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# Mobile Money Taxation and Informal Workers: Evidence from Ghana's E-Levy

Nana Akua Anyidoho, Max Gallien, Mike Rogan  
and Vanessa van den Boogaard

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Nana Akua Anyidoho, Max Gallien, Mike Rogan and Vanessa van den Boogaard

## Summary

In recent years, governments in lower-income countries have increasingly introduced specific taxes on mobile money transfers as a means to raise revenue. 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. Ghana's electronic transfer levy (E-levy), introduced in May 2022, is a particularly interesting case study. It was explicitly justified as a way of taxing Ghana's informal economy, but includes a 100 cedi/day threshold to limit the tax burden on lower-income groups. This paper uses data from a new survey of 2,700 self-employed informal workers in the Accra Metropolitan Assembly (AMA) collected in April and May 2022. We examine the likely impact of the E-levy on informal workers from an equity standpoint (with reference to earnings, gender and occupational sector), and explore how this relates to how it is perceived.

We find that, while the overall effect of the E-levy is highly regressive with users in the bottom quintile paying the largest share as a proportion of their income, the threshold is effective in sheltering some lower-income users from facing a new tax burden. We find that home-based informal workers are disproportionately burdened by the tax, relative to street vendors and market traders. Further, we show that most informal workers disapprove of the E-levy, reflecting both concerns about its impact on equity and disappointment with the government's performance. Notably, while women are less likely to be liable for E-levy payments, they are substantially more likely to disapprove of its introduction.

**Keywords:** taxation; digital financial services; mobile money; informality; Ghana.

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# Acronyms

AMA	Accra Metropolitan Assembly
DFS	Digital financial services
EA	Examination area
E-levy	Electronic transfer levy
GRA	Ghana Revenue Authority
ISSER	Institute of Statistical, Social and Economic Research
Mo-Mo	Mobile money
NPP	New Patriotic Party
WIEGO	Women in Informal Employment: Globalizing and Organizing

# 1 Introduction

In recent years, governments in lower-income contexts have increasingly turned to taxes on digital financial services (DFS), and particularly money transfers and mobile money, as a means to raise revenue (Matheson and 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 mobile money alongside pandemic containment policies (Agur et al. 2020; Berger 2020; The Economist 2020), there has been renewed interest in taxing money transfers and 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.<sup>1</sup> To their proponents, they present an opportunity to tap into the rapidly expanding user base of mobile money services and the profits of their providers, while representing a relatively simple and transparent means of collection.

Frequently, mobile money taxation has also been presented as a way to extract revenue from large informal sectors in many lower-income countries. As explained by Clifford (2020: 37), 'taxing mobile money appears at first glance to offer the opportunity to expand the tax base to these new taxpayers and thus appears attractive to tax authorities' who are seeking to capture the informal economy.<sup>2</sup> This pressure has increased in the context of the pandemic (Gallien et al. 2021). As argued by Mpfu (2022: 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 underlying arguments that the tax base needs to be broadened, and that the informal sector is otherwise evading taxes or is under-taxed. However, these assumptions have been increasingly challenged by evidence of the substantial formal and informal tax burdens on many informal workers (Anyidoho and Steel 2016; Gallien and 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: 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: 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 common 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 showdown, recently introduced a 1.5 per cent 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 a particularly 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

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

<sup>2</sup> Following definitional norms adopted by the International Conference of Labour Statisticians (ICLS), the 'informal sector' refers to employment and production that takes place in unincorporated, small or unregistered enterprises. 'Informal employment' refers to all employment without social protection - both inside and outside the informal sector. The 'informal economy' is thus an umbrella term that refers to all units, activities and workers so defined, and the output from them. We use these terms throughout the paper with the specific understanding that informal sector enterprises or economic units, of which our sample is representative, is a subset of the wider informal economy.



informal sector was made very explicit by the government (Yeboah 2021). Second, Ghana's E-levy differs from many similar policies by including a minimum threshold that keeps transactions under 100 cedi per day tax-free (Ansah 2021).<sup>3</sup> 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 gained considerable popular and media attention, evidence-based debate on the topic has been limited.

We make use of a novel and statistically representative dataset of the informal economy in Accra to explore the likely impact of a mobile money tax on equity, and to capture informal workers' perceptions of the policy proposal and their understanding of it against the backdrop of their relationship with the state. Capturing the views of informal workers is particularly important, given 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 in many of the decision-making processes around the E-levy (e.g. GhanaWeb 2022b). To the best of our knowledge, this is the largest and most detailed study of the effects and perceptions of the E-levy among informal workers in Ghana.

Capturing the practices, experiences and voices of informal workers in Accra, we find that while the overall effect of the E-levy is highly regressive, with users in the bottom quintile paying the largest share as a proportion of their income, the threshold is effective in sheltering some lower-income users from facing a new tax burden. We show that most informal workers disapprove of the E-levy, reflecting both concern about its impact on equity and disappointment with the government's overall performance. We find that while women are less likely to be liable for E-levy payments, they are substantially and robustly 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. Existing debates are dominated by the voices of industry actors (e.g. Clifford 2020), rather than affected individuals and businesses. Given the frequency with which they are referenced in the discourse around mobile money taxation, the absence of data on informal workers in particular is striking. This paper seeks to provide a first step in addressing this gap.

We build these arguments as follows. Section 2 briefly reviews the literature and policy landscape related to taxation of DFS, and identifies key knowledge gaps in terms of the policy impact. Section 3 provides context about the emergence of the E-levy in Ghana, describing the objectives and design of the policy, and the remaining questions about its impact. Section 4 describes the novel sampling frame and data upon which the analysis is based. Sections 5 and 6 summarise the empirical results. Section 5 explores the likely impact of the E-levy on equity, in terms of who within the informal economy is likely to pay, and how we can expect the levy to affect informal firms and their business operations. Section 6 captures the perspectives of informal workers, drawing particular attention to the broader relationship between taxation and accountability, and the underlying fiscal social contract with informal workers. Section 7 discusses the results, and their implications for both theoretical and policy approaches to taxes on DFS.

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<sup>3</sup> 100 cedi is equivalent to just under US\$12 at current (July 2022) exchange rates.

## 2 The impact of mobile money taxation: limited evidence

The use of digital financial services, including money transfers and mobile money, have expanded widely in lower-income countries in the past decade; 47 per cent of the population of sub-Saharan Africa (548 million) had a registered mobile money account in 2020, with 29 per cent of those accounts representing active users (Andersson-Manjang and Naghavi 2021: 8).<sup>4</sup> Among lower-income countries for which data is available,<sup>5</sup> the average number of mobile money accounts is more than double the number of commercial bank accounts. In many lower-middle-income countries, mobile money usage is the same or more than commercial bank usage (Bazarbash et al. 2020).

Alongside this growth, governments have increasingly sought to tax DFS, rooted in deeper discussions about the role that technology can play in increasing tax revenue and strengthening overall state capacity (Fan et al. 2020; Okunogbe and Santoro 2021). While capturing revenue from DFS can come from many sources,<sup>6</sup> mobile money taxes in particular have often been introduced due to the untapped revenue potential and the relatively convenient and easy nature of the tax handle (Lees and Akol 2021a) – particularly in relation to, say, corporate income taxes on financial service providers.<sup>7</sup> As noted above, the search for revenue is often closely linked to 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, fueling widespread industry, popular and political resistance. In Uganda, for example, the tax faced massive civil society outcry and popular protest (CSBAG 2018; Lees and Akol 2021b). In Cameroon, the tax prompted a social media campaign using the hashtag #EndMobileMoneyTax. There are often strong industry voices in this dissent, pointing to the potential negative impact on the development of the mobile money sector. There is the broader concern that mobile money taxation may undermine financial inclusion, and the development benefits that are often thought to accompany it (Ackah and Opoku 2021; Clifford 2020; Ndung'u 2019; Whitehead 2019). Development donors have seen DFS, and mobile money in particular, as a tool to support financial inclusion, and sometimes broader developmental benefits (Demirguc-Kunt et al. 2017: 2; see also Demirguc-Kunt et al. 2020; World Bank 2014). If businesses were less likely to use DFS because of a new tax, it is often thought that access to capital, business performance and growth, and business formalisation would be negatively affected (Mader et al. 2022). Women in particular are often highlighted as a group likely to be disproportionately negatively affected by a mobile money tax, with the idea that such a tax would further worsen gender inequity in financial inclusion (Clifford 2020).

However, there is limited evidence of the impact of mobile money tax on usage of DFS, and it is unclear whether immediate declines in usage after policy changes will be long-lasting or

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<sup>4</sup> Based on 548 million active accounts, and a population estimate of 1.165 million (World Bank databank).

<sup>5</sup> Data is collected by the Financial Access Survey. Lower-income countries include Rwanda, Uganda, Liberia, Mozambique, Guinea, Madagascar and Afghanistan. Lower-middle-income countries include Kenya, India, Mongolia, Ghana, Zimbabwe, Zambia, Eswatini, Bangladesh, Lesotho, Philippines, Egypt, Cambodia, Pakistan, Cameroon, Papua New Guinea and Myanmar.

