***Worksite sampling*: an underused but practical tool to sample hard-to-reach populations in political science**

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Abstract

Despite an increasing reliance on survey data, finding and sampling understudied populations remains a serious obstacle in political science research. This is particularly true for studies where we lack a high-quality sampling frame, such as conflict or rural settings, or informal areas in the developing world. This paper offers suggestions for how to find and interview these hard-to-reach groups at their place of business rather than their homes, using a technique called *worksite sampling*. I argue that worksite sampling is underleveraged in political science, not just as a tool to find people, but also as a technique to improve response quality and better protect respondent safety. This paper explains the tradeoffs of using worksite sampling to find people, to elicit truthful answers, and to conduct a safer survey. This paper illustrates these suggestions with evidence from an in-person survey conducted in Rio de Janeiro, Brazil, which used worksite sampling to interview bus drivers and fare collectors about criminal governance in their neighborhoods.

1. Introduction

Surveys are one of the most common ways to collect data in political science. Exactly 50% of research articles and letters published in the most recent *American Political Science Review (APSR)* draw from some sort of survey data, either from large-scale public opinion surveys, original surveys conducted by the research team, or as part of a survey or field experiment. Research using statistical-observational and experimental methods comprise more than 70% of articles published during the latest two *APSR* editorial terms, frequently drawing from survey evidence (APSR Editors 2023). These trends have been documented in recent reviews of the literature in international relations (Hyde 2015), American politics (Atkeson 2010), and comparative politics (Gans-Morse, Gingerich, and Pepinsky 2024). Relatedly, survey data has grown increasingly accessible: large-scale cross-national surveys are available at one's fingertips, and fielding an online panel has never been as quick or affordable (Paolacci and Chandler 2014).

Despite the available options for collecting public opinion data, it remains difficult to field surveys on certain populations. Survey firms' sampling infrastructure often either lacks the tools to reach such groups or is prohibitively expensive. In the developing world, these problems are further exacerbated: the same types of marginalized groups that are hard-to-reach through face-to-face surveys also tend to be hard to reach through mobile phone or online channels (Castorena et al. 2023; Elkasabi and Khan 2023).

Drawing from techniques in the demography and survey methodology literature, this paper explains how *worksite sampling* can be implemented for political science research, either as a substitute or a complement to existing survey sampling strategies. *Worksite sampling* is a form of venue-based sampling, where instead of interviewing respondents door-to-door at their place of residence, survey enumerators interview them at their place of business. This paper argues that worksite sampling can be a powerful tool for political science research, not just to help find certain populations, but also as a technique to improve response quality and better protect respondent safety. I draw from an original

survey using worksite sampling in Rio de Janeiro, Brazil to show how this technique can be used.

First, I explain which types of research questions and target populations might be most suitable for a study design using worksite sampling. I explore the different types of bias that worksite sampling may introduce, especially when attitudes and behaviors of the individuals surveyed might correlate with their profession. I develop a typology illustrating the ways different kinds of worksite sampling can mitigate these biases, focusing on the differences between a) outcomes at the group- versus individual-level, and b) the geographic area of interest. I illustrate the mapping of these tradeoffs to a real-world worksite sampling strategy in a survey focused on understanding electoral campaigns in low-income areas in Rio de Janeiro, Brazil.

Second, I explain how worksite sampling is an underused tool to elicit truthful responses to sensitive questions. When the worksite is a more neutral location than the home, the change of setting can make questions seem less sensitive and better elicit truthful answers *while* providing the respondents with additional security. I show how worksite sampling can be used in conjunction or as a substitute for existing tools to ask sensitive questions, and illustrate an application in Rio de Janeiro asking direct and indirect questions.

Third, I explain how worksite sampling can be used to better guarantee respondent and enumerator safety, with a focus on conflict settings. I explain how the workplace can sometimes serve as a neutral space for respondents to speak about violence, conflict, or contested governance, compared to the home. I explain the measures I took to further protect respondent and enumerator safety in the Rio de Janeiro survey, and share respondent emotional reactions at the end of the survey.

