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AUTHORS

Odd-Helge Fjeldstad
Chr. Michelsen Institute and
African Tax Institute, University of Pretoria

Sunniva Nygård Ingholm
Chr. Michelsen Institute

Lucas Katera
REPOA

Emil Løstegård
Chr. Michelsen Institute

Ingrid Hoem Sjursen
Chr. Michelsen Institute

Vincent Somville
Department of Economics,
Norwegian School of Economics
and Chr. Michelsen Institute

Jasmin Vietz
ifo Institute and University of Hohenheim

Tax Salience
Experimental Evidence from Tanzania

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Odd-Helge Fjeldstad* Sunniva Nygård Ingholm† Lucas Katera‡ Emil Løstegård§ Ingrid Hoem Sjursen Vincent Somville‖ Jasmin Vietz**

Abstract

In sub-Saharan Africa, the adoption of mobile money has grown substantially during the past decade, becoming an important driver of financial inclusion in the region. At the same time, many governments have introduced taxes on mobile money transfers, which may discourage use and encourage a return to cash-based transactions. In several countries, these taxes have been highly salient to taxpayers following public debate and subsequent rate reductions. This paper examines the effect of tax salience on the use of mobile money. Drawing on a lab experiment with small business owners in Dar es Salaam, Tanzania, we randomly vary whether participants are reminded of an existing mobile money tax when making incentivized choices between receiving payments in cash or via mobile money. We find that increasing the salience of the tax significantly reduces the share of participants choosing mobile money. Evidence from a post-experiment questionnaire indicates that participants were well informed about the tax, suggesting that the effect does not operate through lack of knowledge.

*Chr. Michelsen Institute and African Tax Institute, University of Pretoria; e-mail: Odd.Fjeldstad@cmi.no

†Chr. Michelsen Institute; e-mail: Sunniva.Ingholm@gmail.com

‡REPOA; e-mail: Katera@repoa.or.tz

§Chr. Michelsen Institute; e-mail: Emil.Lostegard@gmail.com

Chr. Michelsen Institute; e-mail: Ingrid.Sjursen@cmi.no

‖Department of Economics, Norwegian School of Economics and Chr. Michelsen Institute; e-mail: Vincent.Somville@nhh.no

**ifo Institute and University of Hohenheim; e-mail: Vietz@ifo.de, *Corresponding Author.*

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1 Introduction

The adoption of mobile money transfers has grown substantially in Sub-Saharan Africa during the past decade (Suri et al., 2023). These services allow users to conduct financial transactions without owning a bank account (Apeti, 2023; Suri et al., 2023). Increasingly, governments in the region have turned to taxing mobile money transactions as a source of revenue (Mader et al., 2022; Anyidoho et al., 2023; Apeti and Edoh, 2023; Pfeil et al., 2024; Okunogbe and Tourek, 2024; Barczay et al., 2025). The mobile money tax is relatively easy to enforce, as it is typically collected by telecommunication companies and service providers. Proponents argue that it offers the added benefit of capturing transactions within the informal sector. Critics, however, contend that the tax disproportionately burdens lower-income groups, incentivizes a shift back to cash transactions, and undermines financial inclusion (Anyidoho et al., 2023; Okunogbe and Tourek, 2024). Despite these debates, there is limited evidence on the effects of the mobile money tax on the use of mobile money services (Anyidoho et al., 2023).

At the same time, the introduction of the mobile money tax has sparked heated public debate in several African countries, making it highly salient to taxpayers (Anyidoho et al., 2023; Okunogbe and Tourek, 2024). The high salience is likely to amplify the effect of the tax on the use of mobile money transactions. Contrary to the central assumption in public economics that agents fully optimize with respect to tax policies, the recent literature in behavioral public economics suggests that tax salience affects individual behavior (Chetty et al., 2009; Slemrod, 2019).

This paper examines the causal effect of tax *salience* on mobile money use. We conduct a lab experiment with small business owners in Dar es Salaam, Tanzania, where a tax on mobile money transfers and withdrawals was introduced in 2021 in addition to other existing taxes (Ministry of Finance and Planning, 2021; Pfeil et al., 2024). In the experiment, participants are randomly assigned to either a treatment group, which receives a reminder about taxes and fees on mobile money transfers to increase the salience of the tax (Salience Treatment), or to a control group, which receives no such information. We elicit participants' preference for cash relative to mobile money. To do so, we use a multiple price list (Allcott and Kessler, 2019), and calculate participants' willingness to pay (WTP) for mobile money. We find that making the mobile money tax more salient significantly reduces participants WTP for mobile money.

The paper relates to several strands of the literature. First, it relates to the emerging literature on the taxation of digital financial services, including mobile money transactions. A handful of studies have documented negative effects of mobile money tax, including reduced support for the state's right to collect taxes and lower self-reported willingness to pay tax (Yeandle and Doyle, 2024), regressiveness (Anyidoho et al., 2023), and declines in mobile money transactions and active mobile money accounts (Barczay et al., 2025). Clifford (2020) finds that in Uganda, the mobile money tax initially led to a substantial decline in use, though transaction frequency returned to pre-tax levels within 18 months. Using the entropy balancing method, Apeti and Edoh (2023) find that the adoption of mobile money increases tax revenues in developing countries by improving institutional quality, broadening the tax base and simplifying the tax payment process, though their analysis does not explicitly consider taxation of mobile money transactions. Our paper contributes to this literature by demonstrating that the salience of the mobile money tax causally reduces participants' preference for mobile money relative to cash.

The paper also relates to the literature on the effect of tax salience on taxpayer behavior. Prior studies show that tax salience increases individuals' willingness to punish unaccountable decision-makers in laboratory settings (de la Cuesta et al., 2022; Martin, 2023; Sjursen, 2023). We contribute to this experimental literature by examining the effect of tax salience on another outcome: the use of mobile money.

Furthermore, by analyzing how tax salience influences preference for mobile money, we also add to the studies by Chetty et al. (2009) and Finkelstein (2009) who show that consumers tend to under-react to non-salient taxes, as well as to the broader literature on salience and economic behavior (see Bordalo et al., 2022, for a review). While much of this existing evidence comes from high-income countries, we extend the analysis to a lower-middle-income context characterized by weak state capacity and low levels of trust in public institutions. This setting allows us to go beyond documenting inattention to taxes and to explore how tax salience interacts with institutional perceptions. In particular, we examine whether the effects of salience operate not only through limited attention or information frictions, but also through changes in attitudes toward the government, thereby linking tax salience to broader issues of trust and financial behavior.

The paper is organized as follows. Section 2 presents the conceptual framework and provides institutional background for the mobile money tax in Tanzania. The experimental design is presented in Section 3, and Section 4 discusses the sample and setting. Section 5 outlines our empirical strategy. The results are discussed in Section 6. Section 7 concludes.

2 Conceptual Framework

2.1 Tax Salience and Economic Behavior

Standard models in public economics assume that individuals fully optimize economic choices with respect to all components of prices, including taxes and fees. From this perspective, a tax on mobile money transactions should reduce use (see Barczay et al. (2025) who develop a theoretical model showing that mobile money taxation unambiguously reduces choice of mobile money as the mode of transfer and induces substitution toward cash). However, research in behavioral public economics shows that this assumption often fails: individuals may overlook non-salient taxes when making decisions, resulting in weaker behavioral responses than classical theory predicts.

Chetty et al. (2009) provide a simple theoretical explanation for this underreaction. Since calculating tax-inclusive prices requires cognitive effort, and the expected payoff from re-optimizing is often small relative to that effort, individuals may rationally choose not to fully internalize taxes when making routine decisions. Chetty et al. (2009) show that consumers substantially reduce demand when taxes are made salient at the point of purchase, even though they can accurately report the tax rate when asked directly. This suggests that inattention, rather than lack of knowledge, drives the muted response to non-salient taxes.

Mental accounting may amplify responses to salience: individuals often categorize expenses in ways that distort optimization (Thaler, 1999; Silva et al., 2023). Fees and commissions may be viewed as transaction costs embedded in the price of using a service, while taxes are tracked separately and perceived more negatively, particularly in contexts of limited trust in the state and limited public goods provision, such as Tanzania and other low- and lower-middle income countries. When the tax component of mobile money fees is not salient, it may be effectively bundled with other charges and thus less likely to trigger a strong behavioral response. By

contrast, making the tax salient could shift attention to a distinct mental account, increasing its perceived burden relative to the overall transaction cost.

In the context of the mobile money tax, salience is particularly relevant. Transaction costs are multi-layered, with service fees, withdrawal charges, and agent commissions all contributing to the effective price of use. The tax is deducted automatically whenever a mobile money transfer is made, but because it is embedded within the broader set of transaction costs, it may not always be cognitively salient in day-to-day decision-making. Within this complexity, the mobile money tax may be overlooked or underweighted in decision-making. Our Salience Treatment targets precisely this margin: by explicitly reminding participants of the tax, we increase its cognitive visibility and amplify its perceived cost. Consequently, even though the underlying economic cost of using mobile money remains unchanged, WTP may decline more sharply when the tax is made salient.

