Analysis plan: Citizens Preferences for Direct vs Indirect Taxation: Vertical vs Horizontal Equity, in person Survey

World Bank Group

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Overview This document present the pre-analysis plan, for the follow-up project to "Citizens Preferences for Direct vs Indirect Taxation: Vertical vs Horizontal Equity", whose pre-analysis plan was posted in the AEA Registry on August 2022.

Antecedant: online survey experiment The first pre-registered study conducted online survey experiment in five countries (Colombia, India, Indonesia, Nigeria and the Philippines). The online survey results showed that employed respondents who are treated (receiving information on the tax payment imbalance between salaried and self-employed workers) have lower perceptions of tax fairness. This is particularly the case among higher education groups, as hypothesized in the pre-analysis plan. Yet, beyond this result we find no evidence for the other hypothesis: treated respondents do not view this tax gap as more concerning or unjustifiable. In turn, the treatment does not lead to change in respondents tax policy preferences.

This document: in person survey This new pre-analysis plan is for a follow-up study, consisting of an in person survey experiment in Pakistan. Inherently, online surveys face limitations: they constrain the duration and complexity of questions which can be asked, limit the information and explanations that can be shared in the treatment, and obtain limited response rates/select respondents along unobservable characteristics. Informed by the design and results of the online survey, the research team designed an in person survey experiment which allows for (i) clearer communication of information to the respondents during the treatment, (ii) additional questions asked, (iii) an attempt to test mechanisms, and which (iv) should lead to much higher response rates.

Choices of Sample While Pakistan was not part of the five country sample for the online survey, the research team had experience conducting surveys in the country. Further, given the initial (pre-registered) results that the treatment was particularly large among the educated population (which tends to be higher-income and income tax paying), the in-person survey aims to survey households with income in the middle-class and above. This will be done by surveying principally affluent neighborhoods of Lahore, and providing incentives in the form of time credit/minutes for mobile phones. The rest of the document details the sample, protocol followed, and hypotheses of the research team.

Blind analysis This survey instrument is much more complex than the previous one and contains multiple potential interesting dimensions of heterogeneity, which could explain the results. Our hypothesis are the same as before (previously registered PAP), but in addition to the survey being conducted in person and with clearer explanations, it also collects many more priors, which could be interesting mechanisms: for example a lack of support for tax policy changes could be because of perceiving that the efficiency costs of tax reform would be large (and not because horizontal equity isn't important). As suggested, by Olken (Journal of Economic Perspectives 2015) we thus commit to a blinded study: post survey, we will not be unblinding the data of which respondent belongs to the treatment vs control group, but we will see which characteristics and priors have meaningful variation, and prepare an informed heterogeneity analysis, ex-ante. This will be detailed in its own separate document, to be appended to this initial PAP.

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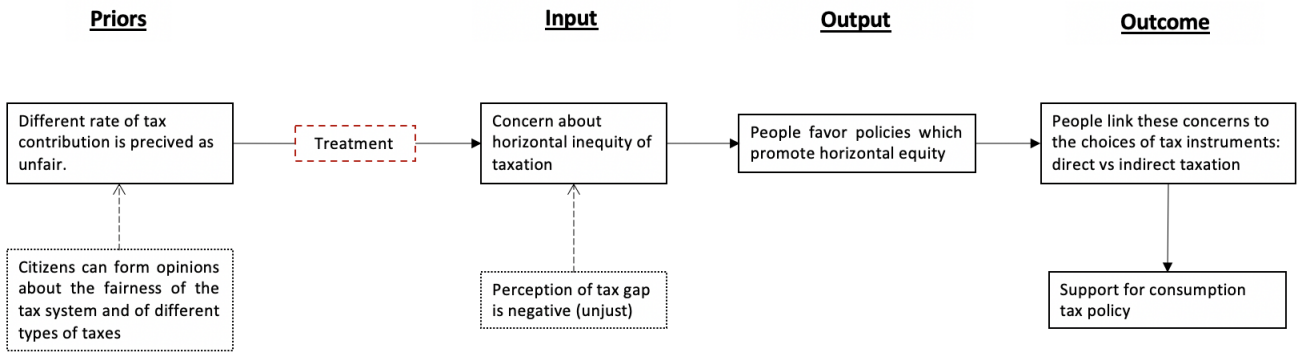
1 Objective of study

In developing countries, a large share of the workforce works in self-employment, a hard to tax segment, compared to salaried employees. Self-employment is prevalent both among poorer households, and among richer households such as liberal professions and business owners (Jensen, American Economic Review 2022). We study citizens' views on fairness of the tax system, focusing on their perception of horizontal inequity of taxation between salaried and self-employed individuals, in Pakistan. We conjecture that the prevalence of self-employment strengthens horizontal equity concerns, which in turn lowers demand for taxation, especially direct income taxation. To test this hypothesis, we conduct an in person survey eliciting perception on horizontal equity, tax fairness, relation to vertical equity, and how these preferences relate to the tax instruments used by the government. To test whether increased awareness of horizontal inequity affects tax preferences, we conduct within-survey information treatments aimed at increasing the respondents knowledge and salience of the issue.