Throughout the paper, I lay out a series of questions and best practices that bring these considerations together to offer practical advice for the implementation of worksite

sampling. The next section reviews the literature on surveying hard-to-reach groups, both in political science and in demography. The third section explains the sampling, response quality, and ethical considerations related to worksite sampling, illustrating each concept with an example from the survey I conducted in Rio de Janeiro.

2. Finding hard-to-reach people

As the use of surveys increases in political science, so too does the acknowledgement that it is difficult to construct representative samples when conducting surveys. In the American context, such concerns about representativeness plague discussions about election polling and its solutions (Ansolabehere and Rivers 2013).

These problems are further exacerbated for those who study the developing world. Lupu and Michelitch (2018) enumerate several challenges of conducting surveys in the developing world, noting that the dominant sampling mode is a face-to-face survey, where the sampling frame is constructed from census data. Elkasabi and Khan (2023) and Castorena et al. (2023) demonstrate the weaknesses of web-based and mobile phone sampling approaches, showing how certain groups in the developing world are harder to survey than others; namely the lower income, less educated, and women. Regardless of survey mode, all authors acknowledge the inadequacies of existing tools in finding *hard-to-reach* populations.

Existing survey methodology scholarship defines people as hard-to-reach for one of several reasons, because they are a) hard to *sample*, b) hard to *identify*, c) hard to *locate*, d) hard to *persuade*, and e) hard to *interview* (Tourangeau 2014). Many of the hard-to-reach are so because of multiple of these reasons. For example, migrants might be both hard to sample (they are not in the underlying sampling frame) and hard to locate (there is no real-time update about their current location) and, depending on their reason for migration, hard to persuade, especially if their citizenship status is tenuous or they are otherwise

marginalized. Throughout this paper, I do not differentiate between these subtypes, and use the broader definition of *hard-to-reach* populations, groups that present special challenges that make them harder to survey than the general population.

Often, the hard-to-reach are vulnerable or marginalized in some ways. Such "elusive" groups include migrant workers, members of cultural or religious minorities, or other stigmatized groups (Kalton 2009; Keeter et al. 2008). The bias that these sampling challenges induce is especially concerning for those who study comparative politics in the developing world. Political science scholars are increasingly interested in questions of vulnerability and migration and in the politics of gender, race and identity, yet these are the very groups that are the hardest to find and interview.

The public health and survey methodology literature has identified *venue-based sampling* as a promising development for finding the hard-to-reach (Lee et al. 2014). Deviating from conventional door-to-door sampling, venue-based sampling focuses on sampling sites where the hard-to-reach are likely to be found. Examples include sampling STD clinics to interview sex workers and HIV-positive men (Paquette and De Wit 2010; Sarkar et al. 2008) and sampling migration social service locations in the EU (Reichel and Morales 2017).

Sampling individuals at their workplace – *worksite sampling* – is one of several venue-based strategies to find the hard-to-reach. In the demographics literature, it has been used at bazaars, eateries, and markets to interview labor migrants in Russia (Agadjanian and Zotova 2012) and at factories in Bangladesh to interview child laborers (Verma 2013).

Worksite sampling, however, has been infrequently used in political science. A survey of top journals reveals that there are zero mentions of "worksite sampling," "workplace sampling," or "venue-based sampling."[1] Notable exceptions include Thachil's (2018)

[1] This includes search of the online archives for the following eight political science journals: *American Political Science Review, American Journal of Political Science, Journal of Politics, Perspectives on Politics,*

survey of circular urban migrants in India and Grossman's (2022) survey of market workers in Nigeria. Given current trends in comparative politics, especially studies focused on the local level, this sampling strategy might be underused.

3. Using worksite sampling in political science

There are several reasons why worksite sampling could be used to answer today's pressing questions in the discipline. The demography literature above presents one of the simplest and most important reasons: to find *people*. Yet there are other reasons that have not yet been articulated but are an increasing part of the conversation in political science research methods. In addition to finding people, worksite sampling can be used as a tool to improve response quality and better elicit more truthful answers to certain sensitive questions. Finally, worksite sampling can be used to better protect respondent and enumerator safety, especially in violent or insecure settings. This section explores the tradeoffs researchers should consider in these areas when deciding if worksite sampling is right for their study.