<sup>6</sup> Notably, there is often a desire not to tax electronic payments, but **cash**, with the idea that the use of electronic payments should be incentivised, with third-party reported transactions improving compliance (Das et al. 2022; Kleven et al. 2011; Naritomi 2019; Pomeranz 2015).

<sup>7</sup> For instance, in Uganda a case has been made that taxes on all bank charges, money transfers and mobile money contributed 16% of the road maintenance and construction budget, or 23% of the health sector budget in 2019/20 (ICTD n.d.).

detrimental from a development perspective (Fuchs et al. 2017; Rukundo and Magumba 2018). In Uganda, for instance, it was found that the level of mobile money use took 18 months to recover, but did not fall overall (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: 33; see also Duvendack and Mader 2019).

Another common concern about mobile money taxes with particular relevance to this study is their impact on lower-income groups. Some have suggested that it is likely 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 lower-income countries, only about 30 per cent of the population use traditional banks (Munoz et al. 2022), with this wealthier segment of the population 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.

In Uganda, for example, the percentage of the poor population who have a mobile money account increased from 10 per cent to 17 per cent from 2011 to 2017 (Munoz et al. 2022). Before the introduction of a mobile money tax there, the Civil Society Budget Advocacy Group estimated that the majority of mobile money transactions (61 per cent) were less than US\$10, and were predominantly by poorer individuals (CSBAG 2018). 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, predominately the poor, that bear the brunt of the tax’ (Clifford 2020: 24). Similarly, the IMF speculated that the new tax on mobile money transactions was ‘likely to hit the rural poor disproportionately hard’ (IMF 2019: 13).<sup>8</sup>

There is currently only limited data and research available on the implications of mobile money taxes on equity in contexts of high informality and minimal access to traditional financial services. Critically, other possible outcomes, including the broadening of the tax base, or enabling better 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: 37). We attempt to add to this evidence base in the context of the informal economy in Accra at the time of the introduction of the E-levy.

### 3 Context of the E-levy in Ghana

In November 2021, Ghana’s Minister of Finance and Economic Planning, Ken Ofori-Atta, announced the proposed introduction of an Electronic Transaction Levy in the 2022 budget. The E-levy was originally proposed as a 1.75 per cent charge on mobile money payments, bank transfers, point of sales transactions and inward remittances. The reform was explicitly framed as being motivated by a desire to tap into the ‘enormous potential’ for tax revenue in the informal economy (Yeboah 2021), with the informal economy as ‘the principal target of the Levy’ (Wales and Niesten 2022). Implicit in this was a claim that the informal economy in

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<sup>8</sup> This speculation was subsequently used by the IMF in Cameroon to advocate against a mobile money tax, suggesting that ‘Taxing mobile money can be fiscally inequitable’ as ‘the poor and unbanked segments of the population, who often live-in rural areas and face high transaction costs from the formal banking [sic], have been found to be negatively affected by the measure’ (IMF 2022: 8).

Ghana is not currently taxed. The President himself stated, ‘We cannot continue to allow less than ten per cent of the population to 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’ (cited in All Africa 2022).

The tax was immediately challenged on several grounds: that it violated principles of taxation by potentially placing a double-burden on taxpayers (Ackah and Opoku 2021); that it would roll back progress on the digitalisation of the Ghanaian economy (Ackah and Opoku 2021); and, importantly, that it would increase the hardships of workers in the informal economy already hard-hit by the pandemic (Nyabor 2022a). Much of the public and policy discourse on the E-levy centred on mobile money (MoMo) transfers as the dominant DFS used in Ghana.

In the face of widespread public opposition to the tax,<sup>9</sup> and unable to immediately marshal the numbers to pass it in parliament, 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 Akufo-Addo’s ‘Ghana Beyond Aid’ agenda (GoG 2019), emphasising that the E-levy would mobilise revenue for development without further recourse to external aid. In particular, they argued that it would keep Ghana from returning to seek assistance from the International Monetary Fund (IMF) (Ade 2022; Nyabor 2022b).<sup>10</sup>

The E-levy was passed in parliament in March 2022, and rolled out on 1 May 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 100 cedis or less a day. It claimed this accounted for 40 per cent of transactions, and would, thus, provide sufficient relief for the poor (Ansah 2021).<sup>11</sup> Moreover, it argued that the raft of development projects that the E-levy would ostensibly fund would benefit this same demographic, hypothesising that some of the revenue would support spending on entrepreneurship, infrastructure and youth employment. In addition, the rate of the tax was lowered to 1.5 per cent on the value of funds over the threshold transferred electronically ‘in the spirit of burden-sharing’, and to ‘reduce the impact on the average Ghanaian’ (Mohammed 2022).

While the government has thus taken steps to both capture new revenue and to 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 per cent of employment nationally, with a higher proportion of women than men (Baah-Boateng and Vanek 2020). Our paper aims to fill this knowledge gap by providing empirical evidence to inform the debate about the equity impacts of the E-levy.

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<sup>9</sup> A survey by Afrobarometer conducted in July 2022 estimated that three out of four Ghanaians opposed the tax, believing that it would impose an undue burden on the poor, and that the government would not use the tax for the stated intent of socio-economic development (Afrobarometer 2022).

<sup>10</sup> The 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 collateral to attract investors (Hearson and Abounabhan 2022); this may make it difficult to repeal in future (Ghanaian Times 2022). In Ghana’s case, however, in July 2022, just two months after the introduction of the E-levy, the government announced that it would begin talks with the IMF for support.

<sup>11</sup> Considerable 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 and Niesten 2022).

## 4 Data and methods

The data analysed in this paper come from a unique dataset, collected in April and May 2022, of 2,700 self-employed informal workers in the Accra Metropolitan Assembly (AMA). Based on a probability sampling approach, the data is representative of informal 'economic units' connected to households in the AMA. In addition to being the capital city, Accra attracts workers from across the country (and beyond), and has been the focus of academic interest in the informal economy since the 1970s. This is due, in part, to its vibrant markets and high density of informal trade (see Darkwah 2022; Overa 2007; Robertson 1983). The Greater Accra area accounts for just over a third of total urban employment in Ghana and of all urban informal employment (Baah-Boateng and Vanek 2020). The AMA therefore has a high concentration of informal sector activity, in addition to being the country's economic hub. To the best of our knowledge, this is the first survey that is representative of the informal economy in Accra and measures the full contribution of the informal sector in the form of taxes, levies, permits, user fees and payments for services.

### 4.1 Sampling

The sampling strategy involved a two-stage cluster sampling approach, which enabled the systematic selection of households and corresponding qualified household members. In the first stage, the clusters identified in the AMA, which in this case are the enumeration areas (EAs), were selected at random. However, the random selection also took into consideration income classification of communities – low income, middle-income and high-income EAs. Once EAs were selected, a listing exercise was undertaken to determine a master list of households in each EA. Within each selected EA, 20 households were systematically selected to be surveyed at the second stage. In all, a total of 3,169 individuals were listed in the master sample frame.

The criteria used for selection into the second stage of the sample were informed by, *inter alia*, other enterprise-type surveys as well as the 1-2-3 survey design (Gennari et al. 2009). Specifically, respondents were sampled from the household master list if they owned or operated a small (less than 10 employees) business or income-generating activity. Employees of these small businesses were not included in the sample, as the survey questionnaire required detailed information on the finances and operations of each business activity. The final sample of 2,700 self-employed individuals was drawn from these listed household members, after using a screening question on registration of the business activity to narrow the sample further to activities that were unregistered (the criteria used as a proxy for informality). As a result, the final probability sample of 2,700 self-employed informal workers is representative of small unregistered economic units in the Accra Metropolitan Assembly. While we recognise that 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 paper.

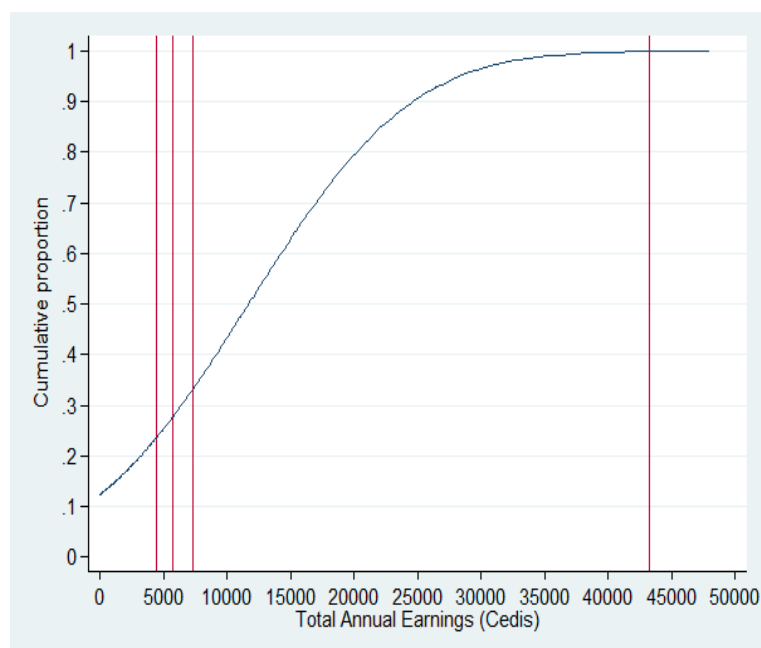
In line with recent estimates of the informal economy in Accra from the official Labour Force Surveys (see Baah-Boateng and Vanek 2020), the results (Table 1) from our sample of informal sector activities suggest that the vast majority (about 84 per cent) are operated by own-account workers. These are self-employed informal sector workers without any paid employees. As expected, there are several important differences by gender, with, in particular, men being more likely to be employers than women (22.7 per cent and 13.9 per cent, respectively).