2 Theory of Change

Citizens can form opinions about the fairness of the tax system and of different types of taxes. Two key dimensions of fairness are concerns about the share of taxes paid by rich vs poor (vertical equity) and the share of taxes paid by the self-employed vs salaried employees, at the same income level (horizontal equity). Information on the actual gap in tax contributions of the self-employed vs. employees could convince citizens that the difference in taxes paid is unjustified, which might raise horizontal equity concerns and could change respondent's perception of the tax system's fairness. Moreover, due to the pedagogical treatment which explains the equity impact of different types of taxes (income vs. consumption taxes), citizens might favour policies that curb horizontal equity, even if they worsen vertical equity, and in particular prefer consumption taxes. We note that for this theory of change to take hold, respondents must perceive that the low tax payments of self-employed are in part due to structural factors (inherent technological difficulties of taxing this group given limited third-party information), and do not result (only) from an active policy decision of the government not to enforce taxes on this group.



3 Survey and survey experiment

3.1 Overview:

- We conduct a survey, which includes a survey experiment, to measure how information about current taxes paid and types of taxes changes citizens views on the fairness of the tax system and preferences regarding tax objectives.
- The randomized experiment assigns households to either treatment or control. Treatment households see two messages: first, information about income taxes paid by self-employed vs. employees, and later, information about the similar consumption taxes paid by self-employed vs. employees.
- The treatment is stratified across 18 groups by age, education, and whether the respondent is the head of the household/primary income earner (specified below).
- The intervention takes place in Lahore, Pakistan. Pakistan was chosen because (i) it satisfies similar requirements as the five countries which formed part of the previous online surveys, namely large developing countries with substantial non compliance and self-employment, including at the top of the distribution; (ii) the research team had previously conducted in person surveys in Lahore and could rely on this infrastructure, in particular to try to obtain good coverage among upper-middle class respondents (likely to be income taxpayers).
- The standard errors are heteroskedasticity-robust. Because treatment assignment is at the individual level, we do not cluster the standard errors.

3.2 Sample Selection and Randomization Protocol

Step 1: Starting locations (neighborhood choices) The research team provides the survey team with a set of polygons distributed across the city. These polygons were selected from an ongoing study (Khan et al. 2022). The research team allocated the polygons to bins depending on *proportion of residential properties*. The research team then selected polygons with above-median *log of average property tax payment in FY2015-2016* in each bin. This selection procedure was used to maximize coverage in upper-middle class areas. Note that the survey team also included some additional polygons where they had already started survey activities.

In each polygon, the survey team drew approximately 5 random points using QGIS. Some of these points were adjusted manually depending on the feasibility of accessing the locality around the point.

Step 2: Approach Protocol for Properties

- Enumerators start the activity at a designated point and target properties are identified using the left-hand rule, described below:
    1. Enumerator proceeds to first point in polygon (points are approached based on ease of access) and begins by approaching the first property to the left of the starting point.
    2. Once a property is listed, or if it is not possible to complete the listing due to a locked door, no answer, or refusal to participate, enumerators skip the next property and approach the third property.

3. Enumerators continue this pattern, ensuring they maximize property coverage around each starting point.
4. As enumerators progress, they turn left at intersections and continue surveying properties using the left-hand rule.
5. In the event they encounter a dead end (normally a street which has a dead end) before reaching their target (at a particular point), they turn back and continue following the left-hand rule until they meet the required number of properties.
6. Enumerators aim to reach 14-17 properties around each point. Once this target is achieved, they move on to the next GPS point and repeat the process.
7. Enumerators are instructed to cover all five points within a polygon, typically taking approximately two days to survey each polygon.
8. These instructions, along with polygon details and point coordinates, are the only information provided to the enumerators to ensure clarity and consistency in the data collection process.

Step 3: Approach Protocol for Engaging Respondents for Property Listing

- Once the respondent answers the door, the enumerator explains the purpose of the survey and seeks the respondent's consent for participation in the listing survey.
- If the respondent is self-employed or employed (and preferably the primary income earner) of the household, they note the details of the respondent and obtain consent for the main survey from them.
- If not employed or self-employed, enumerators ask first for the details of their head of household/primary income earner (preferred) or someone else in the household who is employed or self-employed, and obtain consent on behalf of that family member(s) to participate in the main survey.
- Finally, they ask for the preferred timings for visit for the main survey (morning, afternoon, evening).
- For property identification purposes, they note down the house number, street number, nearest landmark, and also the full address.

