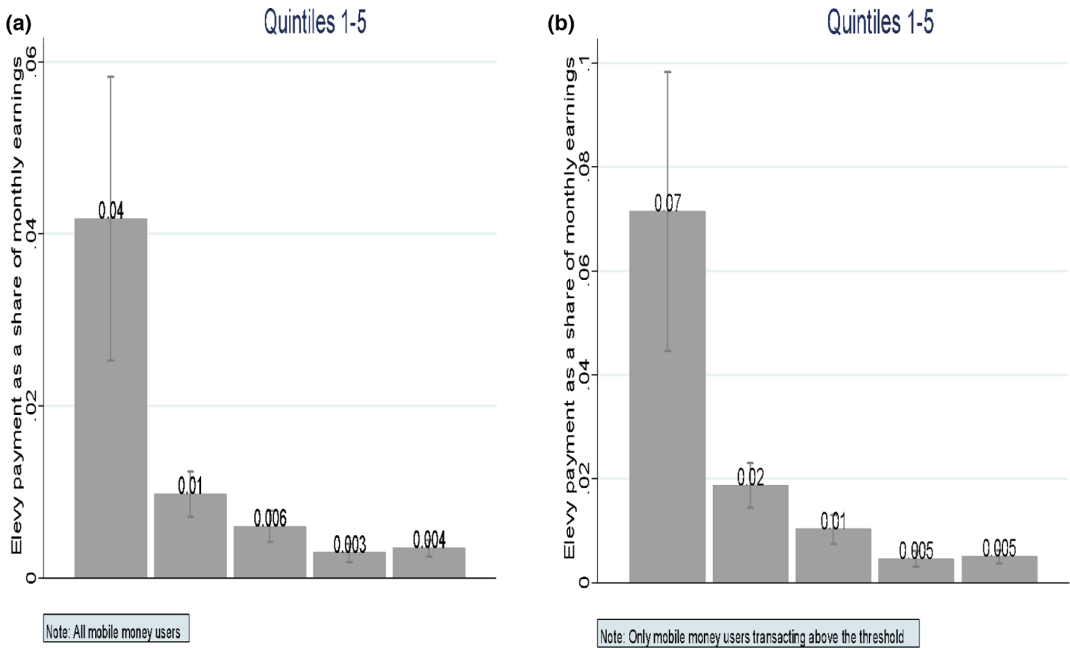


FIGURE 5 a-b. Simulated average monthly E-levy payment as a share of reported monthly earnings, by earnings quintile.

Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted. Responses are conditional on mobile money usage (Figure 5a) and transacting above the threshold (Figure 5b).

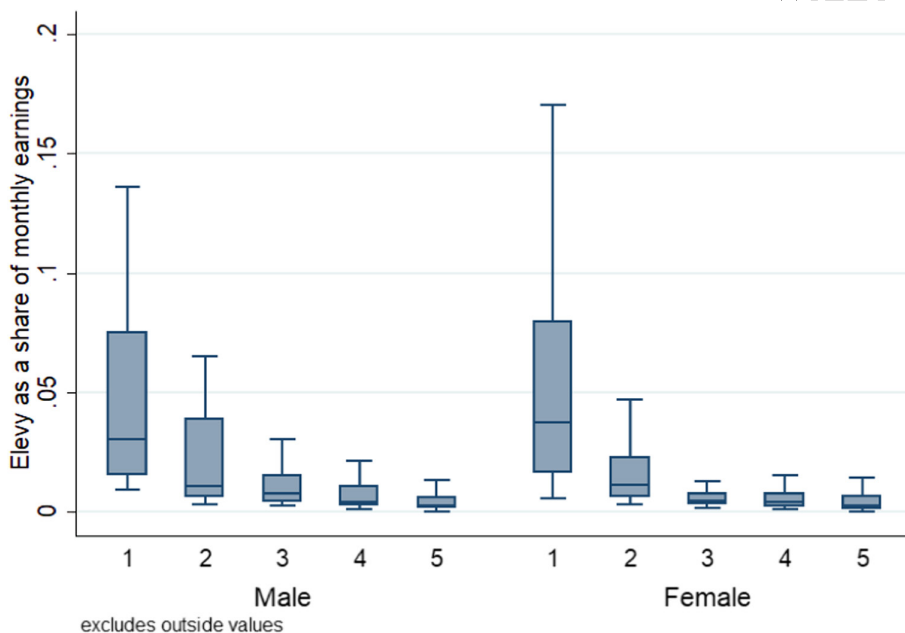


FIGURE 6 Variation of simulated monthly E-levy payments as a share of net earnings, by gender (earnings quintiles 1–5).

Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted. Estimates are conditional on transacting above the threshold. The box plot identifies the minimum, first quartile (p25), median (p50), third quartile (p75), and maximum values. An outside value is defined as a value that is smaller than the lower quartile minus 1.5 times the interquartile range, or larger than the upper quartile plus 1.5 times the interquartile range (inner fences).

Figure 5 and shows that, with the threshold removed, the lowest-earning quintile would pay, on average, 7% of their monthly earnings towards the E-levy. Since only about half of women in the lowest three quintiles transacted above the erstwhile protective threshold (see Figure 3), this means that a large group of low-earning informal workers not originally paying the levy would be required to pay if the threshold were removed. For these groups, the effect of the new lower rate would be more than offset by the disappearance of the threshold. At the top end of the earnings distribution, simulated E-levy payments as a share of monthly earnings would remain largely unchanged. Thus, while absolute E-levy payments would increase slightly for all earnings groups (not shown), the structure of the levy becomes more regressive once the protective threshold is removed. Most importantly, the finding that the average share of monthly earnings paid in E-levy rates by the lowest quintile increases from 4% (see Figure 5) to 7% suggests that the threshold provides at least some protection for the lowest earners in Accra's informal economy. Figure 7b provides additional support for this claim by showing that, when the lower rate is combined with the threshold, the lowest-earning quintile would pay about 3% of their monthly earnings towards the E-levy, ceteris paribus. The transfer threshold therefore appears to be an important instrument for protecting the lowest earnings in Accra's informal sector, irrespective of the rate at which the levy is set.

6 | PERCEPTIONS OF THE E-LEVY

The introduction of the E-levy came at the end of a heated public and political debate in Ghana. The debate touched upon the government's record and capacity, as well as the country's wider social fiscal contract, and the role of informal workers within it.

