Dear EGAP Paris Readers,

We are in the planning stages of a Metaketa experiment on the formalization of the relationship between previously informal sectors and governments. We submit here three documents: (1) A description of the research project with some motivation and design information, (2) A very drafty power analysis and pre-analysis document and (3) drafts of survey questions that we plan to ask during our household surveys.

We look forward to your comments!

Best

Jake, Matt, Lula and Chris

Zomba Collective Action Design

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1 Introduction

We evaluate strategies for facilitating the formalization of relationships between residents of partially-formalized settlements and their municipal government in Zomba, Malawi.[1] Specifically, we assess two methods to encourage residents to organize collectively to pay city fees for waste collection: mobile payments and public information provision. We expect that lowering the barriers to payment via a mobile payment system and increasing information about individual household participation local waste collection funds will (1) enable the city to provide this service to these areas where waste collection (and other formal city services) have been absent, (2) change the way people interact with their local government in other domains, (3) change people's perceptions of and orientation toward their local government, and (4) maybe even make it easier for neighbors to organize for future instances of collective action in their communities.

Although our study sites are located in an urban area, until now, residents of these sites have not paid city fees and have not received public services from the city, even though Zomba City Council reports that the middle-income residents of those areas of the city prefer receiving waste collection to the status quo. This suggests that is a gap between intentions and action, where both citizens and the government want to formalize their relationship with one another but are finding it difficult to do so. Our interventions focus on helping citizens and government bridge this gap.

Shirking on payment of fees for public goods is endemic in Zomba, as in many parts of the developing world. Lack of payment by those at the bottom on the income distribution makes sense and may be difficult to change. Shirking by the middle-income earners severely hampers the capacity of governments to provide services, and the lack of service provision (or substandard service provision) may drive middle-income citizens toward privatized solutions, further weakening state capacity to serve the poor.

2 Context and Theory of Change

Zomba, the third largest city in Malawi and the capital until 1974, was projected to have a population of approximately 150,000 (2008 census). It is divided into roughly 10 electoral and administrative wards of more or less equal size in addition to a few wholly unregulated settlements. The Malawi Ministry of Local Government requires that Zomba City Council offer waste collection services to its wards, among other government services such as road maintenance and street lighting. The Council pays for these services by

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[1]We define "partially-formalized" settlements in this context as planned settlements that do not receive any government services, whether due to lack of governmental or civic capacity or resources.

collecting "city rates" from households; this and other fees and charges for city services comprise the main form of municipal revenue generation. Many households, however, do not pay these city rates despite their desire for municipal services. That fact, along with a lack of capacity within the city, such as a shortage of vehicles, results in whole wards that do not receive city services, which in turn has effects on public health and the quality of life in those places, and we conjecture, public support for the extension of city services and administration.

Currently, four wards in Zomba do not receive services such as waste collection because households in these wards do not pay city rates. According to our informal conversations with members of the Zomba City Council, under the current fee-collection system, there appear to be three main barriers to citizens and the government cooperating on fee payment and service provision. First, citizens do not know that city services are paid for by fees. Second, fee payment takes effort: citizens must go to the civic center to pay their fees with cash or checks. Third, citizens are not certain that their individual fee payment will result in the receipt of government services because service provision for a neighborhood requires that a critical mass of people in that neighborhood make payment: this is especially true for waste collection, where, as we understand it, no single middle-income family can pay for a crew and a truck to make a single trip directly to their house.[2]

The existing literatures on (1) tax compliance, (2) technological innovations for reducing transaction costs, and (3) discrete public goods games provide theoretical and empirical suggestions for interventions that will address these three barriers.

First, building on the idea of the virtuous circle in which governments are more legitimate and solicit more tax compliance when they provide services to citizens (Levi 1998; Levi and Sacks 2009; Rotberg 2004), evidence from survey and laboratory experiments about tax compliance supports the idea that making information about public service provision more available is a simple way to encourage tax compliance. Alm, McClelland, and Schulze (1992) find experimental evidence that individuals pay taxes because they value certain public goods. Recent surveys in Tanzania, Kenya, Uganda and South Africa show positive correlations between knowledge about how taxes are used and tax compliance (Ali, Fjeldstad, and Sjursen 2014). This evidence suggests that informing people about the opportunity to receive a valued public good through fee payment will encourage payment of those fees. Our field experiment builds on this past evidence found in survey research and the evidence found in laboratory experiments.

Second, because payment is takes effort, reducing barriers to payment is another way to encourage tax compliance. In other economic sectors, there is evidence that making payment and product delivery methods more convenient increases consumers' willingness to pay fees for products instead of obtaining them illegally. Some research suggests that services like iTunes, Netflix, and Steam have encouraged legal purchasing of music, television programs, film, and video games and decreased fraud and piracy (Danaher et al. 2010). Reductions in piracy for television shows and movies are also linked to Netflix (Holm 2014; Welter 2012), and reduction in video game piracy has been linked to the video game downloading tool Steam (Holm 2014). The overall story of these studies is that people will pay for products and services when the transaction costs of payment are low, even in cases where they may be able to free-ride and obtain products and services without paying.

Third, continued service provision in our particular case, like in many contexts, is structured around having a critical mass of paying service consumers within a given area. Not knowing whether other neighbors in a neighborhood have paid city fees may deter a resident from paying fees. This scenario is best represented as a discrete public goods game (Olson 1965): individuals within a neighborhood must contribute up to some

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[2]Note to EGAP readers: Our knowledge of the situation on the ground in Zomba arises from connections and a trip made a few years ago by one of our team as a part of the Sister Cities initiative. Since then, we have had calls and email communication with members of the city council. We have not yet communicated directly with representatives of the individual citizens we aim to help.

threshold, otherwise no one receives the good. Experimental research simulating these games has found that offering sequential contributions may yield better results than simultaneous contributions (Normann and Rau 2015) and that the higher the value of the good the more players will contribute (Croson and Marks 2000). Furthermore, a player's incentive to contribute is partially determined by whether her contribution is pivotal to achieving the threshold. McBride (2010) suggests that when the public good is highly valued, contributions should increase as uncertainty about the threshold increases and vice versa. When the public good is highly valued and the threshold is uncertain, each player should be more likely to view her contribution as pivotal, and thus the overall contribution rate will increase. However, McBride (2010) only finds moderate experimental evidence for such a connection.

These theories suggest multiple interventions for increasing payment of city rates in Zomba in order to obtain service provision. We expect that increasing information about how taxes are used will increase tax compliance. We expect that reducing barriers to payment will increase tax payment. And we wonder whether information about how much neighbors are contributing to paying city rates should decrease tax payment in a neighborhood or whether it will aid coordination and/or social pressure to pay in the interest of gaining a collective good.