2.2 Institutional Background: The Mobile Money Tax in Tanzania

Tanzania introduced the Electronic Money Transaction Levy ('e-levy') in July 2021, through amendments to the Finance Act under the National Payment Systems Act, Cap 437 (Ministry of Finance and Planning, 2021; GSMA, 2021). For simplicity, we refer to this as the mobile money tax. The tax applied to both mobile money transfers and withdrawals, with charges ranging from TZS 10 to TZS 10,000 (July, 2021) depending on the transaction size (Bermeo, 2023; Ministry of Finance and Planning, 2021; Pfeil et al., 2024). This was imposed in addition to the existing 18% VAT and 10% excise duty on mobile money transfers and withdrawal fees (Bermeo, 2023; Pfeil et al., 2024; GSMA, 2021). As a consequence, the average cost of mobile money transactions rose to more than three times the East African regional average (Penteriani and Fichers, 2023, p.8).

The mobile money tax faced widespread criticism. Civil society organizations, businesses, and citizens voiced concerns about the financial burden on consumers—fearing it would drive people back to cash-based transactions and undermine financial inclusion—as well as its negative impact on the financial situation of telecoms operators (Bermeo, 2023; Pfeil et al., 2024). Empirical evidence supports these concerns: Penteriani and Fichers (2023) report that between June and September 2021, the total number of person-to-person transactions dropped from 30

to 18 million per month, and cash-out transactions declined from 33 to 25 million per month.

In response to widespread public outcry, the government introduced a series of reductions to the mobile money tax. In September 2021, the rates were cut by 30% lowering charges to a range between TZS 7 and TZS 7,000 (Bermeo, 2023; Sehloho, 2022; Pfeil et al., 2024). Further reductions followed in July 2022, when charges ranged between TZS 10 and TZS 4,000.[1] On October 1st 2022, the rates were reduced again to between TZS 10 to TZS 2,000 (United Republic of Tanzania, 2022a,b).[2] Our experiment, conducted in February 2023, took place while these rates were still in effect. Figure A.1 in the Appendix provides an overview of the size of the mobile money tax by amounts sent and shows that the tax is structured in a tiered, fixed-fee schedule where each transaction bracket has a fixed tax which is increasing in steps for higher brackets. This tax schedule remained in place until changes were implemented through the Finance Act 30th June 2023 (United Republic of Tanzania, 2023), which limited the applicability of the mobile money tax to withdrawal transactions only.

Despite these adjustments, the mobile money tax generated substantial revenues. According to Penteriani and Fichers (2023), the government collected TZS 252 billion ($\approx 0.15\%$ of GDP, and $\approx 1\%$ of total government revenue)[3] from the mobile money tax in 2022. However, the report argues that the overall effect on revenues may have been negative, as the decline in mobile money usage reduces the collection of other taxes, offsetting the direct gains.

Operator fees In addition to the tax, mobile money transfers are subject to operator fees. These fees are typically also structured in tiered, fixed fee schedules. Figure A.2 provides an overview of the operator fees for Vodacom, one of the major telecom operators in Tanzania, at the time of the experiment. It shows that the operator fees for sending mobile money range from TZS 15 to TZS 5,400 depending on the transfer amount bracket.

[1] These rate reductions were accompanied by an expansion of the mobile money tax's scope to include additional electronic transactions (see e.g. Pfeil et al., 2024).

[2] During the same period, the government also exempted cash withdrawals below TZS 30,000, and introduced and adjusted levies on electronic banking transactions, over-the-counter payments, and ATM withdrawals (Pfeil et al., 2024).

[3] Author's calculations based on the IMF World Economic Outlook Database for 2022.

3 Experimental Design

This section outlines the experimental design. We begin by describing the sequence of events in the experiment and detailing the treatment. We then describe how we elicit the main outcome, willingness to pay (WTP) for mobile money. The full questionnaire is provided in the Online Appendix.

Sequence of events Each participant takes part in one of 32 sessions (for details on recruitment see Section 4 and Table A.6 in the Appendix). At the beginning of the session, participants first provide their informed consent to take part in the study. They then complete a short pre-questionnaire on a tablet, capturing basic demographic characteristics. In addition, each participant is asked to write down their phone number on a paper slip labeled with an ID number from 1 to 25.[4] Next, half of participants are randomly assigned to receive a reminder about a tax on mobile money (Salience Treatment). Finally, all participants make a series of choices designed to elicit their WTP for mobile money.

3.1 Salience Treatment

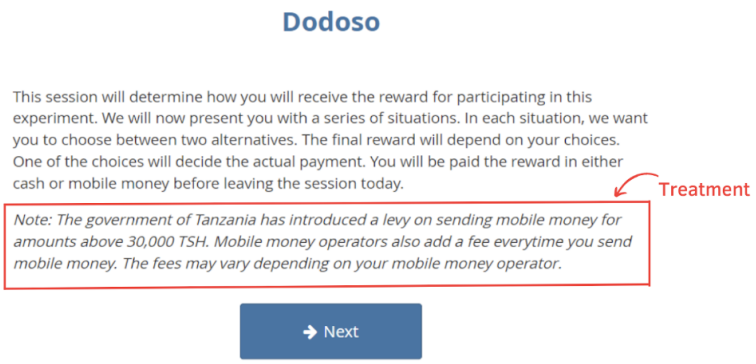
Participants are randomly assigned to either receive reminders about the mobile money tax (Salience Treatment) or to a control group not receiving these reminders (control group). Participants in both groups first receive general information about the elicitation of WTP for mobile money.[5] Participants in the Salience Treatment additionally receive a reminder about the mobile money tax on the introduction screen, as illustrated by the red box in panel (a) of Figure 1 (the red box is only to illustrate the treatment and was not visible to the respondents). In addition to the reminder on the introduction screen, participants in the Salience Treatment received reminders about the mobile money tax on each of the seven decision screens: A parenthesis with the text "Remember that there is a levy and operator fees when withdrawing and sending mobile money" behind the decision alternative for receiving mobile money (as illustrated in panel (b) of Figure 1). Participants in the control group did not receive these reminders—they only saw the amounts.

Thus, while the actual cost of the mobile money tax is the same for all participants, our exper-

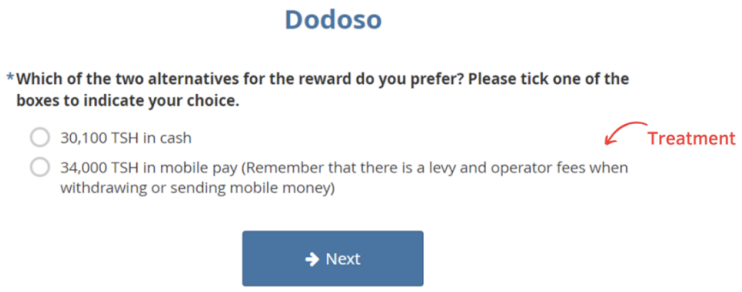
[4] Providing the phone number is voluntary, so participants also have the option not to write their phone number. The phone numbers are used only to transfer the participation fee if they chose to receive it as mobile money.

[5] Details on the WTP measure are provided in section 3.2.

Figure 1: Salience Treatment (English Translation)



(a) Introduction



(b) Example of Decision Screen

imental intervention explicitly reminds participants about the mobile money tax, and thereby makes its cost salient at the point of decision. This design allows us to capture the behavioral response to salience itself, rather than to the underlying monetary cost, thereby providing a clean test of the theoretical mechanism discussed above.

3.2 Main Outcome: Willingness to Pay (WTP)

After the Salience Treatment, we elicit WTP using a Multiple Price List (MPL) format with seven questions, following Allcott and Kessler (2019). In each question, participants choose between receiving their participation fee in cash or in mobile money, with the amounts differing across payment methods. To ensure incentive compatibility, participants are informed that at the end of the survey one of these questions will be randomly selected, and their participation fee will be paid out according to their choice in that question.

Table 1 shows the seven choices between cash and mobile money amounts participants faced

(second and third column).[6] The tax for transferring mobile money was the same for all the mobile money amounts the participates could choose from, i.e., TZS 351 (see the Mobile Money Tax Schedule in Figure A.1 in the Appendix). All the mobile money amounts participants faced were also subject to the same size of operator fees when transferring money i.e., TZS 400.[7] The fourth column in Table 1 reports the mobile money amount the participants are left with if they take the taxes and fees associated with transferring mobile money into account. The table illustrates that participants who do not take taxes and fees into account should choose mobile money in the first four questions, whereas respondents who take taxes and fees into account should choose mobile money for the first three questions only.[8]

Table 1: Overview of the MPL

Question	**Cash**	**Mobile Money** Nominal Amount	**Mobile Money** After Tax and Operator Fee
1	30,100	TZS 34,000	TZS 33,249
2	31,600	TZS 34,000	TZS 33,249
3	33,100	TZS 34,000	TZS 33,249
4	34,000	TZS 34,000	TZS 33,249
5	34,000	TZS 33,100	TZS 32,349
6	34,000	TZS 31,600	TZS 30,849
7	34,000	TZS 30,100	TZS 29,349

Notes: The table shows the choices participants faced in the experiment. The amounts shown to participants are displayed in the "Cash" and "Mobile Money, Nominal Amount" columns. "Mobile Money, After Tax and Operator Fee" shows the mobile money amount net of the mobile money tax (TZS 351) and operator fee (TZS 400). Green cells highlight cases in which the mobile money amount is weakly larger than the cash amount.