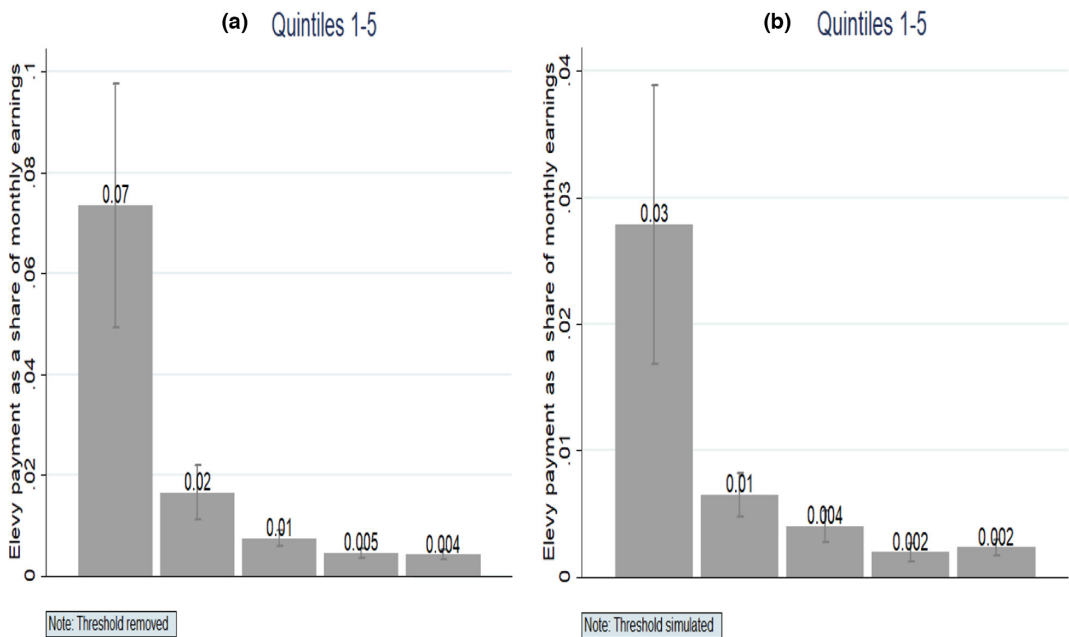


FIGURE 7 a–b. Simulated average monthly E-levy payment as a share of reported monthly earnings, by earnings quintile (updated with monthly threshold removed).

Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted. Responses are conditional on mobile money usage. [Figure 7a](#) simulates the lower (1%) E-levy rate without the protective threshold. [Figure 7b](#) simulates the new lower rate with the original threshold intact.

Understanding informal workers' perspectives on the policy is thus important, though their voices have largely been absent from public debate. Overall, we find overwhelming resistance to the E-levy, both among those who are liable to pay the E-levy and those who are not, with 83% disagreeing with the government's proposal to tax mobile money. This reflects broader attitudes across society: a nationally representative survey in 2022 found that only 19% of Ghanaians either approve or strongly approve of the levy (Afrobarometer, 2022).

Our findings suggest that this lack of support is rooted in concerns about fairness and equity ([Figure 8](#)). Given the degree to which the levy was explicitly targeted at informal workers, we may assume that informal workers would reject the tax due to its likely effect on them in particular. In line with this assumption, more than a third of respondents who disagreed with the proposal mentioned "it will particularly affect people like me" as one of the main reasons for their lack of support. However, this was not the most cited reason. Concerns around equity and fairness were more dominant. Just under half of those who disagreed with the proposal noted that "it will particularly affect the poor," while close to 40% pointed to concerns over fairness ("it is not a particularly fair tax"). In similar terms, over 40% of those who disagreed with the levy also noted that "the tax burden is already too high." This is particularly significant, as part of the government's narrative for the introduction of the E-levy had been the importance of "broadening the tax net" to capture informal workers, the implication being that informal workers were not being taxed. This assumption is countered by a growing body of evidence that shows that informal workers are far from "untaxed," paying a range of formal and informal levies (Joshi et al., 2014; Rogan, 2019). Where there is support for the E-levy, this is based on perceptions of public revenue needs, rather than fairness, ease of payment, and transparency ([Figure 9](#)). This implies that, of the different arguments that the government has put forward, the revenue imperative has cut through most clearly—at least among informal workers in Accra.

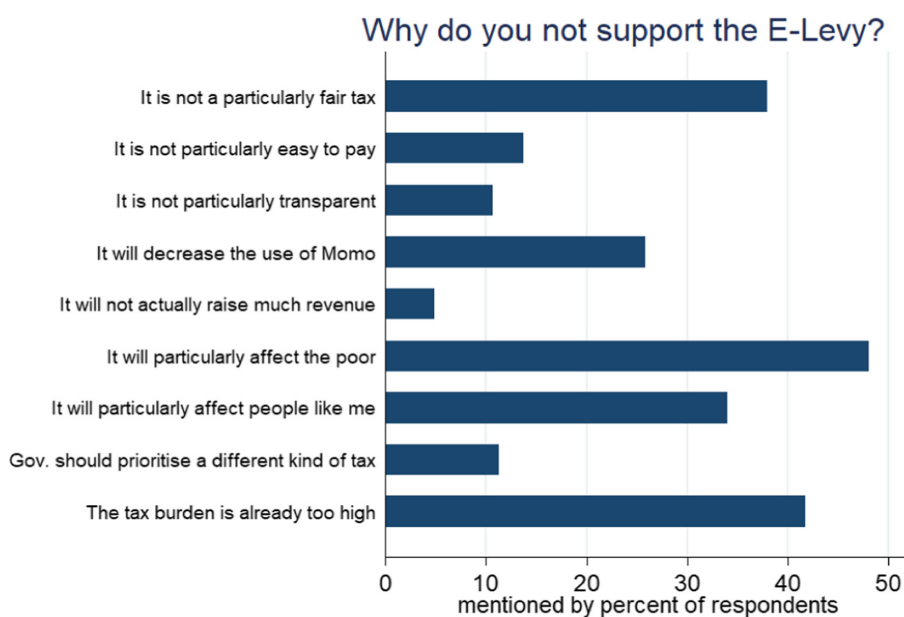


FIGURE 8 Distribution of reasons given by respondents who did not support the introduction of the E-levy. Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted. Multiple responses possible, 2,205 respondents provided an answer to this question.