**Table 1 Status in employment 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 contributions)	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.

Since the earnings of workers in the informal sector are of particular interest to an analysis of the E-levy, Figure 1 plots the estimated earnings of the sample against the 2022 PAYE tax rates published by the Ghana Revenue Authority (GRA).<sup>12</sup> The earnings module in the survey questionnaire was taken directly from the official household surveys in Ghana (e.g. Labour Force Survey and Ghana Living Standards Survey). Respondents were asked to report their earnings from informal self-employment in any time unit (e.g. hourly, daily, weekly, monthly, annually). The majority (59 per cent) of respondents elected to report their daily earnings (26 per cent weekly and 13 per cent monthly). A separate battery of questions (also adapted from the official household surveys) then asked respondents for their typical working hours, days, weeks and months. These two sets of questions on earnings and typical working times allowed the construction of an earnings variable that could be adjusted to daily, monthly or annual earnings. In order to be compatible with the official GRA tax schedule, reported earnings were converted into annual earnings and plotted against the tax thresholds.

**Figure 1 Cumulative distribution function of annual earnings plotted against 2022 GRA PAYE tax thresholds**

Notes: The estimates are benchmarked on population weights. The top 3% of the sample (i.e. the highest earners) has been excluded from the distribution.

<sup>12</sup> The analysis is simply illustrative of the potential tax contribution of the self-employed in the informal sector, as the informal sector is taxed through the quarterly stamp tax regime and not PAYE. The PAYE thresholds, nonetheless, offer a useful comparison of informal sector tax liability relative to the formal sector.

The results suggest that about 25 per cent, 27 per cent and 33 per cent of the informally self-employed would be below the first three tax thresholds (taxed at 0 per cent, 5 per cent and 10 per cent, respectively). There is a large gap between the third and fourth tax bracket thresholds according to the GRA schedule, and close to 100 per cent of the sample would fall below this higher-income (taxed at 17.5 per cent) threshold (however, there are two higher tax brackets that are not plotted on the graph as they exceed the earnings range of our sample once outliers are trimmed). The analysis here suggests, therefore, that roughly a quarter of the informally self-employed in Accra would be below even the lowest tax threshold (i.e. not liable for tax), and up to a third would be taxed at 10 per cent or less (on earnings over the threshold). Any tax on mobile money transactions should, therefore, be analysed with this broad understanding of the tax structure in the formal sector, and should be compared with the taxes that the informal sector already pays (i.e. the stamp tax and a number of local tax payments to the AMA).

## **4.2 Data collection**

The E-levy was officially introduced on 1 May 2022. Data was collected for the survey in the month before (73 per cent of the sample) and the month in which the E-levy was introduced (27 per cent of the sample), and at a time when public debate about it was most active. Within a wider set of questions about business activities, earnings, turnover and tax burdens, we added some specific questions about the E-levy and the use of mobile money. With reference to use of mobile money, questions were asked about activities in the months before the introduction of the E-levy – transactions during the previous calendar month or so (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. The survey collected information on the type of MoMo transactions, typical amounts transacted, as well amounts transacted over 100 cedis/day. To the best of our knowledge, this represents the most comprehensive dataset examining informal workers' relationships with the E-levy. It can give us concrete answers about the usage of mobile money, and perceptions of the E-levy in Ghana's informal economy.

## **4.3 Limitations**

This kind of analysis, while timely, comes with several limitations. First, and most importantly, the collection of information on mobile money usage before the introduction of the levy does not account for how transaction behaviour might change due to the structure of the levy. The simulated tax amounts that we present in this paper are based on the admittedly unrealistic assumption that transaction patterns and amounts would not change as a result of, for example, the tax-free transaction threshold of 100 cedis/day, or that they had not already changed in anticipation of the levy's introduction. Furthermore, it is difficult to anticipate the direction of bias in mobile money reporting in our data. There is evidence from other contexts (e.g. Uganda) 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 anticipation of the E-levy may have already changed consumption behaviour (GhanaWeb 2022a), though initial reports suggest that usage has already rebounded (Business 2022). Finally, there is the potential for recall bias in reported transaction amounts above the exemption threshold in the month prior to the survey. While the timing of the survey was fortuitous in terms of investigating the potential impact of the E-levy, the structure of the exemption (amounts below 100 cedis/day) meant that it was difficult to collect information on the previous month's transactions without asking for detailed recollection of expenditure. Despite these limitations, we argue that the estimates presented here provide a useful baseline account of usage of mobile money among a segment of the workforce that is purported to be an important user of mobile money services, as well as an

intended target of this levy. We have also controlled for the effects of people being surveyed before or after the implementation of the tax, which we address below.

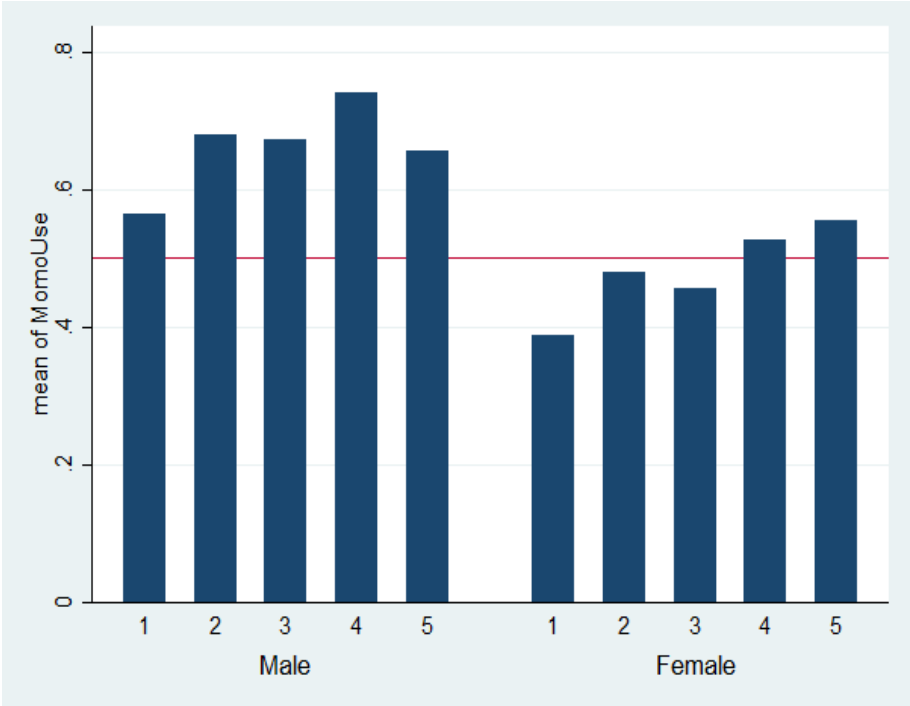
# 5 Liability and equity: how will the E-levy affect informal firms?

## 5.1 Mobile money usage

To understand the impact of the E-levy, we first need to understand how workers in the informal economy use mobile money (MoMo). An analysis of MoMo usage among the survey sample suggests that while just over half (51 per cent) of the population of informally self-employed persons in Accra use mobile money, there are important differences by gender and across earnings distribution.

**Figure 2** shows the proportion of both women and men who reported transacting money using MoMo in the month prior to the survey. Across all earnings quintiles, men were more likely than women to have transacted on the MoMo platform.<sup>13</sup> The fact that about 41 per cent of MoMo users do not have a bank account suggests that mobile money transfers may be particularly important for them – and they are typically from the lower-earning and more vulnerable segments of the workforce (e.g. 43 per cent in the lowest-earning quintile have bank accounts, compared with 54 per cent in the highest-earning quintile, using own weighted estimates).

**Figure 2 Proportion of the sample that uses MoMo for any type of transaction, by gender and earnings quintile**



Note: The estimates are benchmarked on population weights.