Our main outcome is the participants' WTP for mobile money. In our setting, a positive WTP indicates that the participant is willing to forgo part of the participation fee to receive it via mobile money, whereas a negative WTP reflects a preference for cash, meaning the participant is willing to sacrifice some amount to avoid mobile money. To illustrate, consider a participant who in Question 1 faces a choice between receiving TZS 34,000 via mobile money

[6]To avoid anchoring effects, the order of the options in the choice sets were randomized for each participant (Jack et al., 2022).

[7]Figure A.2 describes the fee schedule from 1st October 2022 for Vodacom, one of the major operators in Tanzania, and shows that transferring mobile money to accounts using a different operator was more expensive, TZS 612. Corresponding fee schedules for the other major providers, Airtel and Tigo, at the time of the experiment, are not publicly available. However, according to the International Finance Corporation, based on providers' publicly disclosed tariffs, average mobile money operator fees fell within similar ranges across major providers in November/December 2022 ((International Finance Corporation, 2024).

[8]The after tax and operator fee amounts in column 3 in the table are calculated using the fee for transfers within the same company (TZS 400). Table A.2 in the Appendix additionally displays a column with amounts using the fee for transfers to different companies (TZS 612).

or TZS 30,100 in cash. Choosing mobile money in this case implies that they are not willing to give up TZS 3,900 to obtain cash instead. In Question 2, the cash option increases to TZS 31,600, while the mobile money option remains TZS 34,000. If the participant now switches to cash, this reveals that they are willing to sacrifice TZS 2,400 in order to avoid mobile money. Taken together, these choices indicate that the participant's WTP for mobile money lies between -3,900 and -2,400.

Evaluating all seven choices allows us to place each participant's WTP within one of eight intervals, symmetric around zero (expressed in TZS 1,000 units): $(-\infty, -3.9]$; $[-3.9, -2.4]$; $[-2.4, -0.9]$; $[-0.9, 0]$;$[0, 0.9]$;$[0.9, 2.4]$;$[2.4, 3.9]$ and $[3.9, \infty)$.

For the analysis, we assign a unique WTP point estimate to each interval, defined as the midpoint of its endpoints. For the two open-ended intervals $(-\infty, 3.9]$ and $[3.9, \infty)$, we follow Allcott and Kessler (2019): we assume that the conditional WTP distribution within these ranges follows a triangular shape, with initial density equal to the average density of the adjacent interval. This procedure yields mean WTP values of -12.5 for the lower interval and 11.73 for the upper interval (see Table A.5 in the Appendix).

As part of our robustness analysis, we construct two alternative WTP measures by scaling the calculated means of the outer intervals to one-third and one-half, respectively. This ensures that our findings are not driven by the particular parametric assumptions imposed on the tails of the WTP distribution.[9]

Experimenter Demand The treatment is highly salient as information about the mobile money tax is repeated in each of the seven questions in the willingness-to-pay exercise. This salience may have led participants to infer that the experimenters expected them to select cash, raising concerns about potential experimenter demand effects (Zizzo, 2010). While such effects cannot be ruled out, participants' decisions involved real and economically meaningful monetary stakes. Payoffs in the experiment range from TZS 30,100 to 34,000. To benchmark these amounts, Dautheville (2025), studying a similar population (though restricted to individuals below age 30), document a mean daily profit of TZS 8,603, while Siebert and Mbise (2018) report average daily incomes for small businesses in markets in Dar es Salaam of between TZS

[9] Detailed calculations are provided in Appendix C.

9,200 and TZS 34,000. Relative to these income levels, the experimental stakes are substantial, suggesting that participants faced strong incentives to choose their preferred payment method rather than responding mechanically to perceived experimenter expectations.

4 Sample and Setting

The study was conducted in February 2023 in Dar es Salaam, which is the largest city and financial hub of Tanzania. Participants were small business owners, recruited from 16 different markets across the city. These markets typically consist of many small shops, each operated by a single business owner (market trader), and serve as key locations for purchasing food and other goods, such as clothes and household items. This sample provides an ideal testing ground for our research question. First, small businesses are liable to different tax-like payments to various actors. Small businesses with a larger turnover are liable to pay presumptive tax to the national government (Edslev, 2024; Jacobsen, 2023; Siebert and Mbise, 2018). Hence, participants have experience with payment of various types of taxes. Second, mobile money is a frequently used payment method among participants in our sample. The mobile money tax is therefore a regular cost.

In each market, we randomly selected 50 participants from the official trader's list with assistance from market leaders.[10] Among those invited, 98% agreed to participate and were assigned a specific time to be present at the market the following day. On the day of the experimental session, a bus transport was provided to take participants from their respective markets to the study location, with return transport arranged afterward. This streamlined the process and made participation convenient for small business owners. Within each market, participants were divided into two separate sessions, resulting in a total of 32 sessions with 25 participants each. Sessions with participants from the same market were scheduled consecutively on the same day, with the second group picked up before the first returned. This ensured that participants did not interact with one another until everyone from the same market had completed the study.

The lab-in-the-field experiment was conducted at REPOA, a leading independent Tanzanian

[10]The traders list, managed by the market committee, contains the names of all traders in a market. To select participants, the total number of names N on the traders list was divided by 50, and then every $\frac{N}{50}$th trader was invited to take part in the study.

research institution.[11] Upon arrival, participants were welcomed outside the conference hall where the experiment took place. They were then asked to enter the room one by one, draw a number from a box by the entrance, and take a seat at the desk with the corresponding number. Participants were instructed to wait for further instructions without using their phones or communicating with others. Each desk was equipped with a pen, a slip to write down their desk and phone number, and a bottle of water. Once everyone was seated, enumerators instructed participants to complete an electronic survey on the tablets provided. Participants were assured that all the responses and decisions made would be treated confidentially. Each participant received a minimum participation fee of TZS 30,100 (approximately USD 11.58 at the time of the experiment) (see section 3.2 for details). To ensure the anonymity of the participants, payments were made at the end of the session in sealed envelopes or via mobile money.

Table 2: Descriptive statistics of the sample

	Mean			**P-value of t-test**
	Control	Treatment	Total	Control vs. Treatment
Female	0.42	0.36	0.39	0.142
	(0.03)	(0.03)	(0.02)	
Older	0.41	0.49	0.45	0.041**
	(0.03)	(0.03)	(0.02)	
High School	0.27	0.29	0.28	0.589
	(0.02)	(0.03)	(0.02)	
Frequent MM User	0.52	0.53	0.52	0.914
	(0.03)	(0.03)	(0.02)	
Observations	316	302	618	618

Notes: The table reports descriptive statistics of the sample. Column (1) reports means for the control group, Column (2) for the treatment group, Column (3) for the entire sample (standard errors in parenthesis), and Column (4) reports p-values from two-sided t-tests of difference in means between control and treatment group. *Female* is an indicator taking the value of one if participant is female and zero otherwise. *Older* is an indicator taking the value of one if participant is older than the median age in the sample (42 years) and zero otherwise. *High School* is an indicator taking the value of one if the participant has obtained at least high school diploma and zero otherwise. *Frequent MM User* is an indicator taking the value of one if participant is using mobile money at least twice a week and zero otherwise.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[11] Research on Poverty Alleviation (REPOA) is a non-profit research organization focused on poverty and pro-poor growth. Its work spans several areas, including growth and poverty, governance, agriculture, technology, and social protection.

We next present descriptive statistics for our sample.[12] As shown in Table 2, 39% of participants are female. The proportion of females is slightly higher in the control group than in the treatment group (42% vs. 36%, respectively), this difference is not statistically significant (see last column of Table 2). The median age in the sample is 42 years. The share of participants older than the median age is significantly higher in the treatment group compared to the control group ($p = 0.036$). To account for this, we include an indicator for participants older than the median age (*Older*) in the regression analysis. Education is measured with an indicator for participants who have completed high school or a higher level of education, which applies to 28% of the sample. There is no significant difference in educational attainment between the treatment and control group. Furthermore, 52% of participants report using mobile money more than twice per week (*Frequent MM User*), with no significant difference in usage between treatment and control groups.