To better understand who is likely to support (and not support) the E-levy, we ran two exploratory regressions, with support for the E-levy as the binary dependent variable. The first includes a range of demographic characteristics—age, gender, education—as well as other business characteristics that we hypothesize may affect support for the E-levy. These include: income, which we anticipate may be relevant given the equity considerations discussed above; access to a formal bank account, which may affect the extent to which businesses are affected by the transaction tax; whether they have paid employees; and whether they have used mobile money to make any transactions in the past month. The second regression adds additional variables that describe general attitudes about governance in Ghana. This includes tax morale, support for the governing party, satisfaction with the government, and trust in the government with respect to spending taxes, which we measure as how unlikely respondents find it that the government will misuse public revenues.¹⁶ We expect all these variables to be positively correlated with support for the E-levy (Table A2).

Several key findings emerge and are described in Table 1.¹⁷ First, women in Accra's informal sector are substantially and significantly less likely to support the E-levy. While 21.3% of the men in our sample expressed support for the E-levy, the same was true for only 12.2% of women. Remarkably, this gender gap remains robust to the introduction of a range of demographic controls and political allegiances. We suggest three hypotheses as to what may drive these differences. First, while these findings remain robust to the inclusion of controls for common sectoral breakdowns (such as street vending), women may be over-represented in some subsectors that have a particularly high turnover in relation to their profits, and hence be particularly affected by the E-levy. Cooked food presents a prime example for this: 96% of the informal workers in our sample working in the production of

¹⁶See Table A2 in the appendix for a full summary of the respective questions used for these variables.

¹⁷As the interviews for the survey were conducted before and after the introduction of the E-levy, we have also considered the possibility that the timing of the interview may have affected the results. Consequently, we have rerun these regressions while adding the month of the interview as a control variable. This did not result in any meaningful changes to any of the results presented here—however it does make “age” significant at the 0.01 level rather than the 0.05 level in the 2nd model. Similarly, we have added controls based on whether respondents used mobile money to pay for goods and services or for transactions to other people and found no meaningful changes to any of the results presented here.

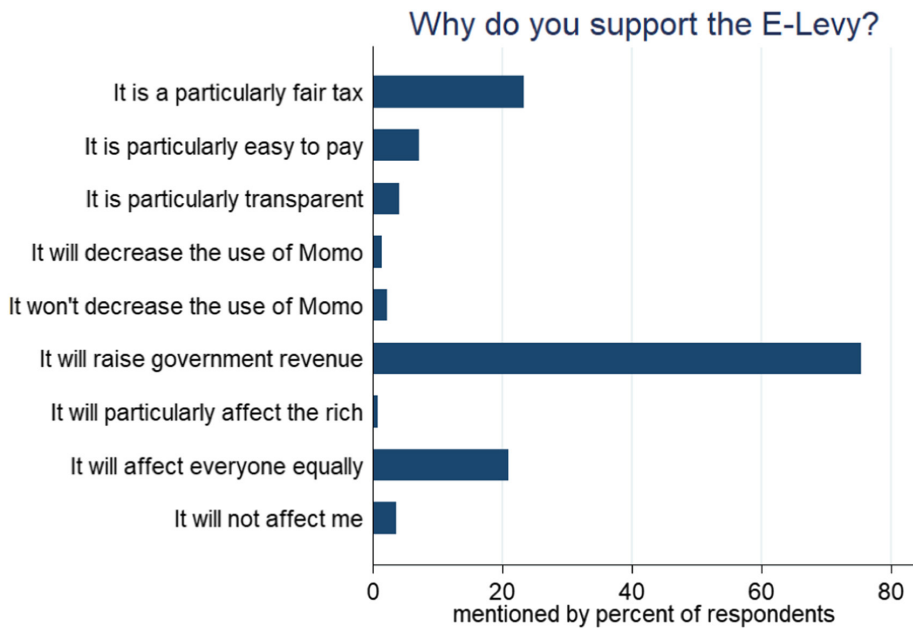


FIGURE 9 Distribution of reasons given by respondents who supported the introduction of the E-levy. Source: WIEGO/ICTD/ISSER Informal Taxation Survey (2022). Notes: the data are weighted. Multiple responses possible, 398 respondents provided an answer to this question.

cooked food and 94% of the workers working in its retail are women. Second, the gender gap in E-levy perceptions might be driven by women's different MoMo usage patterns, with, for example, a different likelihood of making payments for private purposes. Third, we hypothesize, based on anecdotal evidence and conversations with stakeholders, that for women who have traditionally had fewer alternative avenues to conduct similar transactions and who started adopting MoMo only recently, the introduction of the E-levy might be perceived in particular as a “bait and switch” on the part of the government—“you have managed to get us on board this newfangled thing and now you want to tax us for its use”—and hence be seen particularly negatively.¹⁸ We cannot examine these drivers more here—gendered perceptions of mobile money taxation require further exploration in future research.

We also find that older and more educated individuals are more likely to support the E-levy, though other features of informal businesses that we hypothesized would influence support for the E-levy—income, access to a bank account, whether an informal business has employees—do not appear to do so. Somewhat strikingly, actually having used mobile money in the past month is significantly and positively correlated with support for the E-levy, suggesting that perceptions about the E-levy might be less driven by personal use than might have been expected.

Finally, wider political perceptions are strongly correlated with support for the E-levy. This is unsurprising, given the highly polarized and politicized discussion of the E-levy in the months prior to its adaptation, and the way in which it has been associated with the reputation and trustworthiness of the government in public discourse. In line with our a priori expectations, we find that higher satisfaction with the government's performance is strongly and positively correlated with support for the E-levy. Similarly, higher trust in the government (measured through a higher belief that misuse of collected taxes is unlikely), and higher levels of tax morale, are all associated with a higher level of support for the E-levy. However, political affiliation is less associated with support for the E-levy than we expected. One of

¹⁸We thank Dorcas Ansa of WIEGO for drawing our attention to this possibility.

TABLE 1 Determinants (log odds) of support for the E-levy (estimation by logistic regression)

	(1)	(2)
age	0.026** (0.007)	0.018* (0.008)
female	-0.463** (0.160)	-0.624** (0.189)
income level	0.089 (0.130)	0.000 (0.143)
education level	0.306* (0.131)	0.473** (0.157)
employees	0.348 (0.197)	0.306 (0.241)
banked	0.132 (0.160)	0.227 (0.185)
MoMo Use	0.676** (0.166)	0.602** (0.179)
satisfaction		0.647** (0.067)
npp supporter		0.947** (0.179)
taxmorale		0.279** (0.068)
trust		0.171* (0.076)
Numb. Of obs.	2,325	2,325
Weighted	Yes	Yes
Rseudo R ²	0.053	0.244

**p < 0.01; *p < 0.05; the results describe a logistic regression, where age is measured in years, female, employees, MoMoUse, NPP supporter and banked are all dummy variables, trust and tax morale is measured on a scale from 0 to 4, satisfaction is measured on a scale from 1 to 5, and income and education levels are measured on a scale from 1 to 3.

the most common talking points throughout the pitched political battles over the introduction of the tax has been that support has been polarized along political lines. We do find some support for this claim—expressing support for the ruling party (New Patriotic Party—NPP) is significantly correlated with support for the E-levy. However, many of these findings need to be evaluated against the extent of the policy's unpopularity. While NPP supporters were more likely to support the E-levy, support for the E-levy is only at 32% even among NPP party supporters in our sample.