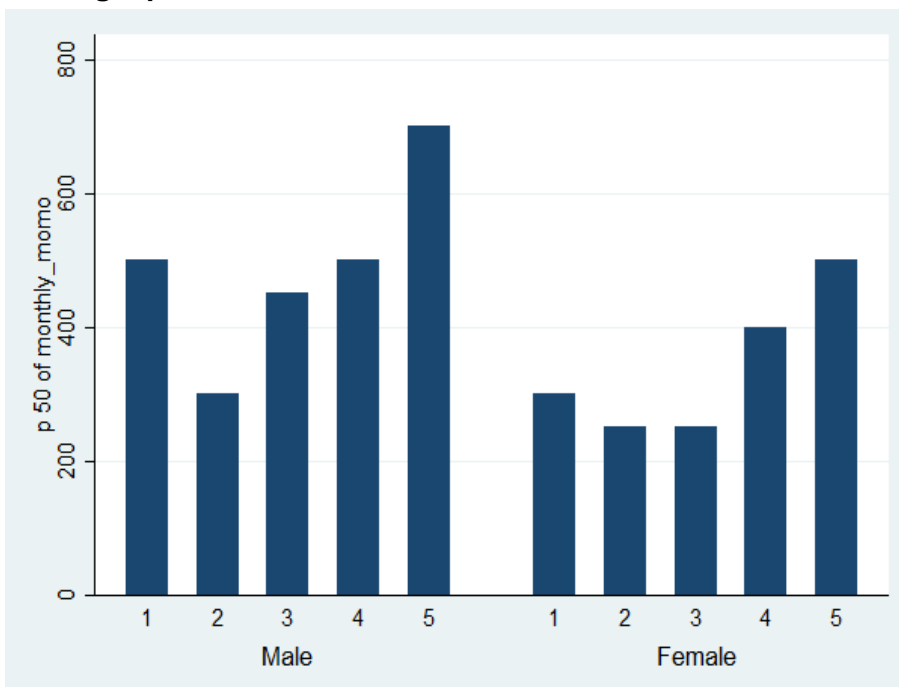
<sup>13</sup> Within the highest earnings quintile, for example, about 55% of women and 65% of men used mobile money to transfer funds. Reported mobile money use is lowest in the first quintile, but over half of men in this earnings bracket and about 40% of women still reported transacting via MoMo.



The distribution of the amounts transacted, conditional on MoMo use, is somewhat surprising (

**Figure 3**). While for both women and men, the top earning quintile (quintile 5) reported transacting the most on the MoMo platform (about 500 and 700 cedis, respectively), workers in the lowest-earning quintile transacted relatively more than those in several of the higher-earning categories. For example, within the sub-sample of men, those in the first quintile reported transacting the same amount via MoMo as the fourth quintile. Among the female sample, the lowest-earning quintile reported transacting more than the second and third quintiles, at the median. These results suggest that transaction volumes are, as expected, greater for higher earners, but that those in the lowest-earning quintile make large mobile money transfers relative to at least two of the remaining earnings groups. This could, again, be explained by the fact that a larger percentage of informal workers in the lower-earning groups do not have a bank account and, therefore, rely more on mobile money services.

**Figure 3 Median monthly MoMo transfers (cedis) among MoMo users by gender and earnings quintile**



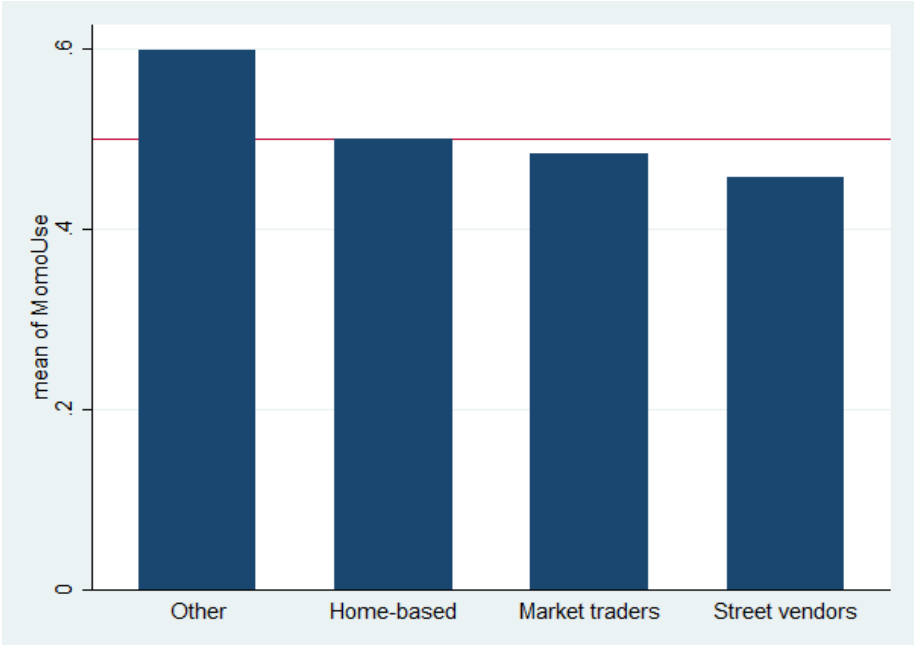
Note: The estimates are benchmarked on population weights.

The questionnaire design did not allow an analysis of whether or how much mobile money transfers were used for business purposes, but it is possible to identify the type of transactions that were affected on the MoMo platform. The modal transaction type for MoMo was for direct transfers to other people, which was used by 46 per cent of the sample (and by 91 per cent of those who use MoMo). This was followed by the purchase of goods and services (16 per cent; 31 per cent), and, to a far lesser extent, for the payment of bills (less than 5 per cent; 9 per cent).<sup>14</sup> Traders and manufacturers in non-consumable goods such as electronics and garments/textiles tended to have larger MoMo transactions, while food retailers reported comparatively lower usage.

<sup>14</sup> Among those who use MoMo to transfer funds to other people, the mean monthly transaction amount was about 805 cedis (median 300). Among those who used MoMo to purchase goods and services, the mean monthly total was somewhat higher at 1,466 cedis (median 400). Finally, among the relatively few who used MoMo to pay bills, the mean monthly transaction amount was about 511 cedis (median 100).

While there is evidence that those working with non-consumable goods are more likely to transact on the MoMo platform, there is also evidence that MoMo usage differs by occupational sector (**Figure 4**). Just under half of those in the identifiable sectors of home-based work, street vending and market trading report using MoMo; 60 per cent of those (other) outside of these occupational groups report MoMo usage. Within this 'other' category, about a quarter sell or produce some type of food product, and the remaining three-quarters are distributed across a range of non-food products or services.

**Figure 4 Proportion of the sample that uses MoMo for any type of transaction, by occupational sector**



Note: The estimates are benchmarked on population weights.

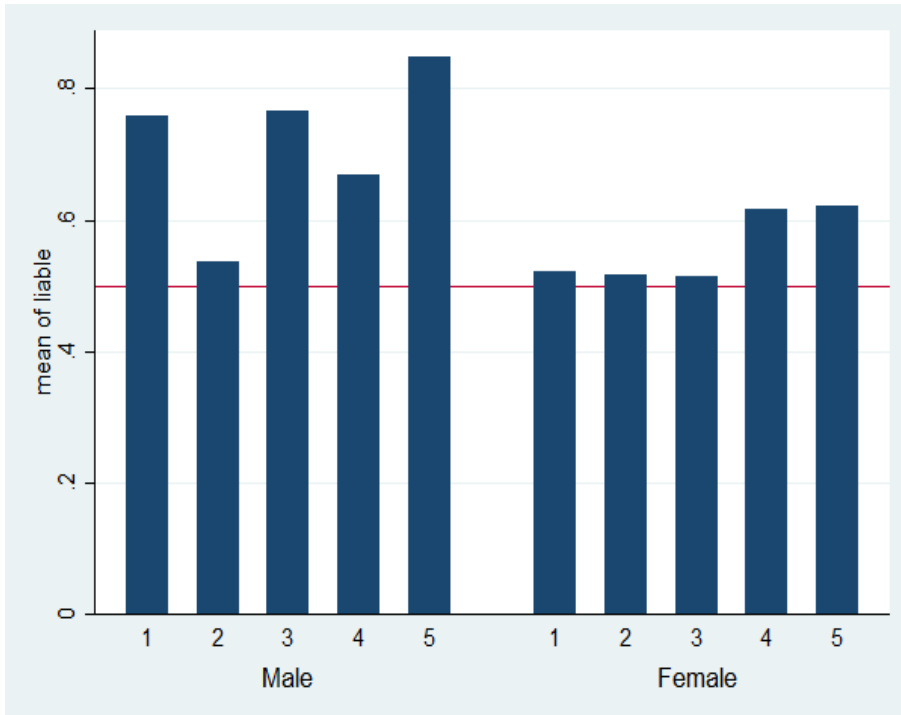
**5.2 Estimated E-levy liability**

Based on this usage data, we then estimate liability, dependent on whether mobile money transactions in the previous month exceeded 100 cedis per day. This is the threshold over which transactions are liable for an E-levy payment of 1.5 per cent. The reported amounts are based on transactions before the E-levy was implemented, so should be interpreted as rough approximations of liability for E-levy payment (and, as outlined earlier, not accounting for likely changes in transaction behaviour after the levy is implemented). Nonetheless, the results are informative. In total, 31 per cent of the total sample reported that they would be liable for some amount of E-levy payment. Of those who actually use MoMo, 61 per cent reported that they would be liable for some amount of E-levy payment based on their past MoMo transaction patterns and amounts. Here, our results map quite closely on the suggestion of the government, discussed above, that the threshold would remove about 40 per cent of MoMo use from taxation.