5 Empirical Strategy

We estimate the effect of the Salience Treatment on WTP, using the following equation with robust standard errors:

$$WTP_i = \alpha + \delta Salience_i + \beta X_i + \beta M_i + \theta_s + \varepsilon_i \tag{1}$$

Where WTP_i denotes the willingness to pay for mobile money of individual i (calculated as explained in Section 3.2). $Salience_i$ is an indicator variable equal to one if the participant receives the Salience Treatment, and zero otherwise. X_i is a vector of demographic characteristics. It includes a gender indicator (*Female*) equal to one if female and zero otherwise, an age indicator (*Older*) equal to one if the participant's age is above 42 years and zero otherwise, an education indicator (*High School*) equal to one if the participant has completed high school or a higher level of education and zero otherwise. M_i is an indicator equal to one if the participant is a

[12] Following our pre-analysis plan, we exclude inconsistent responses from the analysis (see Table A.1 in Appendix A). Specifically, 159 participants displayed multiple switching behavior, defined as switching between mobile money and cash more than once across the seven MPL questions. In addition, 18 participants are excluded for switching to the payment option offering a lower monetary amount than in the previous MPL question, as such choices are internally inconsistent and do not provide a valid measure of their true WTP for mobile money relative to cash. Finally, 5 participants were excluded at the outset of the study due to low literacy.

frequent user of mobile money (i.e., reporting usage "Twice a week or more" or "Daily"), and zero otherwise. θ_s represents session (s) fixed effects. As robustness checks, we additionally estimate Equation (1) with the two alternative WTP measures described in 3.2.

As an additional robustness check, we also estimate the treatment effect at the question level using the following specification:

$$Q_{ji} = \alpha + \delta Salience_i + \beta X_i + \beta M_i + \theta_s + \lambda_j + \varepsilon_i \tag{2}$$

where Q_{ji} is an indicator variable equal to one if participant i chooses mobile money in question j and zero otherwise. λ_j represents a question fixed effect (for each of the seven questions with question 1 as the reference category). One important advantage of this specification is that we can keep multiple switchers in the sample (while we cannot calculate the switchers' WTP as in equation (1)). We estimate equation (2) for the main sample as well as for the full sample (including multiple and inconsistent switchers). This allows us to check that the effects identified in the main analysis are not driven by the exclusion of multiple and inconsistent switchers. In this analysis, standard errors are clustered at the individual level.

6 Results

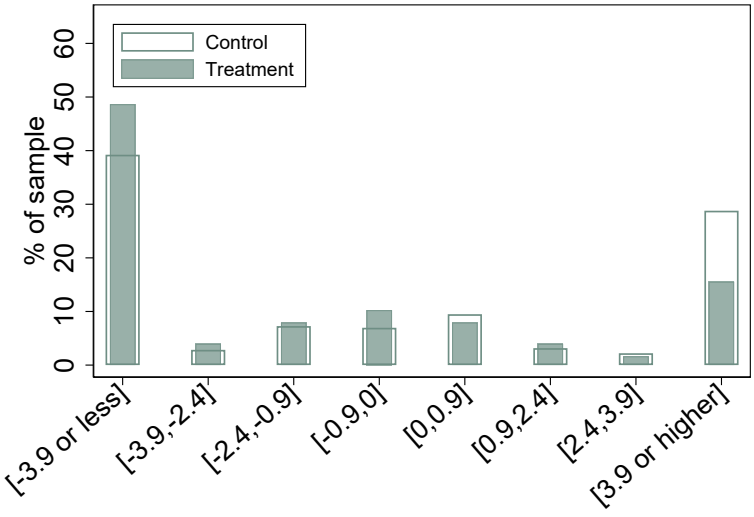
We start by presenting the distribution of WTP for mobile money in the treatment and control group. Thereafter we present the regression analysis, starting with the main WTP measure before reporting results from alternative WTP measures as well as the question level analysis. We end with a discussion of potential mechanisms.

6.1 Descriptive Analysis

Figure 2 illustrates the distribution of participants' WTP, in the Salience Treatment and the control group, respectively. In both groups, most participants fall on the outer bounds of the distribution, indicating that many participants consistently choose either cash or mobile money throughout the MPL. The figure also shows that the distribution of the Salience Treatment

group is shifted to the left relative to the control group, with fewer participants displaying a high willingness to pay and more participants displaying a low willingness to pay for mobile money. When restricting the analysis to switchers (defined as participants with a willingness to pay between -3.9 and 3.9) we observe that respondents in the treatment group switch to cash at earlier MPL questions than those in the control group, indicating a higher propensity to choose cash. As shown in Table 1, the optimal switching point when accounting for taxes and operator fees occurs at question 4, whereas the switching point based on nominal amounts alone is question 5. Figure A.3 in the Appendix illustrates the distribution of switching points across respondents. Consistent with the optimal benchmark, a larger share of participants in the Salience Treatment group switch at question 4, while a larger share of participants in the control group switch at question 5. Thus, increasing the salience of the mobile money tax raises the likelihood that participants choose the optimal switching point.

Figure 2: WTP interval distribution for the sample ('=TZS 1,000)



6.2 Main Analysis

Main WTP Measure Table 3 reports the results from estimating Equation (1) using our main measure of WTP. Column (1) reports the specification without any controls. The mean willingness to pay in the control group is TZS -1,604, while the corresponding mean in the treatment group is TZS -4,408. These values indicate that both treatment and control groups exhibit a negative willingness to pay for mobile money, reflecting an overall preference for cash. Across all specifications, the Salience Treatment has a negative and statistically significant effect on WTP for mobile money. Column (3) presents results for the specification with the full

set of controls. In this specification, the Salience Treatment reduces the mean WTP by TZS 2,494. We interpret these results as consistent with the interpretation that making taxes more salient decreases participants' preference for the taxed good or service.[13]

Column (3) further shows that frequent mobile money users and those with higher education exhibit significantly higher WTP for mobile money overall, suggesting that experience and financial literacy enhance valuation of the service.

Table 3: Effect of Salience Treatment on WTP

	(1)	(2)	(3)
Salience Treatment	-2.804***	-2.547***	-2.494***
	(0.760)	(0.765)	(0.758)
Female		0.023	0.267
		(0.816)	(0.817)
Older		0.012	-0.063
		(0.868)	(0.861)
High School		2.298***	2.069**
		(0.886)	(0.875)
Frequent MM User			2.498***
			(0.783)
Control Group Mean	-1.604***	-4.126*	-5.478**
	(0.561)	(2.232)	(2.220)
Session FE		✓	✓
Observations	618	611	611
R^2	0.022	0.118	0.134

Notes: Table shows OLS regressions where the outcome variable is WTP, measured by the mean value of the WTP intervals (expressed in TZS 1,000 units). Column (1) reports the specification with WTP regressed on *Salience Treatment*, an indicator equal to one if the respondent received the Salience Treatment and zero otherwise. Column (2) adds the indicator variables *Female*, *Older* and *High School* (see Table 2 for definitions) as well as session fixed effects. Column (3) reports the baseline specification including the indicator variable *Frequent MM User* (see Table 2 for definitions). Robust standard errors reported in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Alternative WTP Measures Table 4 presents regression results using WTP measures based on alternative assumptions (see Appendix C for details). The table shows that while the effect

[13]Table A.3 in Appendix A shows that these results are robust to specifications using a binary indicator for participants' WTP for mobile money.

of the *Salience Treatment* remains negative and statistically significant in Columns (2) and (3), the magnitude of the effect is smaller.

Table 4: Effect of Salience Treatment on Alternative WTP Measures

	(1) Main WTP	(2) WTP 2	(3) WTP 3
Salience Treatment	-2.494***	-1.292***	-0.875***
	(0.758)	(0.386)	(0.261)
Female	0.267	0.140	0.092
	(0.817)	(0.415)	(0.280)
Older	-0.063	-0.059	-0.060
	(0.861)	(0.438)	(0.296)
High School	2.069**	1.030**	0.676**
	(0.875)	(0.446)	(0.301)
Frequent MM User	2.498***	1.300***	0.888***
	(0.783)	(0.397)	(0.267)
Control Group Mean	-5.478**	-2.770**	-1.870**
	(2.220)	(1.143)	(0.795)
Session FE	✓	✓	✓
Observations	611	611	611
R^2	0.134	0.133	0.131

Notes: The table reports OLS regressions where the dependent variable is willingness to pay (WTP, expressed in TZS 1,000 units). Column (1) presents estimates based on a triangular distribution in which the mean WTP is assigned to the negative and positive outer bounds (main WTP measure). Columns (2) and (3) report results using alternative WTP measures, calculated as one-half and one-third, respectively, of the mean value at the of the main WTP measure (see Table A.5). Independent variables: treatment variable *Salience* (see Table 3 for definition) as well as session fixed effects and the background variables *Female*, *Older*, *High School* and *Frequent MM User* (see Table 2 for definitions). Robust standard errors reported in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Question Level Analysis Finally, we investigate the effect of the Salience Treatment on the choice between cash and mobile money, using the decisions made by the participants as specified in equation (2). An advantage of this approach is that it allows us to include multiple and inconsistent switchers in the analysis. The results are reported in Table 5. Columns (1) - (3) report the results for the main sample (excluding multiple and inconsistent switchers), Columns (4) - (6) report results for the full sample. Consistent with the previous results, Salience Treatment significantly reduces participants' preference for mobile money over cash. In the main sample, participants in the Salience Treatment are 11 percentage points less likely to choose mobile money in each decision compared to the control group (Column (3)). The table fur-

ther shows that this result is not driven by the exclusion of multiple and inconsistent switchers. When including these participants, the effect remains strong: those in the Salience Treatment are still 9 percentage points less likely to choose mobile money in each decision.