3 Experimental Design

3.1 Overview

The interventions in our study seek to alleviate all three barriers. For wards participating in the experiment, we will provide the majority with information about the ability to pay city rates and obtain waste collection, leaving aside a small, randomly-assigned set as a control group that does not receive this information.[3] Among the neighborhoods informed about the opportunity to receive waste collection services, we randomly assign the ability use mobile phones to pay city fees. In the short term, any household in the study area that pays city rates will receive waste collection; however the percentage of households that pay city rates within one neighborhood must reach or exceed a threshold in order for the service to continue beyond the scope of the study. Otherwise, the service will end after a pilot period. For some of the neighborhoods receiving the mobile payment treatment and for some of the neighborhoods in the information-only condition, we also will randomly assign the provision of transparent information about the extent of participation by other members of the neighborhood.

Our design centers around a formalization process that strengthens the relationship between unserviced wards and Zomba City Council through city-administered solid waste collection services. We focus on waste collection services because it is the service most often demanded by citizens according to our contacts in Zomba and our previous fieldwork there. This process towards formalization has the potential to result both in specific service delivery and in a greater general sense of a meaningful fiscal contract with the state and perhaps also a meaningful social contract with neighbors.

Formalization process: 1. The opportunity to benefit from waste collection will be presented to selected partially-formalized neighborhoods in the four unserviced wards in Zomba.

  2. Zomba residents in randomly assigned neighborhoods will receive information about the costs for waste collection in their area and the use of the city rate to provide waste collection.

  3. Zomba residents in a subset of randomly assigned neighborhoods that are assigned to the overall information treatment will be encouraged to pay city rates for waste collection via mobile payments,

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[3]In addition to the control group created through random assignment, we will incorporate information from other neighborhoods in the city to examine the overall effectiveness of information. For reasons of power, we cannot randomly assign the general information treatment to a large number of units.

which reduce transaction costs.

4. In a subset of randomly assigned neighborhoods from both the mobile-payments group and the cash-payments group within the overall information treatment, citizens will be provided transparent information about the overall contribution rates within that neighborhood.

5. After a set period of time, a waste collector will come through the neighborhood. If contributions above the threshold have been collected, waste will be collected from all contributing households in the ward, and the service will be introduced as a long-term service. If contributions are below the threshold, only contributing households will have their waste collected and the service will not be introduced long-term.

3.2 Study site and units

Study site: Zomba is divided into ten wards, each of which has an elected City Council representative. We will focus on four wards (Mbedza, Ntiya, Chilunga, and Mpire) with population ranging from 11,000 to 17,000 residents each; residents of these four wards currently do not pay city rates and do not receive government services. These four wards do not have any waste collection service. The Zomba City Council estimates the total population in the four wards at 52,000. Within each of the wards, there are both partially-formalized and informal settlements. The partially-formalized settlements are planned areas with roads that are home to middle-class income households; the informal settlements are unplanned areas with no formal roads that are home to low-income households. We will focus on the partially-formalized settlements — unlike the low-income citizens who live in informal settlements, the middle-class citizens who reside in these partially-formalized settlements should have the financial resources to pay city rates. The city of Zomba estimates that approximately 10,000 of the residents in these wards reside in the partially-formalized settlements.

To identify specific study sites, we will subdivide each of the settlements into sub-settlements of approximately 20 households (~125 individuals) using a participatory mapping process in the first six months of the study. We will use the term neighborhoods to refer to these units. The precise parameters of the division will be made in accordance with how the residents group themselves as well as what is most feasible for the waste management service that might be introduced to the neighborhood under the experimental intervention. There will be 15-25 neighborhoods in each of the four wards and approximately 90 neighborhoods under study altogether.

Study units: Overall, our study offers citizens of Zomba the opportunity to participate in collective action with the end goal of receiving government services like household waste collection. Of the 90 neighborhoods in the four wards, we will inform 80 neighborhoods about their ability to engage in collectively paying city rates for long-term waste collection. We will randomly choose 10 neighborhoods as global controls: where no intervention occurs other than the participatory mapping and outcome data collection. We then randomly assign our main treatment — the ability to pay city fees through mobile payments — to 50% of the neighborhoods within the set of 80 potential waste collection-receiving neighborhoods. We also randomly assign the transparent information treatment to 50% of the neighborhoods within the set of 80 information-receiving neighborhoods.

Our interventions break down according to the table below.

	Transparency	No Change	
Mobile Credit	20	20	40
Cash	20	20	40
	40	40	80

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Population is 90 neighborhoods (4 wards) with 80 treated neighborhoods and 10 global control neighborhoods.

We will study outcomes at both the neighborhood and individual levels, with three main types of neighborhood-level outcomes and three main types of individual-level outcomes. For neighborhoods, we will measure the amount of coordination among the residents to receive government services, public health outcomes, and the willingness to coordinate to pay other fees or to demand other public services in the future. For individuals, we will study their attitudes toward the government, relationships with the government, and willingness to formalize their relationship with the government in the future in other ways, such as their willingness to pay other government fees and taxes.

3.3 Intervention 1

Our main intervention reduces barriers to paying government fees by allowing citizens to pay fees through mobile phones instead of paying them through physical visits to collection locations. Our study population is the complete set of partially-formalized neighborhoods that can receive waste collection in the four selected wards. We will assign a subset of the neighborhoods being offered access to waste collection with the ability to pay city rates through mobile payment (mobile payment treatment). The other neighborhoods that are assigned waste collection will use the status quo of a physical cash transfer involving an in-person visit to the civic center (information only condition). Both will also be compared against a pure control group that has the ability to pay city fees but is not receiving explicit encouragement to do so. Mobile payment should reduce barriers for individuals to pay for a service by making it easier to complete the transaction and therefore encourage individuals to pay fees that contribute to the formalization of their individual relationship and the relationship of their community with Zomba City Council. We will communicate with all residents in treatment neighborhoods via in-person visits by local members of the research team as well as with pamphlets explaining the new possibilities for public service receipt and payment.[4]

There is precedent for mobile-financial technology to reduce barriers and encourage citizens to formalize relationships with institutions. Mobile payment systems like M-PESA are used widely by unbanked consumers and banked consumers alike, showing that such systems are highly valued not merely as a bank replacements but because they reduce barriers to transferring money (Jack and Suri 2011). In fact, some research suggests that consumers move into the formal banking sector after using M-PESA (Mbiti and Weil 2011). Some survey research shows that people use mobile payment because they perceive the service as useful and easy to access (Kim, Mirusmonov, and Lee 2010). We wonder whether introducing Zomba's citizens to city fees through a convenient tool like mobile payments may increase acceptance of paying city fees for other services. Zomba City Council has been looking for a more convenient method for citizens to pay fees and specifically suggested an electronic tool to pay city fees during the initial discussions about our study. Similarly, Zomba City Council is also in the process of installing kiosks to facilitate mobile and automated payment for renting stalls at their marketplaces (where the fees pay for cleaning and maintenance of the markets). Based on this research, we expect that the availability of mobile phone payment will increase the proportion of people in a neighborhood willing to contribute to paying for a public good.