**Figure 5** disaggregates these estimates further by showing the proportion of users, by gender and earnings quintile, that would have paid a levy on their transactions. This simulation of E-levy liability suggests that there are large gender differences, though the association between earnings and liability are far less clear. Across most earnings quintiles, women who are MoMo users are far less likely than men to have transacted over the threshold. Among the top two earnings groups of female MoMo users, just over 60 per cent would have been liable for at least some type of E-levy payment, while about half of the

lower-earning female workers would have had some liability. In contrast, liability would have been far higher across the earnings distribution for men. While men in the highest quintile had the highest level of liability (almost 90 per cent) there is no discernable pattern, and nearly 80 per cent of the lowest-earning male workers would have been liable for an E-levy payment. Therefore, neither MoMo usage nor potential liability for the recently introduced E-levy appear to be correlated strongly with earnings.

**Figure 5 Proportion of MoMo users liable for an E-levy payment, by gender and earnings quintile**



Note: The estimates are benchmarked on population weights.

Simulating transaction amounts that would be liable for an E-levy payment, we find a slightly stronger association between transaction amounts above the E-levy threshold and earnings, compared with usage and liability, but the picture is still somewhat mixed (

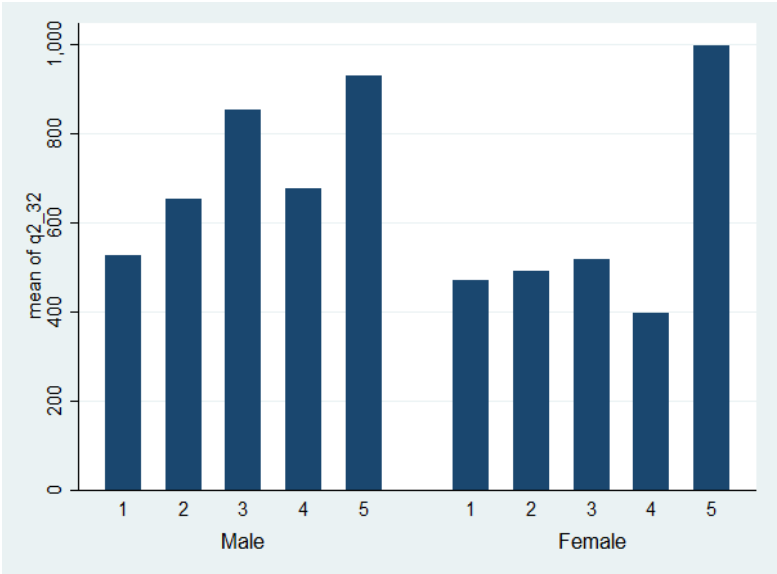
**Figure 6).** Similar to the patterns of overall MoMo usage, men tend to transact, on average, a larger amount above the tax threshold at each point in the earnings distribution.<sup>15</sup> Among the male sub-sample there is also a detectable pattern of increasing liability at the higher earnings levels. Among women (who make up 75 per cent of the total sample<sup>16</sup>), there is very little variation in the amounts that were transacted above the E-levy threshold just before its implementation. It is only among women in the top earning quintile where liable transactions are significantly higher (about 1,000 cedis per month, on average, above the threshold). Therefore, despite differences in earnings, women across the first four earnings quintiles transact, on average, about 400-500 cedis above the E-levy threshold.

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<sup>15</sup> For example, in the middle of the distribution (quintile 3) men reported transacting nearly 900 cedis per month over the threshold. In the same earnings quintile, women reported transacting only 500 cedis over the same threshold.

<sup>16</sup> While this percentage seems surprising, estimates from the official Labour Force Survey show that women make up approximately 76% of the main occupation groups (domestic workers, home-based workers, street vendors, market traders and waste pickers) in the informal economy in Accra (Baah-Boateng and Vanek 2020).

**Figure 6 Average reported monthly amount (cedis) over the E-levy threshold by earnings quintile and gender**

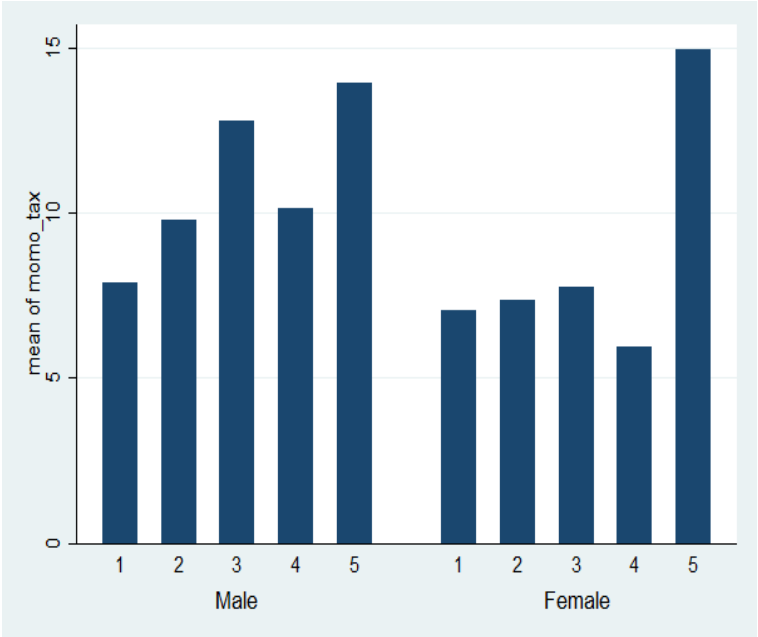


Note: The estimates are benchmarked on population weights.

Based on the estimates of taxable mobile money transfers in

**Figure 6, Figure 7** simulates the actual amounts that would have been paid, by gender and earnings quintile, if the E-levy had been applied to reported transaction amounts. The data suggests that, in absolute terms, the E-levy payment would be progressively higher for each earnings group among the male sub-sample. For example, the lowest earnings quintile would have paid only about 7 cedis in E-levy payments in the month prior to the survey, while the highest earners, on average, would have paid about 14 cedis. Among women, the first four quintiles would have paid between 6-8 cedis per month, while the top earning quintile would have paid about 15 cedis. When confidence intervals are applied there are no significant differences in simulated E-levy payments between the different earnings quintiles.

**Figure 7 Simulated average monthly E-levy payment among workers who reported liability by gender and earnings quintile**

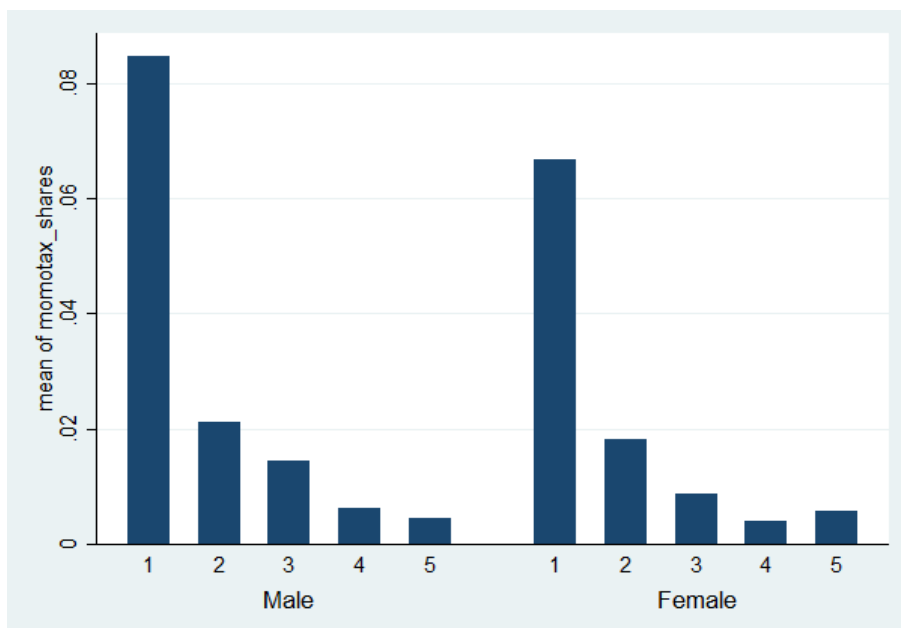


Note: The estimates are benchmarked on population weights.

Based on these estimated liabilities, it is not surprising that, similar to other consumption taxes, the E-levy is highly regressive in its structure. **Figure 8** illustrates the simulated E-levy tax as a share of monthly earnings by gender and quintile for those who reported transacting over the threshold.<sup>17</sup> The large differences between the effective E-levy rate for the first quintile for both men and women suggests that, in relative terms, the E-levy has the potential to be disproportionately borne by lower earners. For example, the calculated monthly E-levy would be just over 8 per cent and 6 per cent of monthly earnings for men and women, respectively, in the lowest earning quintile. Among the top earning quintile, in contrast, the projected E-levy payments would be less than 1 per cent of earnings, on average, for both women and men. This is in line with our understanding that higher-income earners tend to have other ways of transacting, with greater access to formal financial institutions. With the announcement of the E-levy, it seems plausible that they would shift their transaction usage, while lower-income earners may not be able to do this.