Overall, these results suggest that support for mobile money taxation among informal workers is deeply dependent on people's evaluation of the current government and its trustworthiness—not just in collecting a new tax, but also in spending it. And that perception is largely negative – over 80% of our sample are not satisfied with the government's performance and two-thirds find it likely that the government will misuse collected revenue. The importance of these results is twofold—it highlights the perceptions of a group that was specifically targeted with this tax, but also provides an analysis of perceptions that have been shown to be mirrored in Ghana more widely.¹⁹

¹⁹In a nationally representative survey, Afrobarometer asked respondents: "The government promises to use the revenue to be generated from the electronic financial transaction levy or e-levy to fund development programmes. How confident are you that the government will fulfil this pledge?" 75% of their respondents were either not very confident or not at all confident (Afrobarometer, 2022).

7 | DISCUSSION AND POLICY IMPLICATIONS

During the intense public debate around the E-levy in Ghana, one common claim was that criticism of the E-levy was politically motivated. However, within Accra's informal sector, most supporters of both major parties were against the tax. How can we explain this general antipathy to the E-levy among informal workers, and what are its implications? The most common reasons given for opposition to the E-levy referenced fairness, equity, and the perceived negative impact of the tax on the poor. Our analysis of the E-levy's distributional impacts supports these equity concerns. Though the GHS 100 threshold protects low earners, not all lower-income users are shielded from the tax. As we have highlighted above, some of the poorest workers in Accra's informal sector would still be liable for some E-levy payment. Despite the threshold, we find that the E-levy is highly regressive, as one would expect with a flat tax.

This is a particularly important finding as the designers of Ghana's E-levy framed the tax in terms of fairness and equity. They argued that it would lead to a better distribution of the tax burden—bringing ostensibly “untaxed” informal workers into the tax net while, at the same time, instituting measures to reduce undue impact on lower-income groups, within which informal workers and women are disproportionately represented. Our data show that, at least in Accra's informal sector, these claims were received with a great deal of scepticism, in line with generally low trust in the government and overall dissatisfaction with the government's performance. These general concerns about the tax's equity implications, and especially concerns around an increased tax burden, need to be understood in conjunction with the fact that, despite government narratives to the contrary, many informal workers are already paying a range of taxes and fees, representing a considerable fiscal burden (Anyidoho et al., 2022).

Our analysis also points to the need for future research on the relationship between mobile money taxation, informality, and the underlying social contract. In particular, future research could usefully study the long-term effects of the E-levy on both perceptions and behaviour. Further, the gendered dynamics require greater inquiry. Our evidence suggests that both mobile money usage and support for mobile money taxation is gendered. While we have put forward some reflections on possible mechanisms that may drive these gendered perceptions, considerably more research is needed. For instance, do women transact more personal business that might have less financial reward to offset the cost of the tax, and might this help explain the greater distaste that women in our sample express towards the tax, despite their lower use of, and lower transaction amounts on, mobile money relative to men? How does the E-levy affect financial inclusion among women, especially considering the already lower usage of mobile money among women, as well as clear evidence of regressivity in the structure of the E-levy?

While there is thus need for further research on the impacts and gendered effects of mobile money taxes, our findings on the equity impacts of the E-levy and the perceptions of the state that underly opposition to the tax point to clear policy implications, for both the Ghanaian government and others considering mobile money taxation as a new source of revenue. First, some policy measures may help to improve the equity of mobile money taxes. As we have shown, the threshold shields some lower-income groups from E-levy payments and might influence the design of mobile money taxes. However, it will be important for policy-makers to monitor the effects of this threshold, especially in the context of inflation, and consider raising it further. Furthermore, the fact that the tax is highly regressive, despite the threshold in place in Ghana, should lead to a rethinking of the fairness of the wider tax system, while feeding into considerations of how to spend the income generated through mobile money taxes in order to strengthen their distributional potential.

Second, trust in the government—or more broadly, the social contract between the state and its citizens—has been a critical factor shaping the debate around the E-levy. As we have shown above, satisfaction with the government and trust in its ability to spend tax revenue in a way that brings wider benefits are low, shaping poor support for mobile money taxation. In other contexts, low trust and low expectations between state structures and informal workers have contributed to self-reinforcing loops of economic neglect and underdevelopment of large sections of economic activity (Tendler, 2002). Whether through better communication, a reform of the levy or visible service provision, demonstrating that the government is delivering on its accountability promises related

to the tax (Jonny-Nuekpe, 2022), our analysis of Ghana's E-levy highlights a need for the state to (re)build trust, especially with lower-income groups and informal workers.²⁰

ACKNOWLEDGMENTS

We would like to thank Simon Bawakyillenuo and his team at ISSER for their excellent work in the survey implementation; Dorcas Ansah and Kweku Kyere and the entire WIEGO Accra team for their invaluable support; Siviwe Mhlana, Ghida Ismail, and Daniel Kennedy Amoah for their research assistance; and also three anonymous reviewers and our ICTD Digitax colleagues for their helpful comments.

FUNDING INFORMATION

This work was supported by the Swedish International Development Cooperation Agency, UK Aid under grant number 300211-101, the Bill & Melinda Gates Foundation under grant number OPP1197757, and the Norwegian Agency for Development Cooperation under grant number QZA-17/0153. A CC BY or equivalent licence is applied to the Author Accepted Manuscript arising from this submission, in accordance with funders' open access conditions.

DATA AVAILABILITY STATEMENT

A process to make the data of this project available is currently in process. In the meantime, please contact the authors for further information.

ETHICS STATEMENT

This article reports analysis of primary data. The ethics of data collection and analysis were reviewed by the relevant bodies at both the International Centre of Tax and Development and the University of Ghana.