Table 5: Questions

	Main Sample			Full Sample		
	(1) LPM	(2) Probit	(3) ME	(4) LPM	(5) Probit	(6) ME
Salience Treatment	-0.109***	-0.334***	-0.109***	-0.091***	-0.257***	-0.091***
	(0.033)	(0.101)	(0.032)	(0.028)	(0.081)	(0.028)
Female	0.013	0.036	0.012	0.030	0.081	0.029
	(0.041)	(0.122)	(0.040)	(0.038)	(0.106)	(0.037)
Older	-0.007	-0.023	-0.007	0.015	0.041	0.014
	(0.033)	(0.097)	(0.032)	(0.024)	(0.067)	(0.023)
High School	0.083**	0.246**	0.080***	0.059**	0.162**	0.057**
	(0.032)	(0.097)	(0.031)	(0.026)	(0.074)	(0.026)
Frequent MM User	0.109***	0.335***	0.110***	0.095***	0.272***	0.096***
	(0.029)	(0.087)	(0.028)	(0.026)	(0.074)	(0.026)
Control Group Mean	0.460***	-0.139		0.507***	0.023	
	(0.081)	(0.264)		(0.079)	(0.219)	
Question FE	✓	✓	✓	✓	✓	✓
Session FE	✓	✓	✓	✓	✓	✓
Observations	4277	4277	4277	5495	5495	5495
R^2	0.161			0.108		
Pseudo R^2		0.132			0.085	

Notes: The table reports regressions where the dependent variable is an indicator equal to one if the participant chooses mobile money in a given question and zero otherwise. Independent variables include: treatment variable *Salience* (see Table 3 for definition) as well as session fixed effects and the background variables *Female*, *Older*, *High School* and *Frequent MM User* (see Table 2 for definitions). *LPM*: Coefficients from the Linear Probability Model. *Probit*: Coefficients from the Probit Model. *ME*: Average marginal effects. Standard errors are clustered at the individual level and reported in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6.3 Mechanisms

Inattention vs. lack of knowledge As outlined in Section 2, the positive effect of the Salience Treatment observed in Table 3 could be driven by either inattention or lack of knowledge. If respondents were unaware of the mobile money tax, then reminding them of its existence could update their knowledge and thereby change their willingness to pay (WTP). In this case, the treatment effect would reflect a correction of factual misunderstanding rather than a behavioral response to increased salience.

However, the evidence does not provide support for lack of knowledge as the underlying mechanism. In the post-experiment questionnaire, respondents were asked to report both the amount of the mobile money tax and the total cost they expect to pay for sending TZS 40,000. Table 6

summarizes these perceptions.

First, in both the treatment and the control group, 96% report positive amounts when asked about the size of the tax. The share does not differ statistically between the treatment and control group. Thus, making the mobile money tax salient does not increase awareness of its existence.

Second, respondents' numerical estimates of the tax are on average close to the true amount. Participants report a mean tax of TZS 322, which is about 77% of the true value of the tax for a TZS 40,000 transfer, i.e., TZS 419.[14] Again, estimates do not differ significantly between the treatment and control groups, which is consistent with the fact that the treatment did not communicate the tax amount. Respondents in both groups appear able to recall the relevant fee structure when asked directly. Taken together, these findings do not provide evidence for lack of knowledge as the primary mechanism.

Table 6: Mobile Money Tax and Operator Fee (estimated)

	Treatment	Control	Full	C vs T
Aware of Levy (in Percent)	0.96	0.96	0.96	0.705
	(0.01)	(0.01)	(0.01)	
Mobile Money Tax (in TZS)	316.77	328.82	322.79	0.566
	(15.03)	(14.63)	(10.48)	
Operator Fee (in TZS)	589.26	569.42	579.35	0.465
	(19.20)	(19.19)	(13.57)	
Total (in TZS)	906.03	898.24	902.14	0.817
	(23.50)	(24.04)	(16.80)	
Observations	398	397	795	795

Notes: This table reports mean values of respondents' estimates for the mobile money tax and the total costs in the Treatment group, the Control group, and the full sample. The operator fee is calculated as the difference between the total fee and the tax. All amounts are expressed in Tanzanian shilling. Standard errors in parenthesis. Last column reports p-value of t test between treatment and control.
$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

To further distinguish inattention from lack of knowledge, we conduct a heterogeneity analysis examining whether the treatment effect varies with characteristics correlated with prior knowledge (Appendix Section A.1). If the treatment operates through the provision of new information, then individuals who are more likely to already know the tax—those with higher education or more frequent mobile money users—should display smaller treatment effects. By

[14] Figure A.4 in the Appendix shows the distribution of perceived levy amounts. While the mean perception is close to the true value, the distribution is relatively dispersed.

contrast, in an inattention framework, even well-informed individuals may underweight the tax when making decisions unless it is made salient.

The results are consistent with an inattention interpretation. As shown in Appendix Table A.4, the interaction terms for high-school education and frequent mobile money use are small in magnitude and statistically insignificant (p = 0.245 and p = 0.248). The treatment effect is not attenuated for groups that are plausibly better informed. This indicates that the salience intervention does not operate by supplying new information, but rather by shifting attention toward a cost component that is typically insufficiently considered at the moment of decision-making. Even though respondents know the mobile money tax, they do not spontaneously factor it into WTP unless it is made cognitively prominent.

Table 7: View of Government

	Trust in Gov. (1)	Trust in TRA (2)
Salience Treatment	-0.153***	-0.130**
	(0.053)	(0.058)
Control Group Mean	3.478***	3.191***
	(0.188)	(0.213)
Controls	✓	✓
Session FE	✓	✓
Observations	753	758
R^2	0.063	0.072

Notes: The table reports OLS regressions where the dependent variable is trust in the government (column (1)) and trust in the Tanzanian Revenue Authority (column (2)), indicated on a scale from 1 (*Not at all*) to 4 (*A lot*). Independent variables include: treatment variable *Salience* (see Table 3 for definition) as well as session fixed effects and the background variables *Female*, *Older*, *High School* and *Frequent MM User* (see Table 2 for definitions). Robust standard errors are reported in parentheses.
$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Tax aversion So far, we have shown that the salience treatment significantly reduces WTP for mobile money. Given that there is no significant difference in awareness about the mobile money tax between the treatment and control group, the effect cannot be explained by lack of knowledge alone. In Tables 3 and 4, the effect of the treatment on WTP is estimated at TZS -875 to -2,494, depending on the assumptions made to calculate the WTP. This is equivalent to the tax and fee for mobile money transfers (TZS 751 - TZS 963) for the amounts in question when

we use the most conservative calculation of WTP, and clearly larger than the tax and fee when using other measures. Thus, for some of the specifications, the magnitude of the salience effect exceeds what would be expected by a simple cost-benefit update based on increased attention to the tax and fee. Instead, the results are consistent with the presence of a behavioral distortion introduced by making the tax more salient, i.e., tax aversion. However, given that the estimated magnitude of the effect of the salience treatment is highly sensitive to the assumptions made in the WTP calculation (see discussion in Section 6.2), we should be very careful in interpreting them as conclusive evidence for tax aversion.

To test for this potential behavioral distortion, we examine how greater tax salience shapes perceptions of the state. Table 7 shows that making the tax salient significantly reduces trust in both the government and the revenue authority. This suggests that the salience treatment not only increases rational attention to the tax but may also trigger a more negative evaluation of the institutions associated with it. Such a shift in attitudes is consistent with mental-accounting interpretations of salience: highlighting the tax prompts individuals to mentally isolate it as a distinct and potentially aversive cost, which may strengthen their desire to avoid it (e.g., by substituting toward cash transactions).

While our findings are inconsistent with a pure information-updating channel, they do not allow us to conclusively separate rational inattention from behavioral tax aversion. Both mechanisms remain observationally consistent with the evidence, and the trust results should therefore be interpreted as corroborative rather than decisive.