**Figure 8 Simulated average monthly MoMo tax as a share of reported monthly earnings, by earnings quintile and gender**

<sup>17</sup> The distribution of MoMo payments is still highly regressive if all MoMo users (including those who transacted below the threshold) are included.

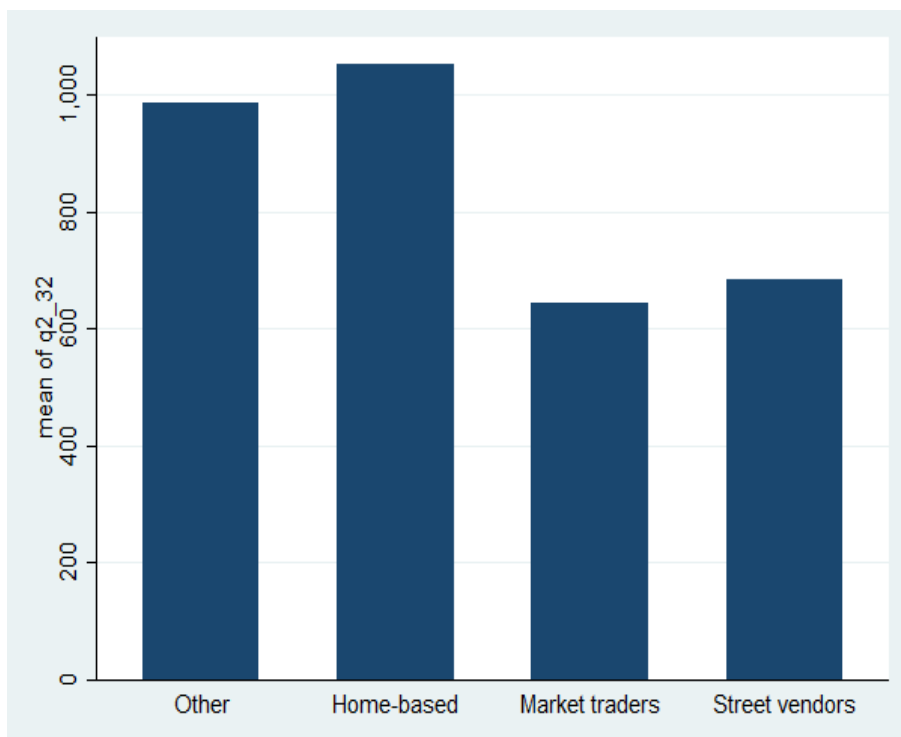


Note: The estimates are benchmarked on population weights. Responses are conditional on transacting above the threshold.

Over half the users who transferred funds to other people reported transacting over the threshold. Moreover, there is limited variation in E-levy liability across the earnings quintiles. About 60 per cent of the lowest earning group (quintile 1) of E-levy users, for example, reported that they would be liable for some type of levy payment. Similarly, around 70 per cent of MoMo users from the top quintile who transferred funds to other people would be expected to be liable for a levy payment. While only 9 per cent of MoMo users reported paying bills through the platform, E-levy liability among this group was relatively evenly distributed across the earnings quintiles. Just over 70 per cent of the lowest-earning workers in the sample reported that they transacted over the threshold. The use of MoMo to purchase goods and services (31 per cent of MoMo users) is associated with a high proportion of E-levy liability, particularly for the two highest earnings quintiles. Roughly 80 per cent of MoMo users who reported this type of transaction would be liable for some type of E-levy payment under the new regulations. While MoMo use differs by occupational sector, liability for the E-levy, conditional on using MoMo, is evenly distributed across the groups (not shown in graph). Roughly 60 per cent of MoMo users in each sector report transacting over the threshold in the previous month, and the differences are not statistically significant.

Despite similar rates of E-levy liability, the average values of transactions over the E-levy threshold differ significantly between the occupation groups (**Figure 9**). On average, home-based workers report transacting about 1,100 cedis per month over the threshold, while those not classified (other) transact a similar amount on a monthly basis. In contrast, the two sectors concentrated in retail (street vendors and market traders) report, on average, only about 600-700 cedis over the threshold per month. The result (not shown in the graph) is that home-based and other workers would be expected to pay about 15 cedis per month (based on past MoMo usage), and street vendors and market traders would pay just under 10 cedis per month to the E-levy.

**Figure 9 Average reported monthly amount (cedis) over the E-levy threshold, by occupational sector**

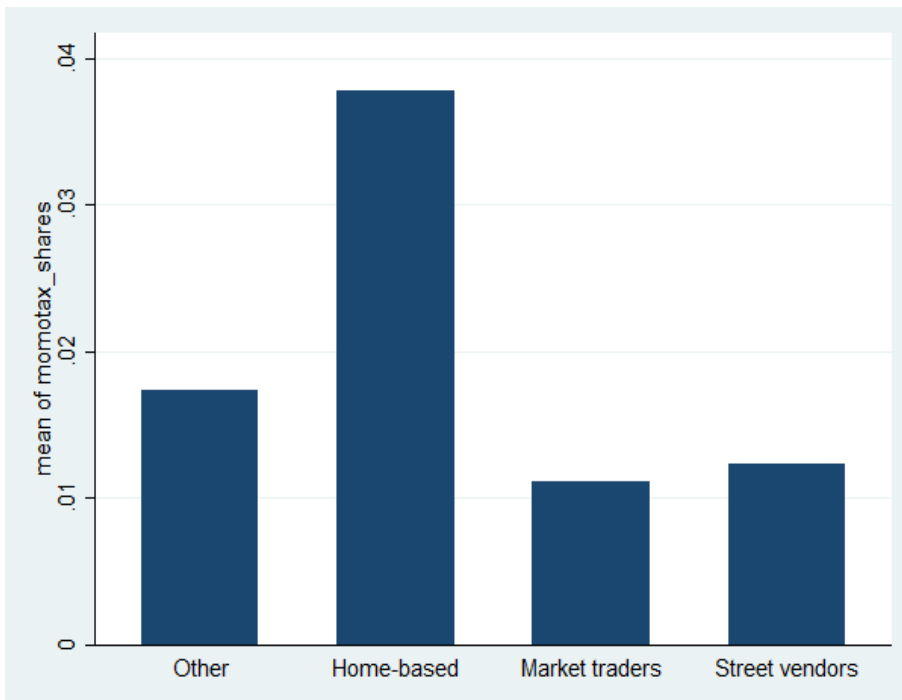


Note: The estimates are benchmarked on population weights. Responses are conditional on at least some E-levy liability.

These simulated amounts are perhaps best contextualised when compared with earnings (**Figure**). Home-based workers have the highest simulated effective E-levy rate, with nearly 4 per cent of monthly earnings estimated to be payable to the levy based on past transaction behaviour. This group is relatively evenly split between retail and manufacturing (and services), so it is not obvious why workers in this sector would have such a large projected E-levy liability. One possible explanation is that, because this group works from home (by definition), it may be the case that mobile money transactions have an added convenience compared to workers who conduct their business in public spaces, where they have more direct access to other businesses and banks. Irrespective of the explanation for this relatively large difference in the effective burden of the levy, it appears that, in both relative and absolute terms, the single largest occupation group with the lowest average earnings would likely carry a disproportionate burden.



**Figure 10 Simulated average monthly MoMo tax as a share of reported monthly earnings, by occupational sector**



Note: The estimates are benchmarked on population weights. Responses are conditional on transacting above the threshold.

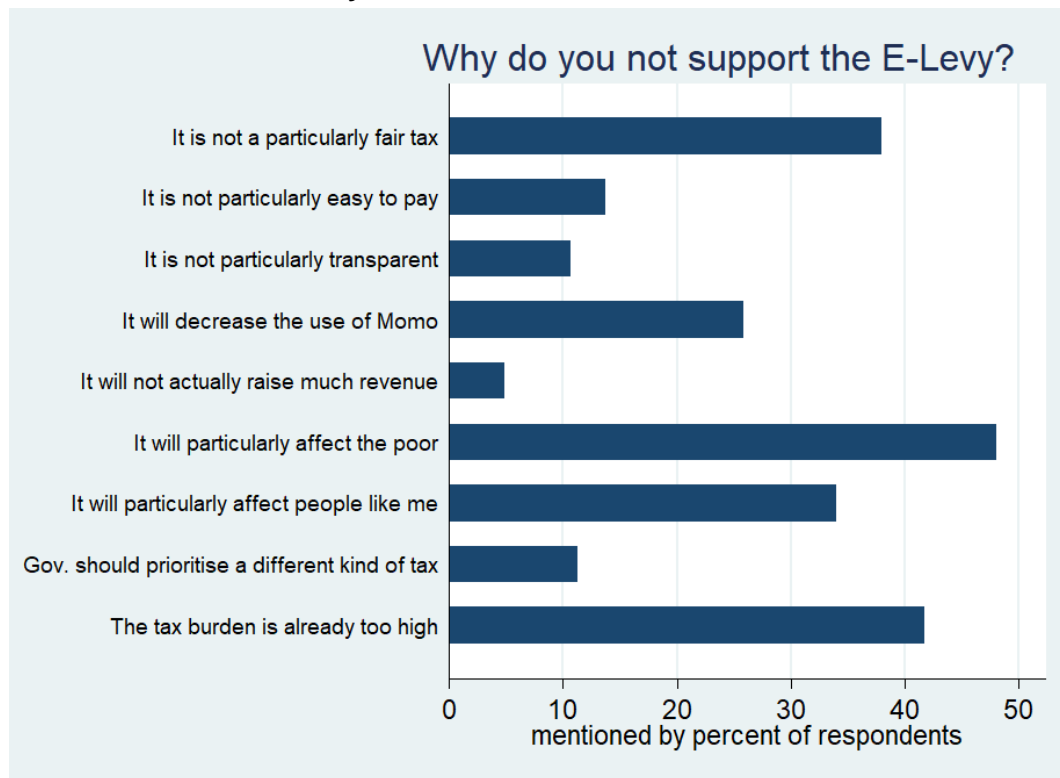
## 6 Perceptions of the E-levy: gender and government performance