Step 4: Stratified Randomization of Control and Treatment Once a sufficient number of suitable properties had been listed using the procedure described above, the research team randomized properties into a control or treatment group. The group of properties randomized into control or treatment at the same time is considered part of a batch. Randomization was stratified by age, education, and whether the respondent was the head of household/primary income earner.

Step 5: Survey execution Each property, now randomly assigned to a treatment or control group, is re-visited for the survey. The enumerator asks to speak to the respondent who is the household/primary income earner identified during the listing process. If that respondent is not available, the enumerator asks to speak to another respondent who is employed or self-employed.

3.3 Treatments and Control Groups:

Treatments and Control Group:

The survey experiment randomly divides the sample into a control and treatment group. Respondents in the treatment group receive information at two points of the survey (See survey instrument).

- **1st treatment message**: "Information on differences in share of income taxes paid by self-employed versus employees"
- **2nd treatment message**: "Information on similar share of consumption taxes paid by self-employed and employees"
- **Control**: Click message

Stratification:

- **Age categories**: Young (18-35 years), Middle-aged (35-50 years), Old (50+ years)
- **Education categories**: Up to secondary education (primary, secondary or don't knows); Post-secondary education excluding university (vocational); Post-secondary university education (bachelor's, master's, or above)
- **Head of household/primary income earner**: Head of household or primary income earner; Not head of household and not primary income earner

Control variables: We plan to run two sets of regressions, the first with strata and the randomization batch as controls and the second with strata, randomization batch, and background characteristics such as income, occupation, gender, etc. as controls. This set of controls will be finalized in the document appended to this initial PAP.

3.4 Survey Variables

Demographics

- **Age**
- **Gender** (Answers: Male/Female)
- **Education** What is the highest level of education you completed? (Answers: Primary or less/ Secondary/ Post-secondary vocational training/ Bachelor's degree/ Master's degree or higher)
- **Employment status** What is your current employment status?*(Answers: Salaried employee / Self-employed (own account, small business owner, family worker, casual daily labourer) / Not working)*
- **Occupation** *(Answers: list of jobs)*
- **Income group**: Imagine the total population of the [Country] is divided into 5 income groups from poorest to richest, each with the same number of people. In which of these income groups do you place your household? *(Answers: Poorest group / 2nd poorest group / Middle group / 2nd richest group / Richest group)*
- **Household size**
- **Total Income in typical month in 2023** *(Answers: bins of income adjusted by household size)*

Knowledge and understanding

- **Knowledge of differences: self-employed vs employees** An individual is an employee if they work for someone else, whereas an individual is self-employed if they do not work for someone else. Do you understand the difference between being self-employed vs an employee?
- **Knowledge of differences: income tax vs sales tax**

Prior Beliefs

- **Extent of Self-employment** Asked for three different income groups (Richest 10%, middle 10%, poorest 10%). Consider the [income group] workers in Pakistan. What share of them would you say are self-employed compared to employees?
- **Income differences: self-employed vs employees**: compare question: How much do you think a [worker type] doctor earns in a typical month (in PKR)?
- **Own work preference: self-employed vs employee** Suppose you could earn the same income as either an employee or while self-employed. Which would you choose ?
  - **Reason for own preference**
- **Others work preference: self-employed vs employee** What do you think most people in Pakistan would choose if they could do the identical kind of work and receive the same amount of income as either an employee or self-employed?
- **Income tax differences: self-employed vs employee** Think of two people with the same income, one is self-employed and one is a salaried employee. How do you think the PIT taxes paid by these individuals differ?
  - **Income tax differences specific: self-employed vs employee** same example, specific in the case of lawyers
- **Effective tax rate: self-employed vs employee** Compare answers to: Consider a [worker type] individual who earns PKR 130,000 in true income and therefore owes PKR 5,000 in personal income taxes. How much of this do you think the [worker type] individual will actually pay?
- **Government waste** Of every 1000 rupee that the government collects in taxes, how many would you say are wasted?
- **Government capacity to limit income tax evasion** How much do you think that the government can do to stop [worker type] from evading personal income tax?
- **Reasons for being rich** Which has more to do with why a [worker type] is rich?
- **Vertical equity of income taxation** How much of an impact do you think a progressive personal income tax system (in which people with higher incomes pay a higher share of income in taxes than people with lower incomes) has on reducing inequality?
- **Behavioral impacts of income taxation** If the personal income tax rate were to increase for the richest people in the economy, would it encourage them towards the following behaviors? *Likeart scale for following ANSWERS: Evade Taxes, Work Less, Work More, Be Less entrepreunarial and create fewer businesses*