3.1 Constructing a sample using worksite sampling

Most fundamentally, worksite sampling can be used as a strategy to find people, especially the hard-to-reach. Yet worksite sampling is not a silver bullet: the sampling gains can introduce bias into studies through different channels, most egregiously when survey responses are systematically correlated with profession at the chosen worksite. Some research questions might be more suited to the use of worksite sampling than others and better able to overcome these biases.

PS: Political Science and Politics, British Journal of Political Science, World Politics, and *Comparative Political Studies*.

How much is one's profession correlated with attitudes, beliefs, or other common survey outcomes? Selecting all respondents from the same workplace sampling frame can introduce bias in two ways: because the workplace makes people more similar to each other, and because similar people are drawn to the same workplace to begin with. First, Ashforth et al. (2007) show the longstanding literature on socialization effects in the workplace. Callen et al. (2015) document peer effects of working among friends at the workplace, especially for certain personality types. Second, endogenous to working at the same location is whether a certain *type of person* is more likely to enter any one profession. Research on police (Lester 1983) and politicians (Gulzar 2021) provides further supporting evidence that it is not only *workplace socialization* that drives converging beliefs among coworkers, but that similar people are drawn to the same workplace in the first place.

Worksite sampling strategies can mitigate these biases in different ways, depending on the research question and outcomes of interest. Studies focused on outcomes at the group-level (e.g., the neighborhood, municipality, or school) are better positioned to leverage worksite sampling as a standalone sampling strategy. These types of research questions might aim to uncover respondent perceptions of public utility delivery in their neighborhood, how often the police or elected officials come to the neighborhood, or respondent knowledge about the presence of armed groups or other non-state actors in their area. Surveys where the outcomes of interest are at the aggregate level still require certain assumptions about the representativeness of the respondent vis-à-vis their area, namely, that they are aware of the average lived experience in their community, not just their own.

In contrast, studies focused on outcomes at the individual-level could also benefit the most from using worksite sampling when paired with another sampling strategy or when sampling across multiple worksites. The types of research questions that focus on individual-level attitudes or beliefs are more vulnerable to the biases induced by sampling from the same workplace. In these cases, worksite sampling is best deployed 1) as a

complementary strategy to target certain hard-to-reach groups who cannot be found or are otherwise compromised via conventional residential sampling, or 2) when sampling over multiple worksites to increase coverage across individual-level variables.

Table 1 presents a typology of how worksite sampling could be used to find hard-to-reach groups in different ways, depending on the outcomes of interest and the geographic area of interest. In this table and in the below text, I define a *geographic area of interest* as a relatively small geographic unit that would serve as the sampling units in a conventional face-to-face survey: a cluster of households, all or a portion of an urban or suburban community, or a census enumeration tract.

Table 1: Typology of worksite sampling strategies

		Level of outcomes of interest	
		Group-level outcomes	**Individual-level outcomes**
Geographic area of interest	**One specific area**	• Localized workplaces	• Localized workplaces as a complement **OR** • Multiple localized workplaces
	Many areas	• Diffuse workplaces	• Diffuse workplaces as a complement **OR** • Diffuse and diverse workplaces

Questions that focus on group-level outcomes in a specific area could be answered by sampling a *localized workplace***.** These types of workplaces are locations that are likely staffed by people who live nearby in the specific geographic area of interest, and is ideally a close substitute for conventional door-to-door sampling in an area. Localized worksite sampling might be advantageous when a research question is focused on a particular geographic area, but for issues related to question sensitivity, safety, or cost, door-to-door sampling is impractical. Examples of localized workplaces include local convenience

stores, kiosks, fast-food chains, restaurants, or bars.[2] Given that the outcomes of interest are at the group-level, the best types of localized workplaces to sample will *also* be those where the employees frequently interact with their neighbors. Workplaces where employees are frequently observing others and are attuned to the neighborhood dynamics – often in the service sector – are good places to find individuals who can report group-level outcomes.