3.4 Intervention 2

Our second arm studies the role of transparent information provision in facilitating the formalization process between residents and Zomba City Council. All neighborhoods with the option for waste collection will know how much money is required for one waste collector to come through the neighborhood. Half of the neighborhoods receiving the mobile payments treatment and half of the neighborhoods not receiving the mobile payments treatment also will be randomly assigned to receive transparent information at regular

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[4]We anticipate that the households we are targeting are largely literate in English.

intervals about how much money the neighborhood has already contributed and how much more they need to contribute to receive waste collection permanently. The neighborhoods not included in the transparent information treatment will not receive these updates. Instead, they will need to coordinate or track the number of households in their neighborhoods that have paid city rates, if they wish to do so.[5]

This treatment arm will allow us to build on the experimental evidence found in McBride (2010) that more uncertainty about thresholds increases contributions in discrete public goods games. Assuming that permanent waste collection is a high value service, when there is more uncertainty about the threshold — i.e., when there is less transparency about how many households have paid city rates — we expect more contributions, as each household is more likely to view itself as a pivotal player for ensuring permanent waste collection. In contrast, according to survey research on tax compliance, individuals may comply with taxes more because they see the positive benefits of the tax and they assume that there are not many tax evaders (Levi 1988; Tyler 1990). Therefore, more transparency about neighbors paying city rates may lead an indifferent household to pay city rates, conditional on seeing other households contributing.

This intervention will shed light on the question about whether providing more or less information facilitates more or less coordination of payments for waste collection. Further, we expect that individuals that receive more transparent information will have more positive attitudes toward the government.

3.5 Unit of Analysis and Outcome Measurement

Our units of analysis are the neighborhood and the individuals living within them. We will collect data on the ability of neighborhoods to coordinate in paying the fees to reach the necessary threshold to trigger waste collection. We also will collection data on other forms of collective action within the neighborhoods and on neighborhood-level public health outcomes. For individuals, we will collect baseline and endline data on their fee payments for other governmental services, as well as their attitudes toward, perceptions of, and relationships with the local government.

Neighborhood data We will use Zomba City Council's administrative data about payment from the neighborhoods, frequency of waste collection delivery, revenue from waste collection, as well as public health information and information that might reflect other forms of collective action within the neighborhoods. We will also aggregate individual level data, including data from the mobile-payments system and surveys.

3.6 Individual data

We will work with Zomba City Council to complete baseline and endline surveys in these wards. We will recruit enumerators through Zomba City Council, students from University of Malawi–Chancellor's College, and the National Statistical Office of Malawi. The University of Malawi–Chancellor's College and the National Statistical Office of Malawi are both located in Zomba.

The survey questionnaires will include measures of government legitimacy and perceived accountability and a battery related to the payment of local fees and taxes. In addition, we will measure people's perceptions of other residents' compliance and other assessments of collective efficacy and social capital as a means of studying the extent to which perceived participation by others in the payment scheme influences overall levels of collective action (as well as whether collective action increases collective efficacy and social cohesion itself).[6]

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[5]Understanding waste collection as a highly valued public good, our intervention will allow residents to contribute sequentially, such that, after our baseline survey, we can learn about which households move first in such games and how perceived proximity to a pivotal point influences contribution decisions. We will explicitly explore the connection between uncertainty about a threshold and contributions through our alternative treatment arm that targets information and transparency.

[6]We do not know much about the extent to which neighborhoods are segregated by religion (Muslim versus Christian) or by

4 Future Applications

We present a set of interventions that provide knowledge to citizens about how tax-like payments work, link taxes with public service delivery, reduce barriers to payment, and encourage collective action to improve public service delivery. We anticipate that our findings will broadly inform policy best practices regarding the incorporation of informal and partially-formalized settlements into more formal relationships with the state and for improving the quality of life of people living in such settlements. The findings will help the people and government of Zomba in particular to think about how to better integrate the large number of people living in partially-formalized settlements into the administrative structures of the city.

If this intervention is successful, Zomba will be able to provide waste collection to all neighborhoods in all wards in a sustainable manner — the residents will formalize their relations with the city by paying rates to maintain city services and the city will gain the capacity to provide services. In addition, different parts of this intervention are scalable and portable. If our proposed formalization process encourages residents to engage with the government, we can expand this type of intervention to other cities to formalize relations between residents and the city government through payment for public service delivery. We can also try to expand this type of intervention to the informal settlements of Zomba. If our mobile payment option reduces barriers and encourages more citizens to pay city rates, we can also expand this intervention to other government fees in Zomba or other cities.

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ethnicity between the Mang'anja/Nyanja, Yao and Lomwe. We conjecture that successful collective action could enhance tolerance between otherwise competing groups. But, we do not know whether group competition is salient or relevant in this context.

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Design and Pre-analysis Plan

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February 27, 2017

Note to EGAP Readers: This document is in process. So we will be especially grateful for input into the design and plan for analysis of this study. We have tried to use the EGAP supported Declare Design package (Blair et al. (n.d.)) when possible. Let us know what you think. Thanks again!

1 Overview

Overall, our study offers citizens of Zomba the opportunity to participate in collective action with the end goal of receiving government services like household waste collection. We anticipate that the participatory mapping exercise aiming at creating collections of households with strong social ties and collective efficacy will yield roughly 90 fairly compact and contiguous geographic units that we call neighborhoods. Of the 90 neighborhoods in the four wards, we will inform 80 neighborhoods about their ability to engage in collectively paying city rates for long-term waste collection. We will randomly choose 10 neighborhoods as global controls: where no intervention occurs other than the participatory mapping and outcome data collection. We then randomly assign our main treatment — the ability to pay city fees through mobile payments — to 50% of the neighborhoods within the set of 80 potential waste collection-receiving neighborhoods. We also randomly assign the transparent information treatment to 50% of the neighborhoods within the set of 80 information-receiving neighborhoods.