Finally, we acknowledge that an important limitation of our design is that salience treatment bundles information about the mobile money tax and operator fees, making both components of transaction costs salient at the same time. As a result, we cannot disentangle whether the observed behavioral responses are driven by *tax* salience per se or by increased salience of transaction costs more generally. Nevertheless, we interpret the fact that the treatment also affects trust in government institutions as suggestive evidence that the tax component is driving the observed response, a hypothesis that should be tested by future research using designs that separately vary the salience of taxes and non-tax fees. A further limitation of our study is that we only observe responses to tax salience in the short run. While increased salience may initially generate strong behavioral reactions, these effects could attenuate over time as individ-

uals gain experience or adjust expectations (Bordalo et al., 2022). However, existing evidence suggests that salience has can affect behavior even in the long run. For example, Finkelstein (2009) documents persistent salience effects in the context of electronic toll collection, despite repeated exposure, and Chetty et al. (2009) find that behavioral responses to tax salience exists even in the long-run. Together, this literature suggests that salience effects may have meaningful longer-run implications, although future research is needed to directly measure persistence in settings such as mobile money taxation.

7 Conclusion

This study provides experimental evidence that the salience of a mobile money tax significantly reduces individuals' willingness to use mobile money in Tanzania. Through a lab-in-the-field experiment with small business owners in Dar es Salaam, we show that simply reminding individuals of an existing tax substantially lowers their willingness to pay for mobile money.

Our conceptual framework highlights two potential channels through which tax salience may affect behavior: by increasing knowledge of the tax or by inducing behavioral responses. In line with this framework, we explicitly examine the mechanisms underlying the observed treatment effect. Our analysis suggests that the effect is unlikely to be driven by a lack of knowledge about the tax. Instead, the evidence is suggestive of rational inattention and behavioral tax aversion (whereby individuals underweight the tax when it is not salient but react more strongly once it is made cognitively prominent), though we cannot conclusively disentangle the two.

The result is a significant reduction in willingness to use a taxed good or service, even though the economic cost is unchanged. By providing causal evidence on the behavioral effects of tax salience in a lower-middle-income country, we extend the literature beyond higher-income countries. This paper furthermore extends the salience literature by expanding the scope from traditional tax instruments to digital financial services, an area of growing importance in sub-Saharan Africa.

These results have important implications for revenue generation. Governments in low- and lower-middle-income countries seeking to broaden their tax bases often rely on transaction taxes that are easy to administer and enforce. While such taxes may generate short-run rev-

enues, their salience can also induce sizable behavioral responses that reduce the tax base. In the context of mobile money, our findings suggest that more salient taxes discourage the use of digital transactions and encourage substitution toward cash. This not only limits revenue from the mobile money tax itself, but may also reduce revenues from other tax bases that depend on formal payments, such as value-added taxes. Consequently, potential short-term revenue gains from highly salient transaction taxes should be weighed against longer-term revenue losses arising from substitution of use of formal financial channels with potentially informal cash payments. These implications should be interpreted cautiously, as they depend on the persistence of salience effects and on institutional contexts similar to those studied here.

Beyond revenue generation, our findings point to broader economic and institutional consequences of tax salience. We provide indicative evidence that behavioral responses to salience may be substantially larger than what tax rates and associated fees alone would predict, suggesting that even relatively small transaction taxes can generate behavioral distortions that are large relative to the underlying tax rate when made salient. Moreover, the decline in trust in government institutions observed in response to the treatment suggests that tax salience may affect attitudes toward the state more generally, with potential implications for compliance and engagement with formal institutions. Together, our findings highlight important trade-offs between revenue generation, transparency, and financial inclusion.

Future work could explore whether and how salience effects persist over time or vary across different types of taxes and digital services. Understanding these dynamics will be central as governments across sub-Saharan Africa and beyond seek to broaden their tax bases in ways that are both efficient and equitable. More broadly, our findings highlight that in an era of rapid digitalization, behavioral responses to taxation will play a crucial role in shaping both financial inclusion and the sustainability of domestic revenue mobilization.

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Appendix

A Additional Results

Table A.1: Descriptive statistics, included and excluded observations

	Mean			P-value of t-test
	Included	Excluded	Full	Control vs. Treatment
Female	0.39	0.49	0.41	0.011**
	(0.02)	(0.04)	(0.02)	
Older	0.45	0.51	0.46	0.157
	(0.02)	(0.04)	(0.02)	
High School	0.28	0.20	0.26	0.037**
	(0.02)	(0.03)	(0.02)	
Observations	618	177	795	795

Mean (standard error) and p-value of t-test. $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Notes: The table reports descriptive statistics of the sample as well as excluded observations.

Table A.2: Overview of the MPL

Choice			Mobile money after tax and operator fee	
Question	Cash	Mobile money	Same operator	Other operator
1	30,100	TZS 34,000	TZS 33,249	TZS 33,037
2	31,600	TZS 34,000	TZS 33,249	TZS 33,037
3	33,100	TZS 34,000	TZS 33,249	TZS 33,037
4	34,000	TZS 34,000	TZS 33,249	TZS 33,037
5	34,000	TZS 33,100	TZS 32,349	TZS 32,137
6	34,000	TZS 31,600	TZS 30,849	TZS 30,637
7	34,000	TZS 30,100	TZS 29,349	TZS 29,137

Notes: The table shows the choices participants faced in the experiment. The amounts shown to participants are displayed in the "Cash" and "Mobile Money, Nominal Amount" columns. "Mobile Money, After Tax and Operator Fee, Same operator" shows the mobile money amount net of the mobile money tax (TZS 351) and operator fee (TZS 400). "Mobile Money, After Tax and Operator Fee, Other operator" shows the mobile money amount net of the mobile money tax (TZS 351) and operator fee for transfers to other operators (TZS 612). Green cells highlight cases in which the mobile money amount is weakly larger than the cash amount.

Table A.3: Regressions with Binary WTP Measure

	LPM	Probit	ME
Salience Treatment	-0.128***	-0.372***	-0.127***
	(0.039)	(0.111)	(0.037)
Female	0.017	0.043	0.015
	(0.041)	(0.117)	(0.040)
Older	-0.027	-0.076	-0.026
	(0.044)	(0.123)	(0.042)
High School	0.088*	0.252**	0.086**
	(0.046)	(0.127)	(0.043)
Frequent MM User	0.094**	0.277**	0.094**
	(0.039)	(0.112)	(0.038)
Control Group Mean	0.289**	-0.598	
	(0.124)	(0.378)	
Session FE	✓	✓	✓
Observations	611	611	611
R^2	0.110		
Pseudo R^2		0.089	

Notes: The table reports regressions of an indicator for WTP which takes the value of one if the individual has a positive WTP for mobile money and zero otherwise. Independent variables: treatment variable *Salience* (see Table 3 for definition) as well as session fixed effects and the background variables *Female*, *Older*, *High School* and *Frequent MM User* (see Table 2 for definitions). *LPM*: Coefficients of Linear Probability Model. *Probit*: Coefficients of Probit Model. *ME*: Average marginal effects. Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.1 Heterogeneity

In addition to the main specifications, we conduct a heterogeneity analysis using interaction terms between the treatment and the background indicator variables for *Female*, *Older*, *High School*, and *Frequent MM User*. These regressions aim to assess whether significant differences exist between sub-groups in the sample. Separate regressions for each background indicator variables are created by using the following specification:

$$WTP_i = \alpha + \delta Salience_i + \theta Salience_i \times Var_i + \beta X_i + \beta M_i + \theta_s + \varepsilon_i \tag{A.1}$$

Where Var_i is an indicator variable for *Female*, *Above Median Age*, or *High School*, respectively. $Salience_i \times Var_i$ is the interaction term between the Salience Treatment and the background indicator variables. The results are reported in Table A.4.

Table A.4: Heterogeneity analysis

	Var			
	Female	Older	High School	Frequent MM User
Salience	-2.220**	-3.118***	-1.965**	-1.570
	(0.024)	(0.002)	(0.030)	(0.137)
Salience X Var	-0.701	1.393	-1.919	-1.735
	(0.656)	(0.365)	(0.245)	(0.248)
Controls & Session FE	✓	✓	✓	✓
Observations	611	611	611	611
R^2	0.134	0.135	0.135	0.135

Notes: The table reports OLS regressions based on Equation (A.1). Column headers show the indicator variable used to define *Var* (see Table 2 for definitions). Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