These same types of localized workplaces can also be useful for learning about individual-level outcomes, but researchers should take more steps to mitigate bias. One way to do so is to use worksite sampling as a complement to existing sampling strategies, including door-to-door or other venue-based sampling strategies. If it is not safe, feasible, or if there are data quality concerns with door-to-door sampling of a certain subgroup, localized worksite sampling could be used to survey this niche group. Another way to learn about individual-level outcomes when door-to-door sampling is unavailable is to sample across multiple types of localized workplaces, which could increase latent variation in both demographics and "types" of workers sampled. For example, it is possible that workers at convenience stores are more likely to be of a certain gender, race, or age group. A worksite sampling strategy that pairs convenience stores with a complementary worksite – say barber shops, or nail salons – might better approximate underlying demographic coverage of the area and mitigate the bias of profession-specific responses.

Certain studies may require a comparison of hard-to-reach communities across a wider geographic area, such as an entire city or metropolitan area. Many solve this by fielding door-to-door surveys in these areas, but these are not always safe, feasible, or there may be data quality concerns. *Diffuse workplace* sampling can be used when comparing group-level outcomes across many communities. Diffuse workplaces are staffed by people who live in many different regions of the city. They are often larger and employ more people than

[2] These locations are especially likely to be localized workplaces in lower-income areas. In high income neighborhoods, it may be true that lower-wage service sector jobs like these are staffed by people commuting in and out of the wealthy area, rather than nearby residents.

localized workplaces, thus, their employees' residences will cover a broader swath of the city or metropolitan area. Diffuse worksite sampling might be advantageous when the researcher wants to sample from many geographic areas within the city while keeping enumerators in one or a small number of locations, and when the questions are focused on aggregate outcomes in the respondents' home community. Examples of diffuse workplaces include markets in the city center, central bus and train terminals, or hubs for other public services, such as the postal service or trash collection. Some employees at diffuse workplaces – for example, bus drivers, fare collectors, or garbage collectors – might have the same knowledge and capacity to comment on their neighborhood dynamics as employees in localized workplaces. For many of these professions, their assigned route is close to home, and their job is to observe and interact with their community.

When interested in comparing individual-level outcomes from respondents who live in many areas, a researcher's sampling strategy should get enough geographic breadth and individual-level variation within clusters (smaller areas). As in the case when one is interested in individual-level outcomes in one area alone, sampling at diffuse worksites can be complement to existing sampling strategies, as perhaps a low-cost way to reach respondents who live in far-flung areas, or where it is not safe to ask them certain questions in the home. An alternative is to sample *diffuse and diverse* workplaces, which employ people with a range of skills, education levels, and salary levels. These types of workplaces will also tend to be large and employ people from many different regions of the city. Examples include hospitals (employing food service workers and cleaning staff, as well as surgeons), universities, and corporate office complexes. A worksite sampling strategy focused on a diffuse and diverse workplace, such as these, might be better insulated from the bias that comes with sampling one profession alone.

3.1.1 Constructing a sample in Rio de Janeiro

I fielded a survey in May 2019 in Rio de Janeiro, Brazil, using worksite sampling. The survey was focused on investigating political campaigns in Rio de Janeiro's working-class

neighborhoods, including the more than 1,000 informal settlements (*favelas*). The goal of the survey was to document resident experiences with and perceptions of a range of political middlemen, including but not limited to armed groups. The survey focused on the recent context of the 2018 election.

There are more than 1,000 *favelas* in Rio de Janeiro, whose population accounts for approximately a third of the city's 6.2 million people. Favela residents make up a sizeable and pivotal voting bloc, and their vote can make or break an election, especially for lower-level legislative candidates who require fewer votes to get over the line. Political parties, candidates, and middlemen have taken advantage of this potential influence for decades, and it has been extensively documented in the literature, whether the middlemen are neighborhood associations (Gay 1993, 1999), religious leaders (Nascimento 2017), or criminal groups (Arias 2017; Trudeau 2022). Despite this attention in the literature, there is scant systematic evidence about on-the-ground campaigns in Rio de Janeiro's *favelas* and the different ways these middlemen go about getting votes.

My survey was focused on 1) collecting descriptive evidence about the prevalence of various types of campaign activities across low-income communities in Rio de Janeiro, and 2) collecting experimental evidence about the various types of intermediaries that get involved in elections in these communities, including armed groups. I hoped to sample residents across the city's many favelas, as well as residents of the low-income neighborhoods that are better incorporated into the city's infrastructure, the working-class residents of "the asphalt."