	Transparency	No Change	
Mobile Credit	20	20	40
Cash	20	20	40
	40	40	80

Experimental pool/Population is 90 neighborhoods (4 wards) with 80 treated neighborhoods and 10 global control neighborhoods.

We will assess power to detect effects given this design and some nearby others (the constraint on sample size is in the number of ways that we can divide up the Wards of Zomba City). Since we want to randomly assign 10 out of the total to the control condition in such a way that those 10 are particularly distant from the others, and thus less likely to be exposed to the treatment indirectly, we propose to do the following procedure:

First, we create a distance matrix containing the distances between the centroids of the 90 neighborhoods (defined by the participatory mapping/definition exercise). Second, we create a Mahalanobis distance matrix

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recording the distances in between the neighborhoods in covariates.[1] Third, we will create 10 blocks of 9 neighborhoods each based on minimizing Mahalanobis covariate distance and maximizing geographic distance. We hope that we can create blocks in which no neighborhood within an experimental block is adjacent to any other neighborhood. Then we will randomly assign one of those neighborhoods to control and 8 of the neighborhoods to one of the four conditions described above.[2] So, each neighborhood has a 1/9 chance of being assigned control and, conditional on not being assigned control a 1/4 chance of falling into one of the four cells in the above table (or each block has an assignment probability vector for control and the four cells of the table of $\{1/9, 2/9, 2/9, 2/9, 2/9\}$.[3]

2 Simulate the Design for Power Analysis and Pre-Analysis Planning

We presume that the covariates from the baseline survey and Zomba City administrative data that go into the Mahalanobis distance matching as well as some others explain about 40% of the variance in the outcome in the controls (i.e. in the uniformity trial where no treatment is administered). We also hold fixed these distance matrices and presume that the optimal blocking has been found. Below, allow natural heterogeneity by block as a stand in for what we might imagine would be the outcome variance reduction of the blocking procedure.

For now, we leave the R code for DeclareDesign (Blair et al. (n.d.)) in this document. We are doing this in order to learn better how to use this approach for design and pre-analysis planning — so that readers can offer comments to us — and to offer some guidance to those who have not yet heard of or used this tool.

First, create covariates. For now, they do not vary by block.[4]

```
library(DeclareDesign)


income <- declare_variable(type = "multinomial",
                           probabilities = c(.1, .5, .1),
                           outcome_categories = 1:3)
education <- declare_variable(type = "multinomial",
                             probabilities = c(.8, .3, .1, .1, .1),
                             outcome_categories = 1:5)
```

We are not sampling from a population think of the neighborhoods as the population to which we will infer given "samples" created by treatment assignment.

We make the noise, aka natural variation, in the outcome heterogeneous by block.

```
set.seed(20170201)
N <- 90
sampling <- declare_sampling(sampling = FALSE)
blockhetnoise <- "unsplit(lapply(split(blocks,blocks),function(bs){rnorm(length(bs),mean=unique(
population <- declare_population(income = income,
                                education = education,
```

---

[1]We use a rank based Mahalanobis distance matrix to mute the influences of variables with high variance such as binary variables Rosenbaum (2010) Chap 8.

[2]We anticipate using versions of the nonbipartite experimental block creation software from Higgins and Sekhon (2013) and Sävje, Higgins, and Sekhon (2016) since we want sets rather than pairs.

[3]Note to EGAP readers: We had thought to use a more standard saturation/multilevel assignment design, but, since we do not know the spatial distribution of these neighborhoods right now, we devised this scheme for assignment. This is an area where we are still wondering about how to plan for contingencies arising from the community-definition exercise.

[4]We are trying to use Declare Design for this project and will appreciate any hints on how to do this better.

```
                              blocks = "gl(10,9)", ## 10 blocks, 9 neighborhoods each
                              noise = blockhetnoise,
                              size = N)
```

State a formula relating natural variation, covariates, and treatment assignments to observed outcomes. The two-step or nested nature of the randomization was difficult to represent so we just assign neighborhoods directly as if in a 5 arm study with probabilities 1/9 (for the control arm) and 2/9 for the cells of the 2×2 factorial.

```
## Right now, Y is not standardized by default, so we are playing around to come up with .5 sd l
po_fmla <- Y ~ 1 * (Z == "control" ) + ( 1 * (Z == "mobile.noinfo") + 1.2 * (Z   == "mobile.info
                         .4 * (Z == "cash.info") + .3 * (Z == "cash.noinfo")
                    ) + .3 * income + .3 * education + noise

potential_outcomes <- declare_potential_outcomes(assignment_variable_name = "Z",
                                        condition_names = c("control", "mobile.noinfo",
                                                 "mobile.info", "cash.info",
                                    formula =po_fmla)

## This step creates a matrix with 10 rows (one for each block) and 5 columns (one for each arm)
## 1 unit assigned to arm 1 and 2 assigned to each of the other arms.
blockassignmentmat <- matrix(2,nrow = 10,ncol = 5)
blockassignmentmat[,1] <- 1
stopifnot(sum(blockassignmentmat)==N)

assignment    <- declare_assignment( potential_outcomes = potential_outcomes ,
                                block_m_each= blockassignmentmat,
                                block_var="blocks")
```

The next step puts together the information about covariates and blocking and the assignment procedure and creates one dataset of simulated data that we can use to build power analysis and specify mock analyses.

```
design <- declare_design(population = population,
                        assignment = assignment,
                        sampling = sampling,
                        potential_outcomes = potential_outcomes)

set.seed(20170201)
thedata <- draw_data(design)
```

```
head(thedata)
```

```
  level_A_ID income education blocks     noise Y_Z_control Y_Z_mobile.noinfo Y_Z_mobile.info Y_Z
1          1      3         3      1  1  0.178886       2.379             2.379           2.579
2          2      2         2      2  1 -0.113520       2.086             2.086           2.286
3          3      3         3      5  1 -0.113606       3.286             3.286           3.486
4          4      4         2      2  1 -1.151339       1.049             1.049           1.249
5          5      5         1      5  1  0.008014       2.808             2.808           3.008
6          6      6         2      1  1  1.031281       2.931             2.931           3.131
```

3

```
  inclusion_probabilities sampling_weights             Z Z_assignment_probabilities Z_assignment
1                       1                1     cash.info                     0.2222
2                       1                1   mobile.info                     0.2222
3                       1                1     cash.info                     0.2222
4                       1                1       control                     0.1111
5                       1                1   mobile.info                     0.2222
6                       1                1 mobile.noinfo                     0.2222
  Z_assignment_inclusion_probabilities Z_assignment_sampling_weights     Y
1                               0.2222                           4.5 1.779
2                               0.2222                           4.5 2.286
3                               0.2222                           4.5 2.686
4                               0.1111                           9.0 1.049
5                               0.2222                           4.5 3.008
6                               0.2222                           4.5 2.931
```

```r
table(thedata$Z)
```

```
    cash.info   cash.noinfo       control   mobile.info mobile.noinfo
           20            20            10            20            20
```