The introduction of the E-levy came at the end of a heated public and political debate in Ghana. This 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. So, how do workers in Accra's informal economy perceive the E-levy? Here, our survey shows overwhelming resistance to the proposal – both among those who are likely liable to pay the E-levy, and those who are not. Concerns about the levy are framed in particular with reference to fairness and equity. We also show that opposition to the levy correlates with widespread disappointment with the government's performance, and low trust in its ability to translate higher revenue into services. Notably, we find that women in Accra's informal economy are particularly likely to disapprove of the E-levy.

The first thing to note is that the E-levy is highly unpopular across Accra's informal economy, reflecting broader attitudes across society. When asked whether they agree with the government's proposal to tax mobile money, over 83 per cent expressed disagreement. Here, our findings are probably not particular to the context of informality, or of Accra – these results echo other recent surveys that have highlighted the unpopularity of the tax in the wider population. Most notably, a nationally representative survey by Afrobarometer found that only 19 per cent of Ghanaians either approve or strongly approve of the levy (Afrobarometer 2022), consistent with the finding of just above 16 per cent for our sample. Why do informal workers not support the E-levy? A range of potential hypotheses are suggested here, including the potential impact on them directly, concerns about horizontal equity, political affiliation, and trust in the government. We discuss these in turn.

Naturally, given the degree to which the levy was explicitly targeted at informal workers, a common assumption would be that informal workers would reject the tax, due to its supposed effect on them in particular. Indeed, as **Figure** highlights, 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 answer. 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’; another answer that centred on distributional concerns, (‘it is not a particularly fair tax’) similarly attracting a large number of responses.<sup>18</sup> It is worth noting that over 40 per cent of those who disagreed with the levy also noted that ‘the tax burden is already too high’. This is particularly relevant, as part of the government’s narrative for the introduction of the E-levy had been the importance of ‘broadening the tax net’ – a narrative that implies that informal workers are not currently being taxed. In recent years, a substantive literature on informality and taxation, alongside forthcoming work based on this survey in Accra, has highlighted that informal workers are in fact far from ‘untaxed’, and do pay a range of formal and informal levies (Joshi et al. 2014; Rogan 2019). This is probably reflected in this answer.

**Figure 11 Distribution of reasons given by respondents who did not support the introduction of the E-levy**



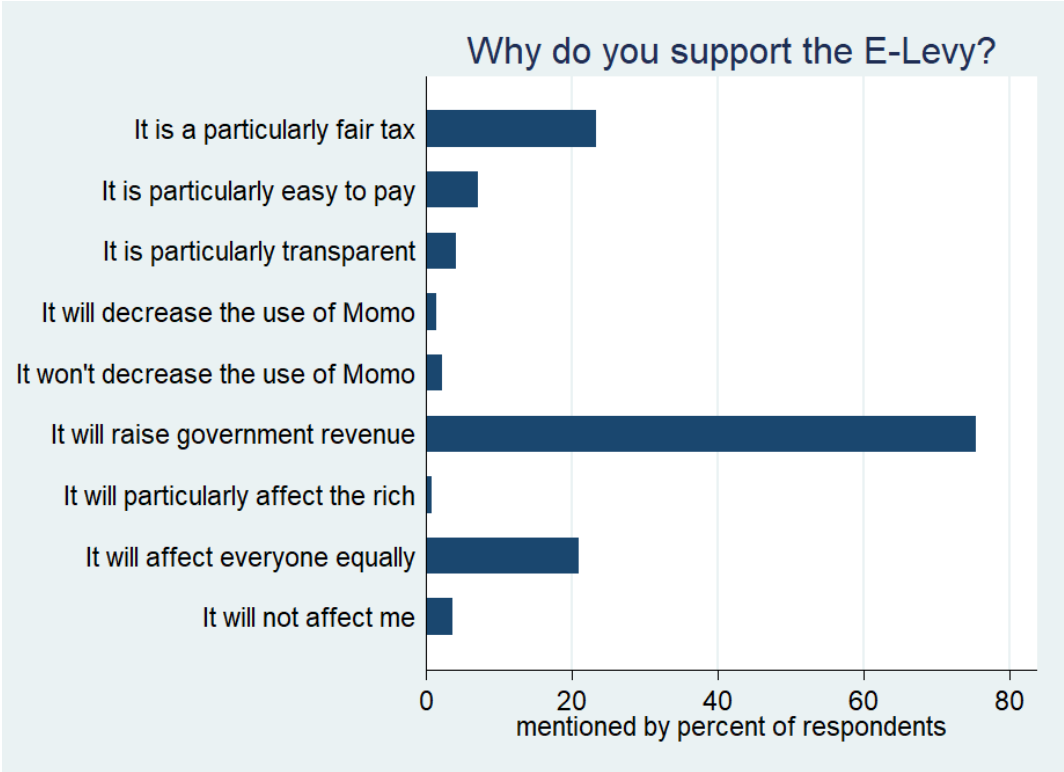
Note: multiple responses possible.

When we asked supporters of the E-levy why they supported the proposal, reference to public revenue clearly dominates with over two-thirds of supporters – far ahead of references to fairness, ease of pay and transparency, as illustrated in **Figure** . This implies that of the

<sup>18</sup> This mirrors the findings of Afrobarometer’s national survey on this issue, which finds that over 75% of the population agree with the statement that ‘The e-levy is a bad idea because it means that more tax burden will be put on the poor and on ordinary citizens’ (Afrobarometer 2022). That being said, this result from the Afrobarometer survey needs to be interpreted with some caution, as it is presented as a ‘Which of the following statements is closest to your view’ question against the statement: ‘The e-levy is a good idea because it means that more Ghanaians will contribute to the country’s tax revenues.’ It is worth noting that the question set-up is double-barrelled, and might indicate more disapproval of the e-levy in general than distributional concerns.

different arguments that the government has put forward, the revenue imperative has cut through most clearly – at least among informal workers in Accra.

**Figure 12 Distribution of reasons given by respondents who supported the introduction of the E-levy**



Note: multiple responses possible.

In order to better understand who supports (and does not support) the E-levy, and explore what drives these perceptions, we ran two exploratory regressions – not to make causal claims, but to illustrate patterns of support and opposition to the tax. Both specify 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 hypothesise 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 MoMo to make any transactions in the past month. The second regression adds additional variables that describe general attitudes about governance in Ghana. This includes their tax morale, support for the governing party, satisfaction with the government, and trust in the government with respect to spending taxes – which we measure through how unlikely respondents find it that the government will misuse taxes or revenue collected from citizens. We would expect all of these variables to be positively correlated with support for the E-levy. Table 2 summarises the results.<sup>19</sup>

<sup>19</sup> As 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 re-run these regressions while adding the month of the interview as a 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 2<sup>nd</sup> model. Similarly, we have added controls based on whether respondents used MoMo to pay for goods and services or for transactions to other people, and found no meaningful changes to any of the results presented here.

**Table 2 Determinants 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 <sup>2</sup>	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.

Several key findings emerge. We find that women in Accra's informal economy are substantially less likely to support the E-levy. While 21.3 per cent of the men in our sample expressed support for the E-levy, the same was true for only 12.2 per cent of women. Even if we set all variables included in model 2 at means, the marginal effect still suggests a lower support of women for the E-levy of over 5 per cent. What is driving this result? While one might suggest that this is driven by the over-representation of women in specific sectors, these findings are robust to the inclusion of a range of other sectors, including market trading, street-vending, food retail or home-based work (not shown in the table). We hypothesise that two of these currently unobserved factors are playing a role in driving this result. It seems possible that women might more frequently use MoMo for private rather than professional use, and consequently might be more resistant to this being taxed. Furthermore, while government rhetoric around the E-levy has suggested that informal workers are currently not taxed, it is well established that informal workers do indeed pay a range of formal and informal taxes and fees. It seems possible that the tax burden in formal and informal taxes relative to income for women in the informal economy could be higher than for men, and might contribute to more resentment toward the E-levy. Nonetheless, the gender dynamics here are remarkably clear and need further exploration.