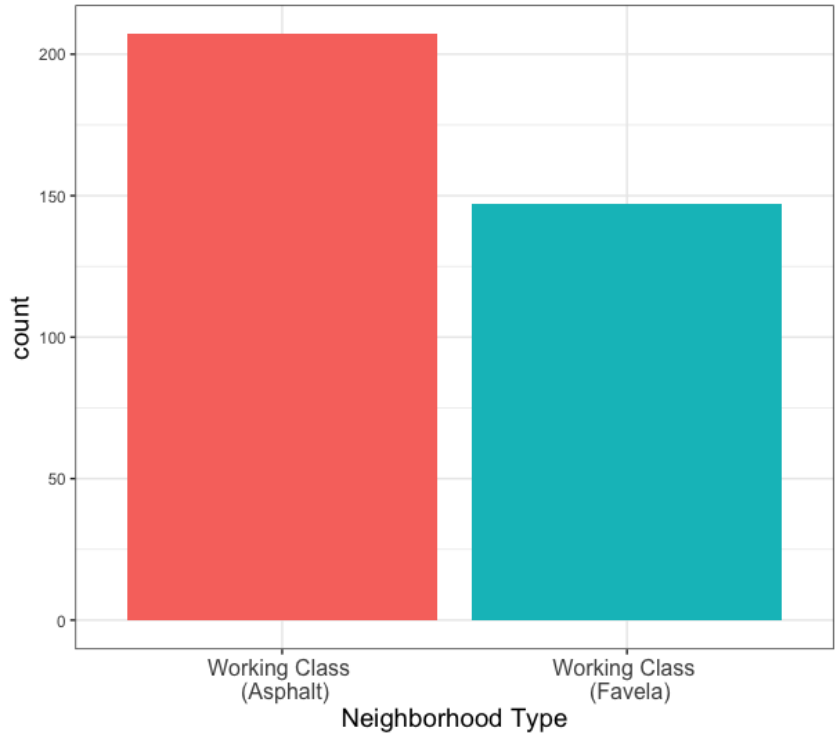
There were logistic and ethical reasons why it was unfeasible to cluster sample at the neighborhood-level. My requests for quotes were turned down by all survey firms; often accompanied by reasons related to enumerator safety in favelas or because the firms themselves did not have information about the underlying sampling frame. In some of the least developed favelas in Rio de Janeiro, certain streets are only accessible by motorcycle,

and criminal groups strictly monitor who can enter and exit the community (Perlman 2010). This is not unique to Rio de Janeiro; it is a feature of many urban areas across the developing world (Holston 2009; Murillo, Oliveros, and Zarazaga 2021; Perlman 2010). Finding these residents is similarly difficult through other survey modes: ad targeting on Facebook or other social media platforms is not available at the sub-municipal level, and the local leaders in question often control the very neighborhood Facebook groups that could be used as a dissemination tool.

Given these challenges, I decided to use a *diffuse worksite* sampling strategy, since my questions were focused on group-level outcomes in communities across the city. When looking for an appropriate worksite, I prioritized worksites that employed a) lower income individuals who lived in *favelas* or working-class asphalt neighborhoods, which were b) located across the city. Though I considered and approached several different types of employers, I ultimately sampled bus drivers and fare collectors that worked for the municipal bus company, *Rio Ônibus*. After learning about the worksite and explaining the objectives of my survey to the organization's director, I signed an agreement to collect an in-person survey in *Rio Ônibus'* parking lot in the central bus terminal in Rio de Janeiro, for a one-week period in May 2019. Over a three-day period, my team of enumerators conducted $n = 356$ interviews.