We show that all together the blocking and covariates account for about 40% of the outcome variation.

```r
## Looking for an R^2 around .4
summary(lm(Y_Z_control~income+education+blocks,data = thedata))$r.squared
```

```
[1] 0.3714
```

Now create the actual design with three assignment indicators:

```r
thedata$Zctrl <- as.numeric(thedata$Z=="control")
thedata$Zpay  <- ifelse(thedata$Z %in% c("mobile.info","mobile.noinfo"),1,0)
thedata$Zinfo  <- ifelse(thedata$Z %in% c("cash.info","mobile.info"),1,0)
with(thedata,ftable(Zctrl,Zpay,Zinfo))
```

```
          Zinfo  0  1
Zctrl Zpay
0     0          20 20
      1          20 20
1     0          10  0
      1           0  0
```

And create potential outcomes by averaging over the cells in the table:

```r
thedata$Y_Z_Zpay_mobile <- rowMeans(thedata[,c("Y_Z_mobile.noinfo","Y_Z_mobile.info")])
thedata$Y_Z_Zpay_cash<- rowMeans(thedata[,c("Y_Z_cash.noinfo","Y_Z_cash.info")])
thedata$Y_Z_Zinfo_info  <- rowMeans(thedata[,c("Y_Z_mobile.info","Y_Z_cash.info")])
thedata$Y_Z_Zinfo_noinfo  <- rowMeans(thedata[,c("Y_Z_mobile.noinfo","Y_Z_cash.noinfo")])
```

2.1 Power

Now that the data has been setup, let us specify our estimands and tests. For now, we assess power to detect mobile payments versus cash payments.[5] By choosing only one comparison to assess, we temporarily side-step questions related to multiple comparisons. We will engage with

```
## Use our own custom functions for covariate adjusted, block-size weighted ATE estimation with
source("confintHC.R")

my_estimand <- function(data){
  ## Define our target of estimation using block-size weighting because we have equal sized bloc
  ## Jumping through more hoops to collapse over arms.
  ## require(dplyr)
  ## blockeffects<- data %>% group_by(blocks) %>% summarise(effect=mean(Y_Z_Zpay_mobile) - mean(
  ## ateblockwt<-sum( blockeffects$effect*blockeffects$n/sum(blockeffects$n))
  geteffectsandn<-function(dat){
    Y_Z_Zpay_mobile <- rowMeans(dat[,c("Y_Z_mobile.noinfo","Y_Z_mobile.info")])
    Y_Z_Zpay_cash<- rowMeans(dat[,c("Y_Z_cash.noinfo","Y_Z_cash.info")])
    ateb <-mean(Y_Z_Zpay_mobile) - mean(Y_Z_Zpay_cash)
    nb <- nrow(dat)
    return(c(ateb=ateb,nb=nb))
  }

  blockeffects<- with(data,sapply(split(data,blocks),function(dat){ geteffectsandn(dat) }))
  ateblockwt<-sum( blockeffects["ateb",]*blockeffects["nb",]/sum(blockeffects["nb",]))
  return(ateblockwt)
}

my_estimates   <- function(data) {
  ## A function to estimate a block-size weighted ATE (contrast with estimating a harmonic-mean
  ## currently very inefficient but doesn't crash
  ## Also we would prefer not to estimate all of the effects for block fixed effects.
  require(lmtest)
  require(sandwich)
  data <- data[data$Z!="control",] ## exclude control obs from the comparison
  ## Align or Center within Blocks
  data$Zpay  <- ifelse(data$Z %in% c("mobile.info","mobile.noinfo"),1,0)
  Zb <- with(data, Zpay  - ave(Zpay,blocks))
  Yb <- with(data, Y  - ave(Y,blocks))
  X <- model.matrix(~0+blocks,data)
  colnames(X)<-make.names(colnames(X))
  data[,colnames(X)] <- X
  data[,paste(colnames(X),"md",sep="")]<-apply(X,2,function(x){ x - mean(x) })
  newfmla <- paste("Y~Zpay*(",paste(colnames(X)[-1],"md",sep="",collapse="+"),")",collapse="")

  ## If we wanted to adjust for covariate relationships within blocks, we would need these quant
```

---

[5]We welcome comments on this process. We plan to assess mobile payments versus control and the effects of mobile payments and information versus cash payments and information as well.

```r
  ## We do not do this for now.
  ## incomeb <- with(data, income  - ave(income,blocks))
  ## educationb <- with(data, education  - ave(education,blocks))

  ## Following Lin et al for convenient block-size weighted ate est with randomization/Neyman SE
  ## https://htmlpreview.github.io/?https://github.com/acoppock/Green-Lab-SOP/blob/master/Green_

  ## This method insists on block size weights
  mod <- lm(formula(newfmla),data=data)
  results <- coeftest(mod,vcov(mod,"HC2"))

  est <- coef(mod)[[2]]
  se  <- results[2,"Std. Error"]
  df       <- mod$df
  p  <-results[2,"Pr(>|t|)"]
  ci <- confint.HC(mod,parm=2,thevcov=vcov(mod,"HC2"))
  ci_lower <- ci[1]
  ci_upper <- ci[2]
  data.frame(estimate_label = "diff-in-means-block-size-wt",
             est = est, se = se, p = p,
             ci_lower = ci_lower, ci_upper = ci_upper, df = df,
             stringsAsFactors = FALSE)
}


estimand        <- declare_estimand(estimand_function = my_estimand, potential_outcomes = potenti
estimator       <- declare_estimator(estimates = my_estimates, estimand = estimand)

get_estimates(estimator,thedata)
```

```
             estimate_label   est     se        p ci_lower ci_upper df estimator_label estiman
1 diff-in-means-block-size-wt 0.953 0.2578 0.000476   0.4372    1.469 60       estimator        e
```

```r
designPlusEst <- modify_design(design, estimator = estimator)
```

We are not convinced that this is what we wanted: we do not want make new draws from the population, we want to hold thedata fixed and only want to vary assignment. We are also a bit confused about how to ensure that we are assessing standardized effect sizes. It is possible that our effect size of 0.75 is unrealistically high.

```r
dd <- diagnose_design(designPlusEst,population_replicates=1,sample_draws=1,assignment_draws=1000
dd$diagnosands[,5:6]
```

```
  diagnosand diagnosand_label
1   0.759372    mean(estimate)
2   0.244503      sd(estimate)
3   0.009372              bias
4   0.244622              RMSE
5   0.945000          coverage
6   0.884000             power
```

```
7   0.001000      type S rate
```

The diagnosis above, for the one estimand we target, appears fine. We have low bias, and correct Type I error rate (Wtihin simulation error) and reasonable power.