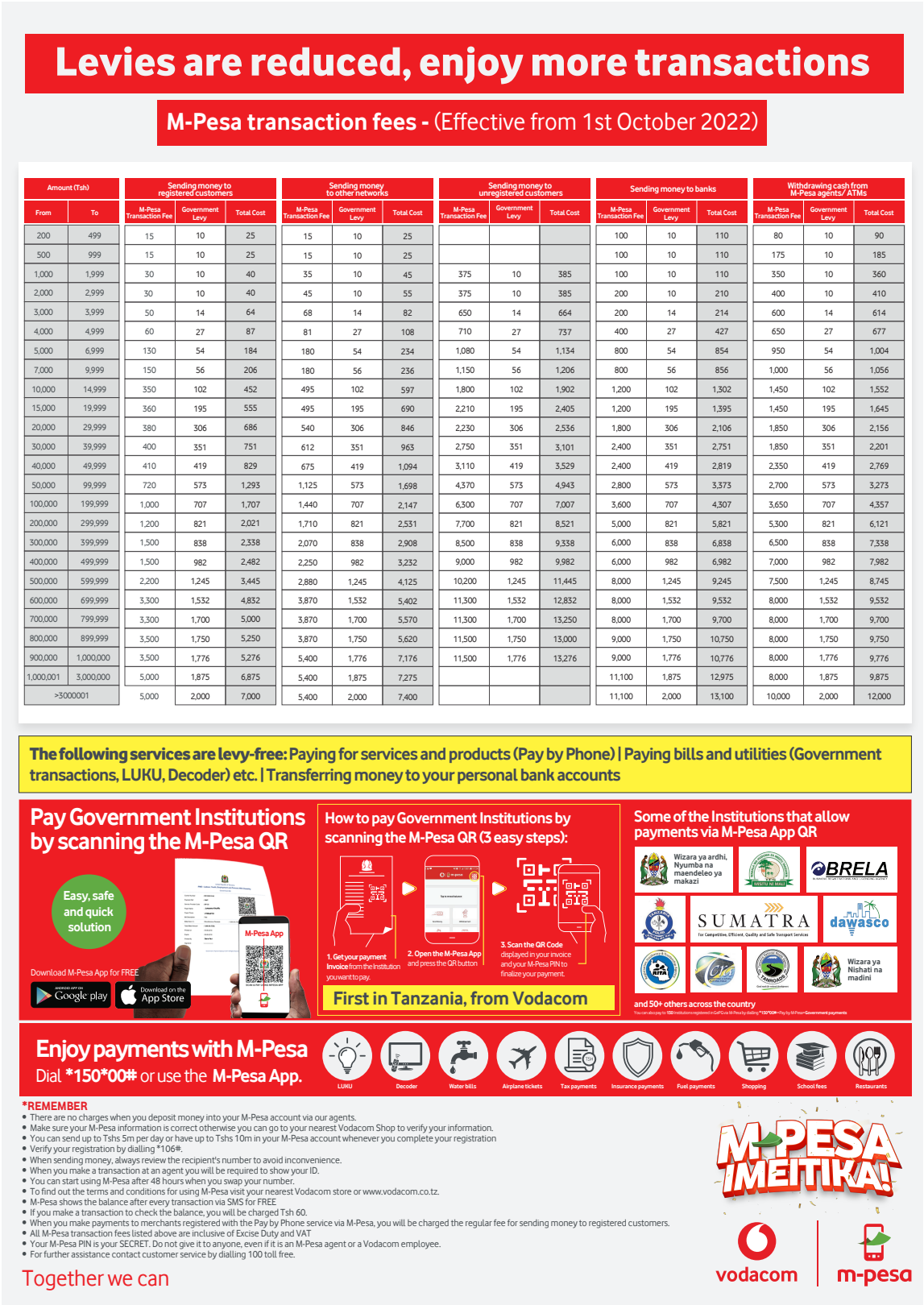
B Additional Figures

Figure A.1: Mobile Money Tax Schedule (from 1st October 2022)

No.	Electronic Money Transactions amount in TZS	Rate in TZS
1.	100 to 2,999	10
2.	3,000 to 3,999	14
3.	4,000 to 4,999	27
4.	5,000 to 6,999	54
5.	7,000 to 9,999	56
6.	10,000 to 14,999	102
7.	15,000 to 19,999	195
8.	20,000 to 29,999	306
9.	30,000 to 39,999	351
10.	40,000 to 49,999	419
11.	50,000 to 99,999	573
12.	100,000 to 199,999	707
13.	200,000 to 299,999	821
14.	300,000 to 399,999	838
15.	400,000 to 499,999	982
16.	500,000 to 599,999	1,245
17.	600,000 to 699,999	1,532
18.	700,000 to 799,999	1,700
19.	800,000 to 899,999	1,750
20.	900,000 to 1,000,000	1,776
21.	1,000,001 to 3,000,000	1,875
22.	3,000,001 and above.	2,000

Source: United Republic of Tanzania (2022b)

Figure A.2: Mobile Money Fee Schedule, Vodacom (from 1st October 2022)



Levies are reduced, enjoy more transactions

M-Pesa transaction fees - (Effective from 1st October 2022)

Amount (Tsh)		Sending money to registered customers			Sending money to other networks			Sending money to unregistered customers			Sending money to banks			Withdrawing cash from M-Pesa agents/ ATMs		
From	To	M-Pesa Transaction Fee	Government Levy	Total Cost	M-Pesa Transaction Fee	Government Levy	Total Cost	M-Pesa Transaction Fee	Government Levy	Total Cost	M-Pesa Transaction Fee	Government Levy	Total Cost	M-Pesa Transaction Fee	Government Levy	Total Cost
200	499	15	10	25	15	10	25				100	10	110	80	10	90
500	999	15	10	25	15	10	25				100	10	110	175	10	185
1,000	1,999	30	10	40	35	10	45	375	10	385	100	10	110	350	10	360
2,000	2,999	30	10	40	45	10	55	375	10	385	200	10	210	400	10	410
3,000	3,999	50	14	64	68	14	82	650	14	664	200	14	214	600	14	614
4,000	4,999	60	27	87	81	27	108	710	27	737	400	27	427	650	27	677
5,000	6,999	130	54	184	180	54	234	1,080	54	1,134	800	54	854	950	54	1,004
7,000	9,999	150	56	206	180	56	236	1,150	56	1,206	800	56	856	1,000	56	1,056
10,000	14,999	350	102	452	495	102	597	1,800	102	1,902	1,200	102	1,302	1,450	102	1,552
15,000	19,999	360	195	555	495	195	690	2,210	195	2,405	1,200	195	1,395	1,450	195	1,645
20,000	29,999	380	306	686	540	306	846	2,230	306	2,536	1,800	306	2,106	1,850	306	2,156
30,000	39,999	400	351	751	612	351	963	2,750	351	3,101	2,400	351	2,751	1,850	351	2,201
40,000	49,999	410	419	829	675	419	1,094	3,110	419	3,529	2,400	419	2,819	2,350	419	2,769
50,000	99,999	720	573	1,293	1,125	573	1,698	4,370	573	4,943	2,800	573	3,373	2,700	573	3,273
100,000	199,999	1,000	707	1,707	1,440	707	2,147	6,300	707	7,007	3,600	707	4,307	3,650	707	4,357
200,000	299,999	1,200	821	2,021	1,710	821	2,531	7,700	821	8,521	5,000	821	5,821	5,300	821	6,121
300,000	399,999	1,500	838	2,338	2,070	838	2,908	8,500	838	9,338	6,000	838	6,838	6,500	838	7,338
400,000	499,999	1,500	982	2,482	2,250	982	3,232	9,000	982	9,982	6,000	982	6,982	7,000	982	7,982
500,000	599,999	2,200	1,245	3,445	2,880	1,245	4,125	10,200	1,245	11,445	8,000	1,245	9,245	7,500	1,245	8,745
600,000	699,999	3,300	1,532	4,832	3,870	1,532	5,402	11,300	1,532	12,832	8,000	1,532	9,532	8,000	1,532	9,532
700,000	799,999	3,300	1,700	5,000	3,870	1,700	5,570	11,300	1,700	13,250	8,000	1,700	9,700	8,000	1,700	9,700
800,000	899,999	3,500	1,750	5,250	3,870	1,750	5,620	11,500	1,750	13,000	9,000	1,750	10,750	8,000	1,750	9,750
900,000	1,000,000	3,500	1,776	5,276	5,400	1,776	7,176	11,500	1,776	13,276	9,000	1,776	10,776	8,000	1,776	9,776
1,000,001	3,000,000	5,000	1,875	6,875	5,400	1,875	7,275				11,100	1,875	12,975	8,000	1,875	9,875
>3000001		5,000	2,000	7,000	5,400	2,000	7,400				11,100	2,000	13,100	10,000	2,000	12,000

The following services are levy-free: Paying for services and products (Pay by Phone) | Paying bills and utilities (Government transactions, LUKU, Decoder) etc. | Transferring money to your personal bank accounts

Pay Government Institutions by scanning the M-Pesa QR

Easy, safe and quick solution

Download M-Pesa App for FREE

Google play | Download on the App Store

How to pay Government Institutions by scanning the M-Pesa QR (3 easy steps):

1. Get your payment Invoice from the Institution you want to pay.
2. Open the M-Pesa App and press the QR button
3. Scan the QR Code displayed in your invoice and your M-Pesa PIN to finalize your payment.

First in Tanzania, from Vodacom

Some of the Institutions that allow payments via M-Pesa App QR

Wizara ya ardhi, Nyumba na maendeleo ya makazi | BRELA | SUMATRA | dawasco | Wizara ya Nishati na madini

and 50+ others across the country

Enjoy payments with M-Pesa

Dial *150*00# or use the M-Pesa App.