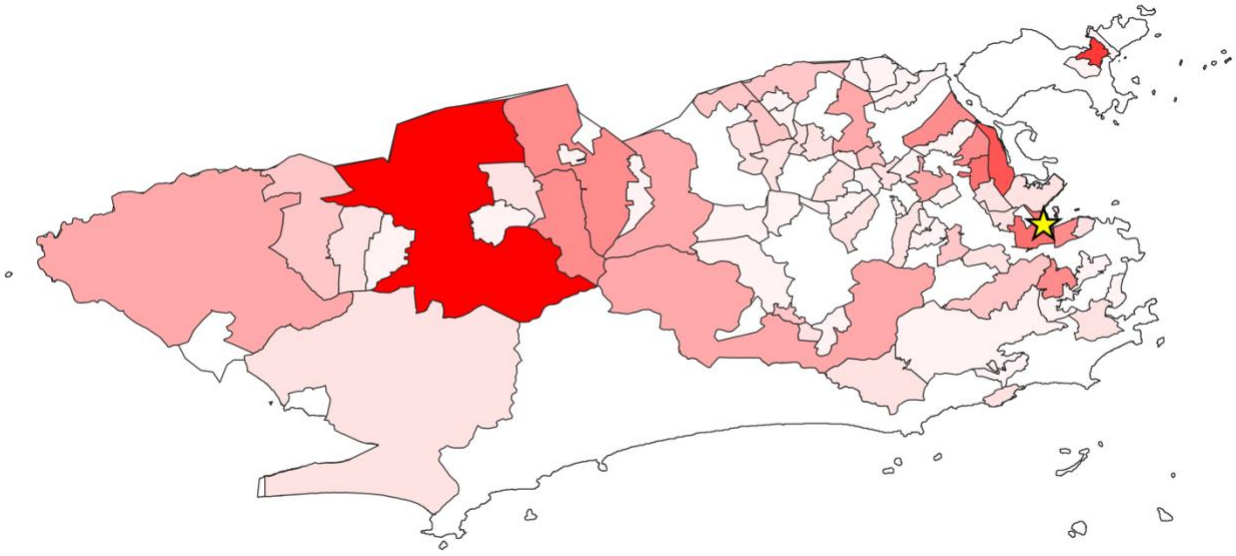
How well did this sampling strategy approximate the alternative (logistically unavailable) option of residential sampling? First, the sampling strategy appears to have sufficiently targeted the lower income individuals of interest. Bus drivers and fare collectors earn an average monthly wage of R$2,500 ($437 USD) and R$2,000 ($350 USD), respectively. These salaries are slightly higher than the minimum wage in in Rio de Janeiro (R$1,400, or $245 USD per month), but remain on the lower rungs of the income distribution. Respondents self-identified either as residents of working class "asphalt" or "favela" neighborhoods in the survey, with 41% stating that they lived in a favela (Figure 1).

Figure 1: Sample Distribution by Neighborhood Type



Second, using a diffuse worksite sampling strategy appears to have reached respondents in most neighborhoods of the city, even though the study team was stationary at the central bus terminal for the entire data collection period. Certain features of the bus driver and fare collector occupations made them ideal professions to sample from for this study design. While all bus drivers and fare collectors clock in at a parking lot to begin their route (usually near their homes), they are required to make their way to the central terminal to clock out at the end of their shift. Here, they get the bus serviced and deposit the cash box with bus fare in it, even if their shift does not end at the terminal as its final stop. Practically, this meant that there were "rush hour" waves of drivers and fare collectors flooding *Rio Ônibus'* section of the bus terminal once their shifts were over. In practice, this meant that while bus drivers and fare collectors lived in a range of neighborhoods around the city, my team of enumerators and I could reach them all while staying in the same location. Figure 2 shows the geographic distribution of bus driver and fare collector residences, by administrative region of the city. The star shows the location of the central bus terminal. Respondents in the sample were from 182 distinct favelas or asphalt neighborhoods.

Figure 2: Sample Distribution by Place of Residence



By using worksite sampling at a diffuse workplace, my survey team was able to conduct many interviews with respondents from all over the city who have a similar socioeconomic profile, all while staying in the same location. It was cost-saving and avoided the safety and logistic hurdles that made survey firms reluctant to provide a quote. Yet it was not a balanced sample, and focusing on bus drivers and fare collectors introduced some bias into the sample. Table 2 shows a balance table with sample demographics. Notably, the sample is disproportionately male: 86% of all respondents were men; women were disproportionately fare collectors. When comparing asphalt residents to favela residents, note that asphalt residents tend to be slightly economically better off than favela residents: they are more likely to be higher-earning bus drivers than fare collectors, to have lived in their current home for more years, and to be registered to vote.