- **Horizontal equity of taxation** Do you agree or disagree with the following statement: People should refuse to pay taxes until their fellow citizens with the same income pay the same amount in taxes

Primary Outcomes after treatment 1 (information on income tax gap SE vs employees)
GROUP 1 of outcomes: concern, fairness, justification

- **Gap concern**: Do you agree or disagree with the following statement: In Pakistan, differences in taxes paid between self-employed individuals and employees is a serious problem that needs to be addressed. *(Answers: Likert scale)*
- **Gap Unfair** Consider a self-employed individual earning the same income as an employee. Differences in taxes paid between these people are: *(Answers: Fair/ Unfair / Neither fair nor unfair)*
  - **Gap Unfair specific**: examples with self-employed vs salaried lawyers
- **Gap Unjustified**: Do you agree or disagree with the following statement: It is NOT justified for self-employed individuals and employees to pay different amounts of tax, even if they have the SAME INCOME *(Answers: Likert scale)*
- **Gap index**: constructed index that measures the impact of the treatments on people's perceptions across the first three outcomes (Gap concern, gap unfair, gap unjustified). Note that we aslo have the more specific question for gap unfair (based on an example), to verify the understanding of this particular question and its coherence.

GROUP 2 of outcomes tax perception and tax policy views:

- **Importance of paying taxes** Do you agree or disagree with the following statement: It is important for people to pay taxes?
- **Justifiable to not pay taxes**: Which best describes your thoughts on the following action: People not paying the taxes they owe to the government: *ANSWERS: This is wrong and punishable; This is wrong but understandable; This is not wrong at all*
- **Increasing taxes on self-employed**: Do you agree or disagree with the statement: Reforms which increase the amount of tax self employed individuals with high incomes have to pay is a good way to reduce income inequality
- **Tax perception index**: constructed index that measures the impact of the treatments on people's tax perceptions. Combine the previous three questions on importance of paying taxes, justifiable to not pay taxes, and increasing taxes on self-employed into an index
- **Horizontal vs Vertical equity**: To achieve a fair tax system, which is more important? : *ANSWERS: People with the SAME income paying the same amount in taxes; RICHER people paying a HIGHER share of income in taxes; They are equally important*

Primary outcomes after treatment 2 (information on consumption tax equality between self-employed and employees)

- **Support for income vs sales tax** Suppose the government is raising PKR100,000, from a combination of PIT and sales tax. Which combination would you choose?

- **Support raising sales tax rather than income tax** Do you agree or disagree with the following statement: Instead of raising income taxes on the rich, the sales tax should be increased so that employees and self employed individuals contribute more evenly
- **Relative importance horizontal vs vertical equity, absolute scenarios**
  - **Relative importance horizontal vs vertical equity, relative scenarios** Note: this question is harder because it is about relative changes, such that the tax system is never fully horizontally equitable.
- **Index Policy Support for Horizontal Equity** constructed index that measures the impact of the treatments on people's support for horizontally equitable tax policies. Combines the previous three questions on support for income vs sales tax, Relative importance horizontal vs vertical equity, Index Policy Support for Horizontal Equity.

Further beliefs, to test mechanisms:

- **Sales tax effect on economic activity** What effect do you think increasing the sales tax rate would have on economic activity?
- **Increasing income tax of self-employed effect on economic activity** What effect do you think increasing the effective amount of taxes paid by self employed individuals (with high incomes) would have on economic activity?
- **Political party support** Which party did you vote for in recent election?

4 Pre-Analysis

The structure of the survey lends itself directly to a general pre-analysis plan. This is not as detailed as done in the online surveys for two reasons. First, this is a much longer and complex survey. Second, the authors guarantee that they perform a blinded study that is to analyze the data without observing the treatment and control assignments.

The general hypothesis follow those of the previous study. The difference now lies in:

- There is a single treatment arm (with two information messages)
- The possibility to test for mechanisms explaining the potential lack of change to their tax perceptions, support for horizontal vs vertical equity, and tax policy preferences. This includes:
  - A low consideration for the state (wasteful)
  - The consideration that the government should be doing more to lower tax evasion of the self-employed rather than taxing more
  - Perception of how deserving are each of SE and employees
  - Perceptions on the (relative) distortionary costs of taxation
  - Perception that incomes taxes are not useful for vertical equity

Since we do not know which of these prior dimension would have variation, we commit to perform a blind (to the treatment assignment) ex-ante analysis, with the real survey data.