[Insert assessment of cash/no information versus control as a spillover check. And assessment of cash plus information versus mobile plus information.]

3 Pre-analysis plan: A mock analysis.

Here we will execute a mock analysis that will serve as the pre-analysis plan. For any analysis not specified here, we will follow the Green Lab Standard Operating Procedure Lin and Green (2016). This section is incomplete.

Our primary outcomes are:

- (1) the amount of coordination among the residents to receive government services (do they reach the threshold for continued waste collection beyond the study period? how long does it take the group to reach this level?)

- (2) public health outcomes[6]

- (3) willingness to coordinate to pay other fees or to demand other public services in the future.

For individuals, we will study their:

- (1) attitudes toward the government,

- (2) relationships with the government,

- (3) willingness to formalize their relationship with the government in the future, such as willingness to pay other government fees and taxes.

The attached survey document describes our current ideas about questions to include at baseline and endline.

As displayed above, we plan to estimate average treatment effects where we define the estimand, or target of estimation, as the block-size weighted average of the within block treatment effects.[7] Throughout, we anticipate following an Intent to Treat approach — we do not currently imagine having "compliance" be an issue with the study: we will offer the chance to raise money and the outcome itself will be the attempts to raise money.

As a safe-guard against problems associated with large-sample Normal approximations we will report both permutation-based tests of the sharp null of no effects as well as confidence intervals for weak nulls calculated as above, following Lin and Green (2016) and the citations therein. We do not anticipate receiving large p-values when our confidence intervals exclude zero, but this is an easy way to assess the validity of our confidence interval creation procedure.

Since our analysis will be at the level of the neighborhood, we do not anticipate binary outcomes. To the extent that we have binary outcomes we are interested in learning about differences of proportions not differences of log-odds, so we will use the same machinery as above (i.e. differences of means).

[Insert plan for multiple comparisons among the 5 arms of the study]

---

[6]Our primary contact at Zomba City Council is in charge of public health.

[7]If we find ourselves in a situation with very unequal block sizes and/or unequal proportions assigned treatment within blocks, we would define our target of inference using a harmonic mean following Hansen and Bowers (2008) section 5.

We do not anticipate that neighborhoods will remove themselves from the study. But individuals within the neighborhoods may well drop out. [More on that.]

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Zomba Survey Questions

Christopher Grady, Nuole (Lula) Chen, Matt Winters, & Jake Bowers

February 27, 2017

Outcomes to Measure

From paper: For neighborhoods, we will measure:

- (1) the amount of coordination among the residents to receive government services,

- (2) public health outcomes

- (3) willingness to coordinate to pay other fees or to demand other public services in the future.

For individuals, we will study their:

- (1) attitudes toward the government,

- (2) relationships with the government, and

- (3) willingness to formalize their relationship with the government in the future, such as willingness to pay other government fees and taxes.

Questionnaire

Enumerator recorded information

1. Ward
2. Settlement
3. PSU/neighborhood
4. House number
5. # people living in household
6. # of randomly selected respondent

Intro statement

1. My name is _____, I'm with _____. This survey should take about 30 minutes.
2. Could you please sign here consenting to the survey and promising to answer all questions honestly?

Intro Demos

1. Gender
2. Age
3. Languages
4. Ethnicity

Social Cohesion (mainly from WB Social Capital)

Community Assistance/Collective Action

1. What proportion of people in this neighborhood contribute time or money towards common development goals, such as repairing a road or maintaining a community center? (WB Social Capital 3.5)

- Everyone
- More than half
- About half
- Less than half
- No one

2. If there was a water supply problem in this community, how likely is it that people will cooperate to try to solve the problem?

- Very likely
- Somewhat likely
- Neither (not enumerated)
- Somewhat unlikely
- Very unlikely

3. How likely is it that people who do not participate in community activities will be criticized or sanctioned? (WB Social Capital 3.4)

- Very likely
- Somewhat likely
- Neither (not enumerated)
- Somewhat unlikely
- Very unlikely

4. Suppose something unfortunate happened to someone in the neighborhood, such as serious illness or the death of a parent. How likely is it that some people in the community would get together to help them?

- Very likely
- Somewhat likely
- Neither (not enumerated)
- Somewhat unlikely
- Very unlikely

7. If a community project does not directly benefit you but has benefits for many others in the neighborhood, would you contribute time or money to the project?

- Time: Will/will not
- Money: will/will not

8. If there was a crime problem in this neighborhood, what proportion of people in the community would volunteer for a neighborhood watch program? (**Chris: We made this one up & need to improve it.**)

- Everyone
- More than half
- About half
- Less than half
- No one

2. I'm going to list several things people do when they need a little extra money to pay for expenses, like food or school fees. Please tell me which of these things you might do if you needed some extra money. (**Chris: We also made this one up. Putting here to hide that we are interested in tax/fee avoidance.**)

- Asked a friend or family member for money
- Obtained a loan from a bank
- Stolen money from a foreigner (**Maybe a bad option**)
- Avoided paying taxes/fees to the government

Government Demands

5. In the past 12 months, how often have people in this neighborhood gotten together to jointly petition government officials or political leaders for something benefiting the community?

- Never
- Once
- A few times ($<=5$)
- Many times (>5)

6. Were any of those petitions successful?

- Yes, all
- Most successful
- Most unsuccessful
- None

3. Please tell me whether you think each of the following actions can always be justified, never be justified, or something in between (**WVS 198**). (**Chris: Putting here to hide that we are interested in tax/fee avoidance**).

- Someone accepting a bribe in the course of their duties
- Avoiding taxes if you have the chance
- Avoiding city fees if you have the chance
- **Others?** *WVS lists many.*

Perceptions of Community Law-Abiding/Fee-Payment

1. When a new business opens around here, what do you think the chances are that the business is legally registered with the city?

- 1 - Definitely not registered
- 2
- 3
- 4
- 5 - Definitely registered

2. The city government of Zomba is responsible for collecting fees for businesses licenses, market stands, and other such things. What proportion of people in this neighborhood do you think actually paid the fees they owed the district government in 2017?