ORCID

Max Gallien  <https://orcid.org/0000-0002-9620-8433>

REFERENCES

- Ackah, C. G., & Opoku, K. (2021, December 3). Debating the electronic transaction levy: Our reasoned opinion. *The Business & Financial Times*. <https://thebftonline.com/2021/12/03/debating-the-electronic-transaction-levy-our-reasoned-opinion/>
- African Tax Administration Forum. (2020, August 25). *Taxing the digital economy: COVID-19 heightens need to expand resource mobilisation base*. <https://www.ataftax.org/taxing-the-digital-economy-covid-19-heightens-need-to-expand-resource-mobilisation-base>
- Afrobarometer. (2022, July 13). *Majority of Ghanaians oppose e-levy, not confident it will fund development programmes, new Afrobarometer study shows* [Press release]. <https://www.afrobarometer.org/articles/majority-of-ghanaians-oppose-e-levy-not-confident-it-will-fund-development-programmes-new-afrobarometer-study-shows/>
- Ahead of E-Levy: Telcos lose 300,000 mobile money subscribers in April. (2022, June 1). *GhanaWeb*. <https://www.ghanaweb.com/GhanaHomePage/business/Ahead-of-E-Levy-Telcos-lose-300-000-mobile-money-subscribers-in-April-1550540>
- Agur, I., Martínez Peria, S., & Rochon, C. (2020, July). *Digital financial services and the pandemic: Opportunities and risks for emerging and developing economies* (IMF Special Series on COVID-19). International Monetary Fund. <https://www.imf.org>

²⁰In all its promises when trying to pass the tax bill, the government stopped short of a clear commitment to earmarking revenue from the E-levy, which has been a strategy elsewhere, including in Côte d'Ivoire. The trade-offs and impact of earmarking require greater exploration, particularly given Ghana's own contentious history with earmarking revenue. It is also worth noting that the redistribution potential of the E-Levy in Ghana, and particularly any redistribution benefits for informal workers, may be increasingly unlikely given both the economic and currency crisis and the lowering of revenue projections from the tax. Indeed, by July 2022 the Ghanaian government had reduced revenue expectations from the tax by at least ten times, from GHS 7 billion (a November 2021 estimate) to GHS 611 million cedis (Dzawu, 2022). This does not diminish the importance of building trust with citizens and strengthening the accountability of new taxes but increases the challenge for the government to deliver something tangible to informal workers.

[org/-/media/Files/Publications/covid19-special-notes/en-special-series-on-covid-19-digital-financial-services-and-the-pandemic.aspx?la=en&utm_medium=email&utm_source=govdelivery](https://www.imf.org/-/media/Files/Publications/covid19-special-notes/en-special-series-on-covid-19-digital-financial-services-and-the-pandemic.aspx?la=en&utm_medium=email&utm_source=govdelivery)

- Andersson-Manjang, S. K., & Naghavi, N. (2021). State of the industry report on mobile money 2021. GSMA. <https://www.gsma.com/sotir/download/752/?tmstv=1681831170>
- Ansa, M. (2021, November 18). MoMo tax won't affect about 40% of Ghanaians – Adu Boahen. Citi Newsroom. <https://citinewsroom.com/2021/11/momo-tax-wont-affect-about-40-of-ghanaians-adu-boahen/>
- Anyidoho, N. A., Gallien, M., Ismail, G., Juergens-Grant, F., Rogan, M., & van den Boogaard, V. (2022). *Tight tax net, loose safety net: Taxation and social protection in Accra's informal sector* (WIEGO Working Paper No. 45). Women in Informal Employment: Globalizing and Organizing. <https://www.wiego.org/sites/default/files/publications/file/working-paper-45-taxation-socialprotection.pdf>
- Anyidoho, N. A., & Steel, W. F. (2016). Informal-formal linkages in market and street trading in Accra. *African Review of Economics and Finance*, 8(2), 171–200. <https://www.ajol.info/index.php/aref/article/view/162160>
- Apeti, A. E., & Edoh, E. D. (2023). Tax revenue and mobile money in developing countries. *Journal of Development Economics*, 161. 103014. <https://doi.org/10.1016/j.jdeveco.2022.103014>.
- Baah-Boateng, W., & Vanek, J. (2020, January). *Informal workers in Ghana: A statistical snapshot* (WIEGO Statistical Brief No. 21). Women in Informal Employment: Globalizing and Organizing. <https://www.wiego.org/publications/informal-workers-ghana-statistical-snapshot>
- Bazarbash, M., Moeller, J., Nakaguchi Griffin, N., Carcel Villanova, H., Chhabra, E., Fan, Y., & Shirono, K. (2020, October 7). *Mobile money in the COVID-19 pandemic* (IMF Special Series on COVID-19). International Monetary Fund. <https://www.imf.org/-/media/Files/Publications/covid19-special-notes/en-special-series-on-covid-19-mobile-money-in-the-covid-19-pandemic.aspx>
- Berger, M. (2020, May 15). The coronavirus is upending cash economies. Mobile money could emerge as the winner. *Washington Post*. <https://www.washingtonpost.com/world/2020/05/15/coronavirus-is-upending-cash-economies-mobile-money-could-emerge-winner/>
- Clifford, K. (2020). The causes and consequences of mobile money taxation: An examination of mobile money transaction taxes in sub-Saharan Africa. *GSM Association*. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/06/GSMA_The-causes-and-consequences-of-mobile-money-taxation.pdf
- Civil Society Budget Advocacy Group. (2018). 8 Reasons why taxing transaction value on mobile money is a bad idea! <https://www.csbag.org/download/8-reasons-why-taxing-transaction-value-on-mobile-money-is-a-bad-idea/?wpdmd=1717&refresh=62e17872ad8991658943602>
- Communications Bureau. (2022, February 28). Ghana: “E-levy will expand tax base for sustained dev’t-- reduce debt burden” – President Akufo-Addo. Office of the President, Republic of Ghana. <https://presidency.gov.gh/index.php/briefing-room/news-style-2/2148-e-levy-will-expand-tax-base-for-sustained-dev-t-reduce-debt-burden-president-akufo-addo>
- Darkwah, A. K. (2002). *Going global: Ghanaian female transnational traders in an era of globalization* (Publication No. 3060399) [Doctoral dissertation, University of Wisconsin–Madison]. ProQuest Dissertations and Theses Global.
- Duvendack, M., & Mader, P. (2019). Impact of financial inclusion in low- and middle-income countries: A systematic review of reviews. *Campbell Systematic Reviews*, 15(1–2), e1012. <https://doi.org/10.4073/csr.2019.2>
- Dzawu, M. M. (2022, July 27). Ghana cuts revenue forecast from E-Levy after political fallout. *Bloomberg*. <https://www.bloomberg.com/news/articles/2022-07-27/ghana-cuts-revenue-forecast-from-e-levy-after-political-fallout> (July 28, 2022).
- Fan, H., Liu, Y., Qian, N., & Wen, J. (2020). *Computerizing VAT invoices in China* (NBER Working Paper No. 24414). National Bureau of Economic Research. <https://doi.org/10.3386/w24414>
- Fuchs, M., Musuku, T. B., & Symington, D. (2016, October). *Mobile money taxation: Policy issues and considerations for Pakistan and Tanzania*. World Bank and Oxford Policy Management. <https://docplayer.net/42224516-Mobile-money-taxation-policy-issues-and-considerations-for-pakistan-and-tanzania.html>
- Gallien, M., & van den Boogaard, V. (2021). *Rethinking formalisation: A critique and new research agenda* (ICTD Working Paper No. 127). International Centre for Tax and Development at the Institute of Development Studies. <https://doi.org/10.19088/ICTD.2021.016>
- Gallien, M., Moore, M., & van den Boogaard, V. (2021, April). *Taxing the informal economy is not a silver bullet for financing development – or the Covid-19 Recovery* (ICTD Summary Brief No. 24). International Centre for Tax and Development at the Institute of Development Studies. <https://www.ictd.ac/publication/taxing-informal-economy-not-silver-bullet-financing-development-covid-19-recovery/>
- Ghana ‘Beyond Aid’ requires Ghanaians to support E-Levy. (2022, January 28). *GhanaWeb*. <https://www.ghanaweb.com/GhanaHomePage/business/Ghana-Beyond-Aid-requires-Ghanaians-to-support-E-levy-Ursula-1456042>
- Government of Ghana. (2019, April). *Ghana Beyond Aid: Charter and strategy document*. http://osm.gov.gh/assets/downloads/ghana_beyond_aid_charter.pdf (July 27, 2022).