I was aware of this gender bias ex ante and conducted some pilot interviews with bus drivers prior to launching the survey. In these scoping interviews, I assessed their comfortability and knowledge in speaking about neighborhood-level dynamics. These interviews suggested that not only did they know what life was like in their neighborhood, but there are few who are more observant than a bus driver, who is watching and noticing

people in their area all day long. My focus on neighborhood-level outcomes rather than individual-level outcomes mitigates some of the bias induced by the gender imbalance.

Table 2: Sample Demographics, by Place of Residence

	Working Class (Asphalt)	Working Class (Favela)
Average age	43.46	43.39
Proportion Male	0.89	0.83
Proportion Black	0.22	0.28
Proportion Bus Drivers	0.86	0.79
Proportion Long-term Resident	0.69	0.63
Proportion Registered to Vote	0.70	0.66

3.2 Using worksite sampling to elicit truthful answers

Worksite sampling can be more than a useful sampling method. It might also be a useful strategy to better elicit answers to sensitive questions and improve response quality.

The demographic literature suggests that the interview location itself can influence how hard to *persuade* or hard to *interview* potential respondents can be (Tourangeau 2014). These types of individuals might fear being observed at certain locations and less willing to participate or disclose truthful answers during the interview (Berry and Gunn 2014). Common examples include the reluctance for victims of domestic violence to talk about the violence while in the home, or residents in authoritarian states to criticize the government in public. In response to these concerns, worksite sampling could be used to alleviate the sensitivity of common questions that are tied to the place of residence. Berry and Gunn (2014) suggest that sampling at certain locations where hard-to-reach groups gather might motivate participation, including but not limited to the workplaces.

Worksite sampling (and other venue-based sampling strategies) is another strategy that can be used to better elicit truthful answers to sensitive questions. Other strategies that are widely used include the list experiment (Blair and Imai 2012) and randomized response technique (Blair, Imai, and Zhou 2015). But as Blair et al. (2019) show, the bias-variance tradeoff introduced in these indirect questions is so large that it is often better to ask directly, if at all possible. If the different setting from worksite sampling makes a sensitive question less so, it be a way to ask questions directly without generating additional noise.

3.2.1 Asking sensitive questions in Rio de Janeiro

In addition to several non-sensitive questions about campaign activities, I asked my sample of two types of sensitive questions: direct and indirect. First, I asked direct questions about respondent crime victimization. I used the exact same language as the LAPOP 2018 AmericasBarometer:

> *"Have you been a victim of any type of crime in the past 12 months? That is, have you been a victim of robbery, burglary, assault, fraud, blackmail, extortion, violent threats or any other type of crime in the past 12 months?"*

On average, 43% of working-class asphalt residents had been victims of crime in the past year, while 36% of working-class favela residents had, shown in Figure 3.

I compare my results to similar LAPOP respondents across Brazil who were interviewed at their homes. Since LAPOP surveys are not representative at the local level, a direct comparison of victimization reporting cannot be made between my survey and their face-to-face survey of the same group within Rio de Janeiro.[3] I construct an additional comparison group from the LAPOP data, drawn from across Brazil and selecting on the following variables: 1) I drop LAPOP female respondents, since my sample is disproportionately male, 2) I drop respondents who do live outside of large cities, and I drop respondents who earn more in monthly wages than the bus drivers in my sample.

[3] Only n = 18 respondents in the 2018 Americas Barometer have a similar profile to the bus driver and fare collector sample from Rio de Janeiro.

While the LAPOP survey does not directly ask about favela residency, I use the household item question "Do you have a washing machine in your household?" as a proxy for favela residency. Washing machines are widespread, even amongst the working class in cities like Rio de Janeiro, but they are less common in favelas because the infrastructure will not support their installation and use.