- None
- A few
- Some
- Most
- All

3. In the past three years, do you think the number of people in this neighborhood who paid the fees they owed the city government has increased or declined?

- Increased
- Stayed the same
- Decreased

4. The city government of Zomba is responsible for organizing community meetings on important public health issues. How many people in this neighborhood do you think actually attended the meetings on public health issues organized by the district government in 2017? (**Chris: This comes from Matt's Uganda survey, and we are not sure if this is something Zomba does. If not, we can replace it.**)

- None
- A few
- Some
- Most
- All

5. In the past three years, do you think the number of people in this neighborhood who attended public heath meetings organized by the city government has increased or decreased?

- Increased
- Stayed the same
- Decreased

Social/Community Trust

8. Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?

- People can be trusted
- Can't be too careful

9. In general, do you agree or disagree with the following statements?

- Most people in this neighborhood are willing to help if you need it.
- In this neighborhood, one has to be alert or someone is likely to take advantage of you.
    - Strongly Agree
    - Somewhat Agree
    - Neither (not enumerated)
    - Somewhat Disagree
    - Strongly Disagree

Attitudes Towards the Government

Endorsement Experiment (two attempts, needs work)

0. Probably needs to be a local issue, not a country/national issue. Situations in Zomba: Ministers investigated/jailed for stealing money meant to import grain from Zambia.
1. Imagine that there is a proposal **by the city of Zomba** for major cities in Malawi to import their own grain from neighboring countries. Cities would raise city rates to pay for this proposal, but grain would be much cheaper for all citizens. If this were proposed, how would you feel about it?

- Strong support
- Support
- Oppose
- Strong oppose
- Neither (not enumerated)

2. Imagine that there is a proposal **by the city of Zomba/National Gov of Malawi** to attract more foreign direct investment into Malawi. The proposal would *??*. If this were proposed, how would you feel about it?

- Strong support
- Support
- Oppose
- Strong oppose
- Neither (not enumerated)

3. **Text:** I want to make clear that this is *not* a current proposal. We doing the survey just want to know what you would think if that were proposed.

Gov Competence

1. Overall, how satisfied are you with the way the city government of Zomba has administered the city over the last 5 years? (from Matt's Uganda survey, modified).
    - Very satisfied
    - Somewhat satisfied
    - Neither (do not enumerate)
    - Somewhat dissatisfied
    - Very dissatisfied
2. Overall, how satisfied or dissatisfied are you with the way your city councilor has performed his/her role over the past five years? (from Matt's Uganda survey, modified).
    - Very satisfied
    - Somewhat satisfied
    - Neither (do not enumerate)
    - Somewhat dissatisfied
    - Very dissatisfied
3. Overall, how satisfied or dissatisfied are you with the bureaucracy of Zomba has performed their role over the past five years? (from Matt's Uganda survey, modified).
    - Very satisfied
    - Somewhat satisfied
    - Neither (do not enumerate)
    - Somewhat dissatisfied
    - Very dissatisfied
4. Imagine that many of the local market places had been badly damaged due to bad weather. How likely or unlikely do you think it is that the local government could fix the problem?

- Very likely
- Somewhat likely
- Somewhat unlikely
- Very unlikely

5. Thinking about the needs of this community, do you think the resources your local government has to meet them are sufficient or insufficient?

- Very sufficient
- Somewhat sufficient
- Somewhat insufficient
- Very insufficient

Gov Trust

1. I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: a great deal, a lot, not very much, none. (WVS V108). **Alternate: How much do you trust each of the following, or haven't you heard enough about them to say?** *not at all, just a little, somewhat, a lot* (2014 Cameroon Afro #52).

- The national government
- The city government
- The court system
- Political parties
- Parliament
- The Civil service
- Non-governmental organizations
- **Others?** *WVS lists many*
- **NOTE: We would prefer to replace this question with another that measures government trust/confidence.**

Citizen Obligations

1. For each of the following actions, please tell me whether you think it is something a good citizen in a democracy should *always do, never do, or do only if they choose.* (2014 Cameroon Afro #26)

- Vote
- Avoid criticizing the gov
- Complain to gov officials when public services are of poor quality
- Request personal assistance like help with school fees or funeral expenses from elected leaders
- Pay taxes they owe to the gov
- Agree with the majority of people in his/her community on political issues

2. Here is a list of actions that people sometimes take as citizens when they are dissatisfied with gov performance. For each of these, please tell me whether you personally have done any of these things during the past year. (2014 Cameroon Afro #27)

- Joined others in your community to request action from gov
- Contacted the media, like calling a radio program or writing a letter to a newspaper
- Contacted a gov official to ask for help or make a complaint
- Refused to pay a tax or fee to the government
- Participated in a demonstration or protest march
  - **If yes**: *often, several times, once or twice.*
  - **If no**: *would have if had chance, would never do this*

3. Which of the following statements is closer to your view? Statement 1: Citizens must pay taxes to the government in order for our country to develop. Statement 2: The government can find enough resources for development from other sources without having to tax the people. (2014 Cameroon Afro #44)

- statement 1 agree strongly
- statement 1 agree
- statement 2 agree
- statement 2 agree strongly
- agree with neither.

4. If the local government decided to make people pay more taxes or user fees in order to increase spending on public health care, would you support this decision or oppose it? **Could ask about something like waste collection instead of public health care**. (2014 Cameroon Afro #65)

- strongly oppose
- somewhat oppose
- somewhat support
- strongly support

Gov Role/Democracy

1. Which of the following statements is closer to your view? Statement 1: Government should take more responsibility to ensure that everyone is provided for. Statement 2: People should take more responsibility to provide for themselves (WVS V98, modified).
2. How important is it for you to live in a country that is governed democratically? On this scale where 1 means "not at all important" and 10 means "absolutely important", what position would you choose? (WVS V140)
3. And how democratically is this country being governed today? Again using a scale from 1 to 10, where 1 means that it is "not at all"democratic" and 2 means that is it "completely democratic", what position would you choose? (WVS V141)

Knowledge of Gov Activities and Citizen Obligations

City Gov Knowledge

1. Based on your experience, how easy or difficult is it to do each of the following?

- To find out what taxes and fees you are supposed to pay to the local government?
- To avoid paying the income or property taxes that you owe to the local government?
  - Very easy
  - Easy
  - Difficult
  - Very difficult

2. I'm going to list some activities and services that are provided for citizens of Zomba. For each, I'd like you to tell me who you think provides this activity or service. (Chris: We made this up)

- Maintain roads
- Maintaining local market places
- **Need list from Zomba**
  - National gov
  - City gov
  - NGOs
  - Others?