- Government to re-submit E-Levy to Parliament—Finance Minister. (2022, January 20). Ghana News Agency. <https://gna.org.gh/2022/01/government-to-re-submit-e-levy-to-parliamentfinance-minister/>
- Hart, K. (1973). Informal income opportunities and urban employment in Ghana. *Journal of Modern African Studies*, 11(1), 61–89. <https://doi.org/10.1017/s0022278x00008089>
- Hearson, M., & Abounabhan, M. (2022, June 21). Taxes as collateral: To risk or de-risk? ICTD. <https://www.ictd.ac/blog/taxes-collateral-risk-de-risk/>
- Hendriks, T. D., Verbuyst, R., & Kaag, M. (2022). Fraught with friction: Inclusive development for informal workers in urban Ghana. *The European Journal of Development Research*, 34(5), 2305–2323. <https://doi.org/10.1057/s41287-022-00511-7>
- Hussmanns, R. (2004). *Measuring the informal economy: From employment in the informal sector to informal employment* (Working Paper No. 53). International Labour Office. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_079142.pdf
- International Centre for Tax and Development. (n.d.). *Digital payments taxation factsheet: Uganda*. <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/17195>
- International Labour Organization. (2018). *Women and men in the informal economy: A statistical picture* (Third ed.). http://www.ilo.org/global/publications/books/WCMS_626831/lang--en/index.htm
- International Monetary Fund. (2019). Uganda Article IV Consultation (IMF Country Report No. 19/125). <https://www.imf.org/-/media/Files/Publications/CR/2019/1UGAEA2019001.ashx>
- Inveen, C. (2022, May 12). Ghana will solve debt crisis without IMF help, finance minister says. *Reuters*. <https://www.reuters.com/world/africa/ghana-find-other-ways-handling-debt-without-going-imf-finmin-2022-05-12/>
- Jonny-Nuekpe, W. (2022, May 13). Gov't to give maiden account of E-Levy's progress in mid-year budget. *Business & Financial Times*. <https://thebftonline.com/2022/05/13/govt-to-give-maiden-account-of-e-levys-progress-in-mid-year-budget/>
- Joshi, A., Prichard, W., & Heady, C. (2014). Taxing the informal economy: The current state of knowledge and agendas for future research. *Journal of Development Studies*, 50(10), 1325–1347. <https://doi.org/10.1080/00220388.2014.940910>
- Mobile money transactions fall in May but increase in June despite E-levy implementation. (2022, July 23). *Joy Business*. <https://www.myjoyonline.com/mobile-money-transactions-fall-in-may-but-increase-in-june-despite-e-levy-implementation/>
- Kabeer, N., Milward, K., & Sudarshan, R. (2013). Organising women workers in the informal economy. *Gender & Development*, 21(2), 249–263. <https://doi.org/10.1080/13552074.2013.802145>
- Kwafo, E. N. Y. (2022). E-Levy charge to be reduced to 1%; daily threshold scrapped – Ken Ofori-Atta. *Modern Ghana*. <https://www.modernghana.com/news/1197067/e-levy-charge-to-be-reduced-to-1-daily-threshold.html>
- Lahey, K. (2018, April). *Gender, taxation and equality in developing countries: Issues and policy recommendations* (UN Discussion Paper). UN Women. <https://www.globaltaxjustice.org/sites/default/files/Geder-Tax-Report-Fin-WEB.pdf>
- Lees, A., & Akol, D. (2021). *There and back again: The making of Uganda's mobile money tax* (ICTD Working Paper No. 123). Institute of Development Studies. <https://doi.org/10.19088/ICTD.2021.012>
- Mader, P., Duvendack, M., Lees, A., Larquemin, A., & Macdonald, K. (2022). *Enablers, barriers and impacts of digital financial services: Insights from an evidence gap map and implications for taxation* (ICTD Working Paper No. 142). International Centre for Tax and Development at the Institute of Development Studies. <https://doi.org/10.19088/ictd.2022.008>
- Matheson, T., & Petit, P. (2021). Taxing telecommunications in developing countries. *International Tax and Public Finance*, 28(1), 248–280. <https://doi.org/10.1007/s10797-020-09621-6>
- Mpofu, F. Y. (2022). Industry 4.0 in financial services: Mobile money taxes, revenue mobilisation, financial inclusion, and the realisation of Sustainable Development Goals (SDGs) in Africa. *Sustainability*, 14(14), 8667. <https://doi.org/10.3390/su14148667>
- Mullins, P., Gupta, S., & Liu, J. (2020). *Domestic revenue mobilization in low-income countries: Where to from here?* (CGD Policy Paper No. 195). Center for Global Development. <https://www.cgdev.org/publication/domestic-revenue-mobilization-low-income-countries-where-here>
- Munoz, L., Mascagni, G., Prichard, W., & Santoro, F. (2022, February). *Should governments tax digital financial services? A research agenda to understand sector-specific taxes on DFS* (ICTD Working Paper No. 13). International Centre for Tax and Development at the Institute of Development Studies. <https://doi.org/10.19088/ICTD.2022.002>
- Ndung'u, N. (2019, August). *Taxing mobile phone transactions in Africa: Lessons from Kenya* (Policy Brief). Africa Growth Initiative at Brookings. https://www.brookings.edu/wp-content/uploads/2019/08/Taxing_mobile_transactions_20190806.pdf
- Nyabor, J. (2022a, April 29). 'E-Levy will make workers who earn less worse off' – TUC warns. Citi Newsroom. <https://citinewsroom.com/2022/04/e-levy-will-make-workers-who-earn-less-worse-off-tuc-warns/>
- Nyabor, J. (2022b, February 28). Passing E-Levy will be in the public interest – Akufo-Addo. Citi Newsroom. <https://citinewsroom.com/2022/02/passing-e-levy-will-be-in-the-public-interest-akufo-addo/>