LUKU | Decoder | Water bills | Airplane tickets | Tax payments | Insurance payments | Fuel payments | Shopping | School fees | Restaurants

***REMEMBER**

- There are no charges when you deposit money into your M-Pesa account via our agents.
- Make sure your M-Pesa information is correct otherwise you can go to your nearest Vodacom Shop to verify your information.
- You can send up to Tshs 5m per day or have up to Tshs 10m in your M-Pesa account whenever you complete your registration
- Verify your registration by dialling *106#.
- When sending money, always review the recipient's number to avoid inconvenience.
- When you make a transaction at an agent you will be required to show your ID.
- You can start using M-Pesa after 48 hours when you swap your number.
- To find out the terms and conditions for using M-Pesa visit your nearest Vodacom store or www.vodacom.co.tz.
- M-Pesa shows the balance after every transaction via SMS for FREE
- If you make a transaction to check the balance, you will be charged Tsh 60.
- When you make payments to merchants registered with the Pay by Phone service via M-Pesa, you will be charged the regular fee for sending money to registered customers.
- All M-Pesa transaction fees listed above are inclusive of Excise Duty and VAT
- Your M-Pesa PIN is your SECRET. Do not give it to anyone, even if it is an M-Pesa agent or a Vodacom employee.
- For further assistance contact customer service by dialling 100 toll free.

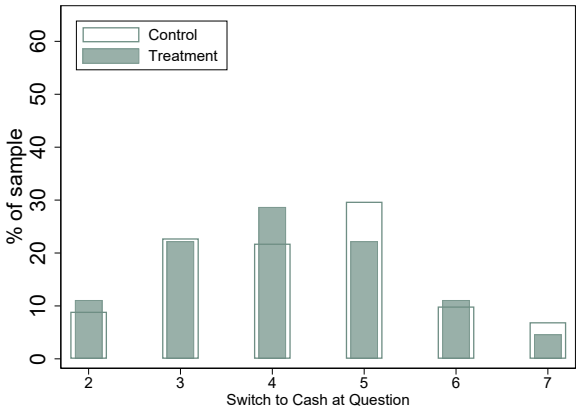
Together we can

M-PESA IMEITIKA!

vodacom | m-pesa

Source: vodacom.com.tz

Figure A.3: Switching



Note: Sample includes respondents who switch in a transitive way, i.e., have a WTP between -3.9 and 3.9.

Figure A.4: Estimates of Mobile Money Tax

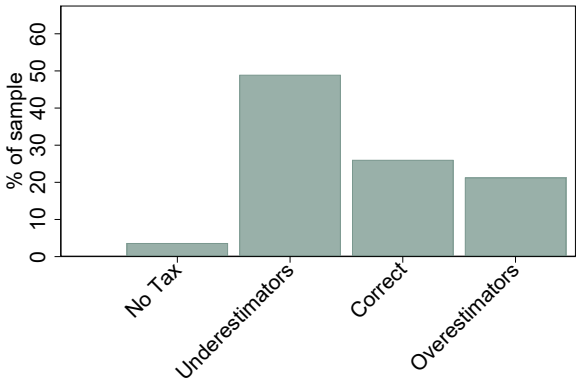


Figure displays distribution of respondents' estimates of the mobile money tax when sending an amount of TZS 40,000. Respondents who answer 0 are classified as *No Tax*. Respondents who answer TZS 1 to 269 are classified as *underestimators*. Respondents who answer 269 to 569 (i.e., within a range of ± 150 around the true value of TZS 419) are classified as *correct*. Respondents who answer anything above 569 are classified as *overestimators*.

C Calculation of Willingness to Pay

As described above, participants can be categorized into one of eight WTP intervals. For the interior intervals (intervals 2 to 7), we assign each respondent a WTP equal to the midpoint of the two interval endpoints. For the outer intervals, however, the calculation is less straightforward since the endpoints are unbounded. Following Allcott and Kessler (2019), we assume that the distribution of WTP in these intervals is triangular, with the mode (highest density) located at the interval endpoint closest to zero, and density declining linearly toward zero at the unobserved bound. This implies that the density is maximal at TZS $\pm 3,900$, and decreases to zero at some finite value further away from the origin. Under this assumption, the outer intervals have well-defined means that can be calculated analytically.

To illustrate, consider the left outer interval $(-\infty, -3.9]$. Let the maximum density (the "height" of the triangle) equal the observed density of the adjacent interval, and let the base extend from the mode at -3.9 to the unknown lower bound x. The area of the triangle must equal the observed share of participants located in this outer interval, which allows us to solve for x using the standard formula for the area of a triangle:

$$\text{Area of triangle} = \frac{\text{base} \times \text{height}}{2}. \tag{A.2}$$

For example, the observed density in the second interval (which determines the height of the first triangle) is 3.4%, while the share of respondents in the first interval is 43.4% (see Table A.5). Substituting into equation (A.2) gives

$$43.4\% = \frac{((-3.9) - x) \times 3.4\%}{2}, \tag{A.3}$$

which implies that the lower bound of the interval is $x = -29.7$.

Given the bounds and the assumed triangular distribution, the mean WTP for each outer interval can be obtained using the formula for the mean of a triangular distribution:

$$\text{Mean}_{WTP} = \frac{a+b+c}{3}, \tag{A.4}$$

where a is the lower bound, b the upper bound, and c the mode. For interval 1, we use $a = -29.7$, $b = -3.9$, and $c = -3.9$. This yields an average WTP of -12.5 for the first interval. An analogous calculation for the right outer interval $[3.9, \infty)$, using the observed density from interval 7, gives an upper bound of 27.4 and a mean WTP of 11.75.

Finally, as part of our robustness analysis, we construct two alternative WTP measures by scaling the calculated means of the outer intervals to one-third and one-half, respectively. This ensures that our findings are not driven by the particular parametric assumptions imposed on the tails of the WTP distribution.

Table A.5: Distribution of Intervals

	Observations	Percent	Main WTP	WTP 2	WTP 3
Interval 1 $(-\infty, -3.9,]$	271	43.9	-12.5	-6.25	-4.16
Interval 2 $[-3.9, -2.4]$	21	3.4	-3.15	-3.15	-3.15
Interval 3 $[-2.4, -0.9]$	47	7.6	-1.65	-1.65	-1.65
Interval 4 $[-0.9, 0]$	53	8.6	-0.45	-0.45	-0.45
Interval 5 $[0, 0.9]$	54	8.7	0.45	0.45	0.45
Interval 6 $[0.9, 2.4]$	22	3.6	1.65	1.65	1.65
Interval 7 $[2.4, 3.9]$	12	1.9	3.15	3.15	3.15
Interval 8 $[3.9, \infty)$	138	22.3	11.73	5.96	3.91
Total	618	100.0			

Notes: The table reports the share of respondents in each WTP interval, implied densities used for the triangular approximation, the main WTP measure (WTP1) as well as the two alternative measures (WTP2 and WTP3), all expressed in TZS 1,000 units.

D Recruitment

Table A.6: Market list

Date	Sessions	Market	Recruited
13.02.2023	1,2	Mtambani	50
13.02.2023	3,4	Mkunguni	50
14.02.2023	5,6	Tegeta	50
14.02.2023	7,8	Bunju	50
15.02.2023	9,10	Africa Sana	50
15.02.2023	11,12	Mwenge	50
16.02.2023	13,14	Mwananyamala	50
16.02.2023	15,16	Kisiwani	50
17.02.2023	17,18	Tandale	50
17.02.2023	19,20	Makumbusho	50
20.02.2023	21,22	Manzese	50
20.02.2023	23,24	Mabibo	50
21.02.2023	25,26	Urafiki	50
21.02.2023	27,28	Shekilango	50
22.02.2023	29,30	Magomeni	50
22.02.2023	31,32	Babati	50

Notes: Participants from each market were divided into two equal groups, ensuring that both groups do not interact with each other until all participants completed the experiment. Out of 800 participants that showed up to the experiment, the answers of five participants had to be excluded from the analysis.

In sub-Saharan Africa, the adoption of mobile money has grown substantially during the past decade, becoming an important driver of financial inclusion in the region. At the same time, many governments have introduced taxes on mobile money transfers, which may discourage use and encourage a return to cash-based transactions. In several countries, these taxes have been highly salient to taxpayers following public debate and subsequent rate reductions. This paper examines the effect of tax salience on the use of mobile money.

Drawing on a lab experiment with small business owners in Dar es Salaam, Tanzania, we randomly vary whether participants are reminded of an existing mobile money tax when making incentivized choices between receiving payments in cash or via mobile money. We find that increasing the salience of the tax significantly reduces the share of participants choosing mobile money. Evidence from a post-experiment questionnaire indicates that participants were well informed about the tax, suggesting that the effect does not operate through lack of knowledge.

Contact us

Phone: +47 93 80 00 (from Norway)
Phone: +47 55 70 55 65 (from abroad)
cmi@cmi.no
www.cmi.no
P.O. Box 6033,
N-5892 Bergen, Norway
Jekteviksbakken 31, Bergen

CMI CHR. MICHELSEN INSTITUTE

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