3. **Text**: In fact, the city government is in charge of all of those things.
4. Now I'd like to ask you about these things provided by the city government. How well or badly would you say the city government is handling the following matters? (2014 Cameroon Afro #66-67)

- Maintaining local roads
- Maintaining local market places
- **List from Zomba**
  - Very badly
  - Fairly badly
  - Fairly well
  - Very well

5. And how well or badly would you say the city government is handling these other matters? (2014 Afro #66-67 + Matt's Uganda survey)

7

- Improving basic health services?
- Addressing educational needs?
- Providing access to safe water?
- Improving people's opportunity to earn income?
  - Very badly
  - Fairly badly
  - Fairly well
  - Very well

Citizen Obligations (needs other name)

1. In the last year, have you been asked to pay any fees to the local government of Zomba?
2. Which city fees have you been asked to pay?

- *list from Zomba*

3. **ALTERNATE for 1-2 from Uganda survey**: Do you pay license fees to the local government for a bicycle, cart, business, market stall or these sorts of things? Please respond truthfully, as your individual answers will be kept confidential and we will not report them to the government or any other organization

- If no, prompt "is this because you don't have these sorts of things, or because you avoided paying the fees?"

3. Did you always pay fees when asked, paid the fees some of the time, or never paid the fees?

- Always paid
- Sometimes paid
- Never paid

4. How did you pay those fees?

- Cash
- Mobile
- Other ways

5. **If pay fees:** If your local government slightly increased the license fees charged for bicycles, carts, businesses, market stalls or these sorts of things, how likely or unlikely would you be to pay the increased fees?

- Very likely
- Somewhat likely
- Somewhat unlikely
- Very unlikely

6. **If don't pay fees:** Imagine you did pay these fees. If your local government slightly increased the license fees charged for bicycles, carts, businesses, market stalls or these types of things, how likely or unlikely would you be to pay the increased fees?

- Very likely
- Somewhat likely
- Somewhat unlikely
- Very unlikely

7. **If pay fees:** If your local government slightly increased the license fees charged for bicycles, carts, businesses, market stalls or these sorts of things, how likely or unlikely would you be to pay the increased fees?

- Very likely

- Somewhat likely
- Somewhat unlikely
- Very unlikely

8. **If don't pay fees:** Imagine you did pay these fees. If your local government slightly increased the license fees charged for bicycles, carts, businesses, market stalls or these types of things, how likely or unlikely would you be to pay the increased fees?

- Very likely
- Somewhat likely
- Somewhat unlikely
- Very unlikely

Interactions with the Government

The Interactions

0. When was the last time someone from the government visited you? (**Chris: We made this up & need to improve it**)

- Last week
- Last month
- Within the last few months
- Within the last year
- More than one year ago
- Never

1. During the past year, how often have you contacted any of the following people about some important problem or to give them your views? *Never, only once, a few times, often* (2014 Cameroon Afro #24)

- Local gov councilor
- Deputy or senator of parliament
- Official of a gov agency
- Political party official
- Trad leader
- Rel leader

6. Now I would like to talk to you about experiences that some people have in accessing certain essential government services (2014 Cameroon Afro #55)

- In the past twelve months have you tried to get identity documents like birth certificates, driver's license, passport, voter's card, permit from government?
- In the past twelve months have you tried to get water, sanitation, or electric services from government?
- In the past 12 months, have you had contact with a public clinic or hospital?
- In the past 12 months, have you had contact with a public school?
- In the past 12 months, have you requested assistance from the police?
    - (1) how easy/difficult was it to obtain the service: *very easy, easy, difficult, very difficult*
    - (2) how often did you have to pay a bribe give a gift, or do a favor for X person to get the service? *never, once or twice, a few times, often*

7. Imagine the local government asked citizens to attend a meeting on preventing the spread of an infectious disease but could not provide any compensation for attending, how likely or unlikely would you be to participate?

- Very likely
- Somewhat likely
- Somewhat unlikely

- Very unlikely

Evaluating the Interactions

10. To what extent do local government and local leaders take into account concerns voiced by you and people like you when they make decisions that affect you? (WB Social Capital)

- A lot
- A little
- Not at all

Corruption Perceptions

1. In your opinion, over the past year, has the level of corruption in this city increased, decreased, or stayed the same?

- Increased a lot
- Increase a little
- Decreased a little
- Decreased a lot
- stayed the same_ (not enumerated) (2014 Afro #54)

10. **ALTERNATE**: How many people in your local government do you think are involved in corruption?

- None
- A few
- Some
- Most
- All

2. If an international donor had money that he or she wanted to give to help people in this city, would your prefer the money be given to the city government or to NGOs?

- City gov
- NGOs

3. How likely or unlikely do you think it is that the foreign aid to the city government was spent on the projects that help people in Zomba? (**Chris: Modified**.)

- Very likely
- Somewhat likely
- Somewhat unlikely
- Very unlikely

Self-Reported Behavior

Voting

1. Could you tell me when was the most recent local election?
   - Did you vote in that election, or did something prevent you from voting that day?
2. Could you tell me when was the most recent national election?
   - Did you vote in that election, or did something prevent you from voting that day?

Health Events

Now I'd like to ask you a few questions about health.

1. In the last 6 months, have you or has anyone in this household sought treatment at a health clinic?

- Yes (**If yes, Qs 2-3**)
- No (**If no, Q4**)

2. What was the reason for the visit to the health clinic?

- Stomach illness
- Malaria
- **Others?**

3. Did any trip to the health clinic require an overnight stay?
4. Did you or anyone in this household have any serious illness for which you did not seek treatment at a health clinic?

- Yes (**If yes, Q5**)
- No

5. For what reason did you not seek treatment at a health clinic?

- Cost
- Don't like clinics
- Don't need help
- Purchased pharmaceutical drugs
- Other

End Demographics

1. Employment
2. Income + Education
3. SES measure
4. Religion
5. Citizenship?
6. May I know, do you consider yourself a member of any political party?

- Name of parties if yes

Identifying information for cross-ref admin data

1. Name
2. Phone number
3. I have just one more question for you. Who do you think sent us to do this interview?

End Enumerator Info

1. Honest respondent?
2. Interested respondent?
3. Interview public or private?
4. **Others?**

EGAP Feedback

1. Who do people think about when they think "local government" or "city government"
2. How to ask about willingness to formalize their relationship with the government in the future, such as willingness to pay other gov fees and taxes?These respondents do not pay city fees. How to ask questions about their willingness to pay fees/increased fees?
3. Questions to cut
4. Anything else EGAP suggests!