- Okunogbe, O., & Santoro, F. (2021). *The promise and limitations of information technology for tax mobilization* (Policy Research Working Paper No. WPS 9848). World Bank. <https://doi.org/10.1596/1813-9450-9848>
- Overå, R. (2007). When men do women's work: Structural adjustment, unemployment and changing gender relations in the informal economy of Accra, Ghana. *The Journal of Modern African Studies*, 45(4), 539–563. <https://doi.org/10.1017/S0022278x0700287x>
- Parliament rejects removal of GH¢100 threshold, approves 1% rate for E-Levy. (2022, December 22). *GhanaWeb*. <https://www.ghanaweb.com/GhanaHomePage/business/Parliament-rejects-removal-of-GH-100-threshold-approves-1-rate-for-E-Levy-1684433>
- Rich people prefer agency banking to mobile money – URA. (2020, February 10). *The Independent*. <https://www.independent.co.uk/rich-people-prefer-agency-banking-to-mobile-money-ura/>
- Robertson, C. (1983). The death of Makola and other tragedies. *Canadian Journal of African Studies / Revue Canadienne des Études Africaines*, 17(3), 469–495. <https://doi.org/10.2307/484928>
- Rogan, M. (2019, September). *Tax justice and the informal economy: A review of the debates* (WIEGO Working Paper No. 41). Women in Informal Employment: Globalizing and Organizing. https://www.wiego.org/sites/default/files/publications/file/Rogan_Taxation_Debates_WIEGO_WorkingPaperNo41_2020.pdf
- Rukundo, S., & Magumba, M. (2017, September 4–6). *Taxation of the telecommunications sector: A focus on policy issues and considerations in taxation of mobile money in Uganda* [Paper presentation]. Africa Tax Research Network 2017 Congress, Antananarivo, Madagascar. <https://doi.org/10.2139/ssrn.3132994>
- Scrapping E-Levy will be difficult if collateralised—Prof Bokpin. (2022, May 16). *Ghana News Agency*. <https://gna.org.gh/2022/05/scrapping-e-levy-will-be-difficult-if-collateralisedprof-bokpin/>
- Sensitize public on E-levy, government communicators urged. *GhanaWeb*. n.d.<https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Sensitize-public-on-E-levy-Government-Communicators-urged-1540871>
- Tendler, J. (2002). Small firms, the informal sector and the devil's deal. *IDS Bulletin*, 33(3), 1–15. <https://doi.org/10.1111/j.1759-5436.2002.tb00035.x>
- The covid-19 crisis is boosting mobile money. (2020, May 28). *The Economist*. <https://www.economist.com/middle-east-and-africa/2020/05/28/the-covid-19-crisis-is-boosting-mobile-money>
- UN Capital Development Fund. (2021, November). *The impact of mobile money taxation in Uganda* (UNCDF Report). <https://www.uncdf.org/article/7313/the-impact-of-mobile-money-taxation-in-uganda>
- Wales, C., & Niesten, H. (2022, April 29). Uncertainty still dogs Ghana's Electronic Transfer Levy. ICTD. <https://www.ictd.ac/blog/uncertainty-still-dogs-ghanas-electronic-transfer-levy/>
- Whitehead Communications Ltd. (2019). Uganda social media and mobile money taxes survey report. Whitehead Communications & Information Technology Association of Uganda. <http://ictau.ug/wp-content/uploads/2018/07/ugtaxsurveyictauwhiteheadsmilovepdf-compressed-1.pdf>
- Yeboah, O. A. (2021, November 18). Ofori-Atta presents bitter-sweet budget for 2022. *The Business & Financial Times*. <https://thebftonline.com/2021/11/18/ofori-atta-presents-bitter-sweet-budget-for-2022/>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Anyidoho, N. A., Gallien, M., Rogan, M. & van den Boogaard, V. (2023). Mobile money taxation and informal workers: Evidence from Ghana's E-levy. *Development Policy Review*, 00, e12704. <https://doi.org/10.1111/dpr.12704>

APPENDIX A

TABLE A1 Employment status by gender

	Men	Women	Total
Employer	22.7 (2.16)	13.9 (1.07)	16.2 (0.98)
Own-account (without unpaid help)	60.4 (2.46)	61.6 (1.51)	61.3 (1.29)
Own-account (with unpaid family contribution)	16.9 (1.74)	24.6 (1.33)	22.5 (1.09)
Total	100.0	100.0	100.0

Note: Column percentage; standard errors in parentheses. The estimates are benchmarked on population weights.