We also find that older and more educated individuals are more likely to support the E-levy, while some of the other features of informal businesses that we hypothesised would influence support for the E-levy – income and access to a bank account – do not appear to do so. Whether an informal worker has employees – whom they might pay through MoMo – is also not significantly correlated with support for the levy. Somewhat strikingly, actually having used MoMo 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 by wider political perceptions. The second model examines this hypothesis.

Here, there are clear indications that wider political perceptions are strongly correlated with support for or opposition to the E-levy. This seems unsurprising, given the highly polarised and politicised 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 priors, 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 higher belief that misuse of collected taxes is unlikely), and higher levels of unconditional tax morale, are all associated with a higher level of support for the E-levy.

One of the most common talking points about the perception of the E-levy in Ghana so far has been that perceptions run along party lines, and that support has been polarised along political allegiance throughout the pitched political battles over its introduction. We do find 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 perception questions need to be evaluated against the extent of the policy's unpopularity. While NPP supporters were more likely to support the E-levy, there is still no majority among them for its introduction – even among NPP party supporters in our sample, support for the E-levy is only at 32 per cent.<sup>20</sup>

Overall, these results support the idea that, rather than just being about the concept of mobile money taxation, public perception in Ghana, at least among informal workers, is deeply dependent on people's evaluation of the current government, and their trustworthiness – not just in collecting a new tax, but also in spending it. And that perception is largely negative – over 80 per cent of our sample are not satisfied with the government's performance, and two-thirds find it likely that the government will misuse collected revenue. While some of this might be rooted in the particular experience of informality in Accra, it is worth noting that here, once more, our findings mirror trends for Ghana more widely. In 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 per cent of their respondents were either not very confident or not at all confident (Afrobarometer 2022).

## 7 Discussion and policy implications

This paper uses data from a survey of 2,700 self-employed informal workers in Accra to examine their pattern of use of mobile money platforms for financial transactions, and, therefore, the likely impact of a 1.5 per cent E-levy on them. In this concluding section, we examine the impacts from an equity standpoint, with reference to income (reported earnings), gender and occupational sector, in effect providing an empirical basis for disentangling the various claims and counterclaims about the E-levy that continue to fuel public debate.

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<sup>20</sup> Similarly, a (slim) majority of informal workers who are satisfied with the government's performance still oppose the E-levy. In order to find spaces where a majority for the E-levy exists, we need to select more specific sub-groups, such as 'men who are satisfied with the government's performance', but the size of these, both in our sample and in the underlying population, quickly becomes rather small.

One such claim was that the heavy criticism of the E-levy was politically motivated and manipulated. We tested this claim and found some support for the idea of a partisan bias – supporters of the ruling party were more likely than opposition supporters to agree with the E-levy. However, the majority of supporters of both parties were against the tax. What explains this general antipathy to the E-levy among informal workers? The most common reason given for opposition to the E-levy referenced its perceived negative impact on the poor. The next three common reasons also appealed to related notions of fairness, particularly in relation to the distribution of the tax burden.

This is a particularly interesting finding, because 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 presumably 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. Based on the results presented here, it is safe to say that, at least in Accra's informal economy, 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. It is also necessary to understand these concerns about the levy's equity implications, and especially concerns around an increased tax burden, in conjunction with the fact that many informal workers, despite government narratives to the contrary, are already paying a range of formal and informal taxes. We will expand on this dynamic in a future paper based on this survey.

Our analysis of the E-levy's distributional impacts also highlights negative impacts on equity, in line with concerns of informal workers. First, it is worth noting that the threshold of 100 cedis per day does cushion low-earners. By their own estimation, a third of the sample – transacting a median amount of 300 cedis – would be liable to pay tax on their MoMo transactions. However, this does not mean that all lower-income users are shielded from the tax. As we have highlighted above, some users who are below the minimum threshold for income tax payments would still be liable for some E-levy payment. Consequently, despite the threshold, our analysis of the mobile money use patterns of self-employed informal workers shows that, overall, the E-levy is highly regressive, as one would expect with a flat tax, with little significant difference in payments across earning categories and occupational sectors. The implications for equity are further deepened with the related findings that, of the surveyed MoMo users (who made up half of the sample), the lowest earners transact higher amounts relative to many in higher-earning categories.

Direct policy implications follow from this. First, as we have shown that the threshold probably does shield some lower-income groups from E-levy payments, 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. Second, the fact that the tax is regressive despite the threshold should be a relevant factor informing wider tax policy in Ghana, and feed into consideration of how to spend the income generated through the E-levy.

Third, trust in the government – or more broadly, the social contract between the Ghanaian 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, was low, shaping low support for the E-levy. 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). These dynamics emphasise the importance following the introduction of the E-levy of Ghanaian policymakers rebuilding trust, especially with lower-income groups. One factor that might shift the generally negative perception of the E-levy would be a visible show of service provision, demonstrating that the

government is delivering on its accountability promises related to the tax (Jonny-Nuekpe 2022). In 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 – though this has happened elsewhere, including in Côte d'Ivoire. The trade-offs and impact of doing so require greater exploration, particularly given Ghana's own contentious history with earmarking revenue.

These relationships are, of course, dynamic. The E-levy has been recently introduced, and we can expect that both perceptions and usage of mobile money will change.<sup>21</sup> This emphasises the importance of future research on this issue. For example, a study tracking both perception and behaviour around the E-levy, at a further distance from the heat it initially generated, would yield further useful insights. As we have highlighted throughout this paper, the dynamics described here are deeply gendered. While we have put forward some reflections on possible mechanisms that may drive these gendered perceptions and outcomes, 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? 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 MoMo 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? There is substantial space for additional research here.

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<sup>21</sup> It is worth noting that the MoMo agents in Ghana who had been among the most vocal critics of the E-levy did an about-face to offer the tax their support, on the basis of a reduction in the amount and introduction of exemptions (Ghana Presidency 2022).

## Appendix

### Appendix Table 1 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
Retail	Non-food 22 Cooked food 23 Uncooked food 24 Other retail
Wholesale	Non-food 25 Food 26 Other wholesale
Other services	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									
2.7 In the past month, how many persons assisted you in this business activity?:	Regular paid employee? _____  Casual worker? _____  Contributing family worker? _____  Apprentice? _____  Business partner? _____									
2.30 In the past calendar month, what amounts (in cedis) do you think you've transacted through MoMo for each of the following:										
Transferred to other people	GH¢ _____									
Bills paid	GH¢ _____									
Purchase of goods or services	GH¢ _____									
2.31 Have you had any days in the past calendar months where you have transacted more than 100 cedi using Momo?	Yes No →Skip to 3.1 Don't know →Skip to 3.1 Refuse to answer →Skip to 3.1									
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? _____	GH¢ _____									
							During the last 12 months:			
3.1 During the last 7 days, how many hours did you actually work in this activity?							3.2 How many hours did you work in a typical day?	3.3 How many days did you work in a typical week?	3.4 How many weeks did you work in a typical month?	3.5 How many months did you work in the last 12 months?
a. Sun	b. Mon	c. Tues	d. Wed	e. Thur	f. Fri	g. Sat				
3.6 What is the easiest way for you to tell us your earnings after expenses? Would it be.....							TIME UNIT Daily.....1 Weekly.....2 Fortnightly...3 Monthly.....4 Quarterly.....5 Yearly.....6			
3.7 How much money from this activity usually goes to you personally <u>after expenses</u> ?							GH¢ _____			

<p>3.8 In a typical day, how much total money comes into your business <u>before any deductions</u> (turnover)?</p>	<p>GH¢_____</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>National government GRA AMA Traditional authorities</p>	<p>1 = Not at all likely 2 = Not likely 3 = Neither likely nor unlikely 4 = Somewhat likely 5 = Very likely 6 = N/A / I don't interact with this actor</p> <p>-888. Refuse to Answer -999. Don't know</p>
<p>6.1 Which of the following statements is closest to your view?)</p> <p>Statement 1: It is better to pay higher taxes, if it means that there will be more services provided by government</p> <p>Statement 2: It is better to pay lower taxes, even if it means there will be fewer services provided by government.</p> <p>Note: Read out response options.</p>	<p>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</p> <p>-888. Refuse to Answer -999. Don't know</p>
<p>6.9 Do you agree with the idea with the government's recent legislation to tax mobile money transactions (known as the E-levy)?</p>	<p>1 = Yes → 6.10 2 = No → 6.11</p> <p>-888. Refuse to Answer → 6.12 -999. Don't know → 6.12</p>
<p>6.10 Why? (allow multiple responses, in no particular order)</p>	<p>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</p> <p>Go to Q6.12</p>
<p>6.11 Why not? (allow multiple responses, in no particular order)</p>	<p>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</p>
<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</p>

	<p>-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</p> <p>-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>

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