TABLE A.2 Relevant survey questions

1.3 Sex	Male Female Non-binary
1.4 How old are you?	AGE IN COMPLETED YEARS
1.5 What is the highest level of education you have attained?	None.....00 Kindergarten.....01 Primary.....02 JSS/JHS.....03 Middle.....04 SSS/SHS.....05 Secondary.....06 Voc/Tech/Comm.....07 Teacher, Agric/ Nursing Training.....08 Polytechnic.....09 University (bachelor).....10 University (post graduate).....11 Professional.....12 Don't know.....13

2.3 Please tell me what type of product or service represents this business activity's greatest share of annual sales?

Manufacturing

- Cooked food 1
- Uncooked food 2
- Tobacco 3
- Textiles 4
- Garments 5
- Leather 6
- Wood 7
- Paper 8
- Recorded media 9
- Refined petroleum product 10
- Chemicals 11
- Plastics & rubber 12
- Non metallic mineral products 13
- Basic metals 14
- Fabricated metal products 15
- Machinery and equipment 16
- Electronics 17
- Precision instruments 18
- Transport machines 19
- Furniture 20
- Recycling 21
- Other manufacturing

TABLE A.2 (Continued)

<p>Retail</p> <p>Non-food 22 Cooked food 23 Uncooked food 24 Other retail</p>	<p>Wholesale</p> <p>Non-food 25 Food 26 Other wholesale</p>	<p>Other services</p> <p>IT 27 Hotel and restaurants 28 Services of motor vehicles 29 Construction Section 30 Transport (people/passengers) 31 Transport (goods/products) 32 Hairdressing or beauty services 33 Waste collection or recycling 34 Market porter services 35 Cleaning services 36 Childcare services (creche) 37 Other services</p> <p>2.7 In the past month, how many persons assisted you in this business activity?:</p> <p>a. Regular paid employee? ----- a. Casual worker? ----- a. Contributing family worker? ----- a. Apprentice? ----- a. Business partner? -----</p>	<p>2.30 In the past calendar month, what amounts (in cedis) do you think you've transacted through MoMo for each of the following:</p> <p>a. Transferred to other people a. Bills paid a. Purchase of goods or services</p>	<p>2.31 Have you had any days in the past calendar months where you have transacted more than 100 cedi using MoMo?</p> <p>Yes No →Skip to 3.1 Don't know →Skip to 3.1 Refuse to answer →Skip to 3.1</p>
---	---	---	---	---

(Continues)

TABLE A 2 (Continued)

<p>2.32 You just mentioned that you transacted (sum from question 2.30) in MoMo in the last calendar month. Can you estimate the sum amount in that month that exceeded 100 cedis per day?</p> <p>-----</p> <p>GH¢_-----</p>						
<p>3.1 During the last 7 days, how many hours did you actually work in this activity?</p>						
a. Sun	b. Mon	c. Tues	d. Wed	e. Thur	f. Fri	g. Sat
<p>3.2 How many hours did you work in a typical day?</p> <p>3.3 How many days did you work in a typical week?</p> <p>3.4 How many weeks did you work in a typical month?</p> <p>3.5 How many months did you work in the last 12 months?</p>						
<p>3.6 What is the easiest way for you to tell us your earnings after expenses? Would it be.....</p> <p>TIME UNIT</p> <p>Daily.....1</p> <p>Weekly.....2</p> <p>Fortnightly...3</p> <p>Monthly.....4</p> <p>Quarterly.....5</p> <p>Yearly.....6</p> <p>GH¢_-----</p>						
<p>3.7 How much money from this activity usually goes to you personally after expenses?</p> <p>GH¢_-----</p>						
<p>3.8 In a typical day, how much total money comes into your business before any deductions (turnover)?</p>						
<p>5.4 For each of the following actors, how likely do you think the actor is to misuse taxes or other revenues collected from citizens?</p> <p>a. National government</p> <p>b. GRA</p> <p>c. AMA</p> <p>d. Traditional authorities</p> <p>1 = Not at all likely</p> <p>2 = Not likely</p> <p>3 = Neither likely nor unlikely</p> <p>4 = Somewhat likely</p> <p>5 = Very likely</p> <p>6 = N/A / I don't interact with this actor</p> <p>-888. Refuse to Answer</p> <p>-999. Don't know</p>						

TABLE A2 (Continued)

6.1 Which of the following statements is closest to your view?

Statement 1: It is better to pay higher taxes, if it means that there will be more services provided by government
 Statement 2: It is better to pay lower taxes, even if it means there will be fewer services provided by government.

Note: Read out response options.

- 1 = Strongly agree with statement 1
- 2 = Agree with statement 1
- 3 = Agree with neither
- 4 = Agree with statement 2
- 5 = Strongly agree with statement 2
- 888. Refuse to Answer
- 999. Don't know

6.9 Do you agree with the idea with the government's recent legislation to tax mobile money transactions (known as the E-levy)?

- 1 = Yes → 6.10
- 2 = No → 6.11
- 888. Refuse to Answer → 6.12
- 999. Don't know → 6.12

6.10 Why?

(allow multiple responses, in no particular order)

- 1 = It is a particularly fair tax.
- 2 = It is particularly easy to pay.
- 3 = It is particularly transparent.
- 4 = It will decrease the use of MoMo.
- 5 = It won't decrease the use of MoMo.
- 6 = It will raise government revenue.
- 7 = It will particularly affect the rich.
- 8 = It will affect everyone equally.
- 9 = It will not affect me.
- X = other (specify)
- 888. Refuse to Answer
- 999. Don't know
- Go to Q6.12

6.11 Why not?

(allow multiple responses, in no particular order)

- 1 = It is not a particularly fair tax.
- 2 = It is not particularly easy to pay.
- 3 = It is not particularly transparent.
- 4 = It will decrease the use of MoMo.
- 5 = It will not actually raise much revenue.
- 6 = It will particularly affect the poor.
- 7 = It will particularly affect people like me.
- 8 = I prefer the government prioritise a different kind of tax.
- 9 = The tax burden is already too high
- X = other (specify)
- 888. Refuse to Answer
- 999. Don't know

(Continues)

TABLE A 2 (Continued)

<p>6.16 Now thinking about the government, how satisfied are you with the way it is doing its job?</p>	<p>1 = Very dissatisfied 2 = Somewhat dissatisfied 3 = Neither satisfied nor dissatisfied 4 = Somewhat satisfied 5 = Very satisfied -888. Refuse to Answer -999. Don't know</p>
<p>8.9 Many people consider themselves supporters of political parties while others do not feel solidarity with any party. Do you, in general, consider yourself as a supporter of any political party or organisation?</p>	<p>1. Yes 2. No, not a supporter of any party → Go to Q8.12 -888. Refuse to Answer -999. Don't know</p>
<p>8.10 Which political party do you support, if any?</p>	<p>1 = Convention People's Party (CPP) 2 = National Democratic Congress (NDC) 3 = New Patriotic Party (NPP) 4 = People's National Convention (PNC) 5 = Progressive People's Party (PPP) 6 = Democratic People's Party (DPP) 7 = Great Consolidated Popular Party (GCPP) 8 = National Democratic Party (NDP) 9 = All People's Party (APC) 10 = None X = other (specify) -888. Refuse to Answer</p>