Figure 3: Crime Victimization, by Place of Residence

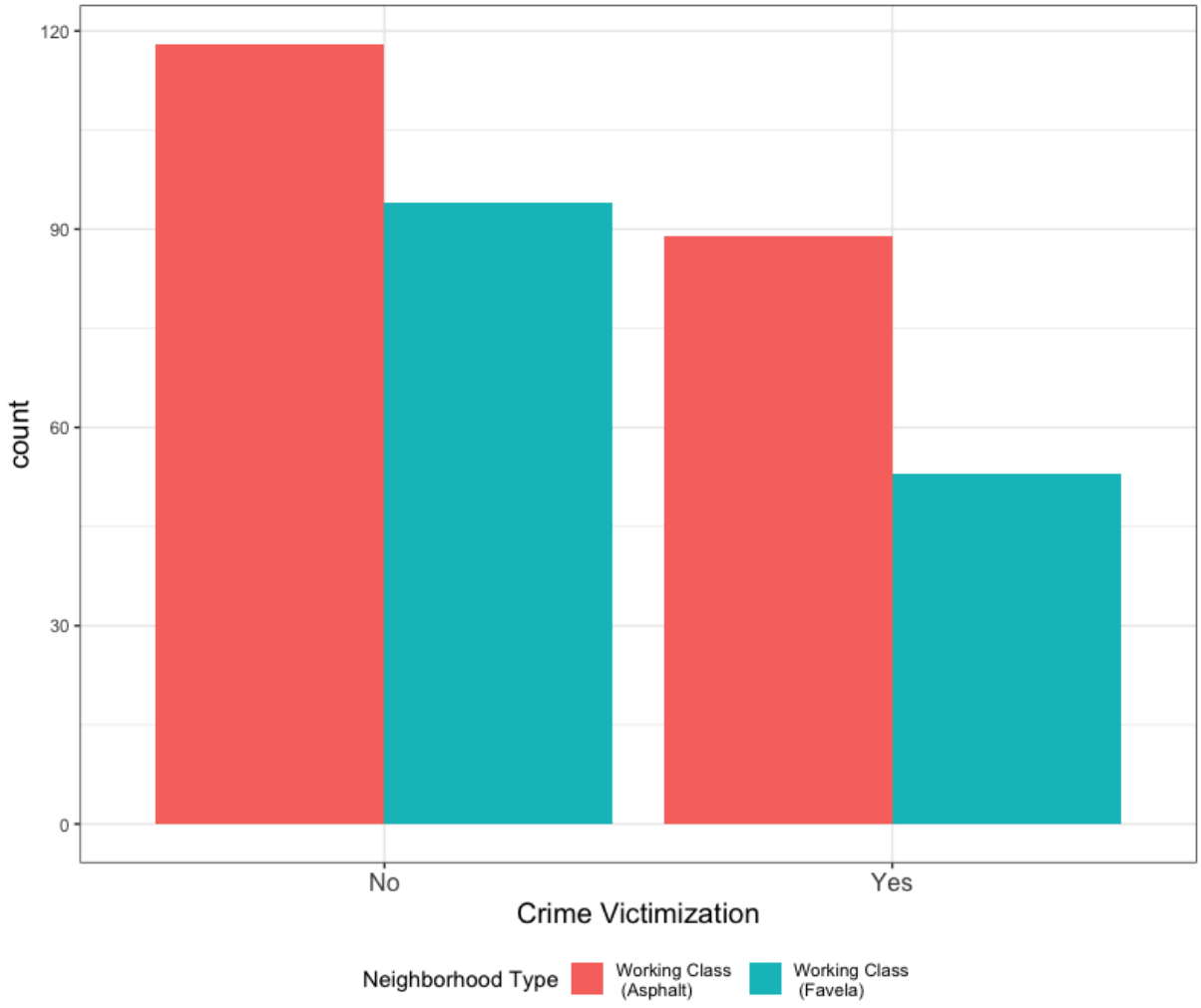


Table 3 presents the results of this comparison. The first point to note is the crime victimization among my sample of bus drivers and fare collectors was higher, on average, than that in the Brazilian comparison group and the Rio de Janeiro-specific comparison group. The second point to note is that the difference in levels appear similar: in other

words, the crime victimization trends between favela- and non-favela working class residents is the same when considering my sample and those in the favela- and non-favela proxied groups elsewhere. There are several reasons why victimization might be higher among my sample, most importantly, crime frequently happens on buses, and Rio de Janeiro is a more dangerous city than the average large city in Brazil. Either of these concerns suggest that the underlying incidence of crime is greater for my sample, providing supporting evidence that the worksite sampling survey elicited truthful answers to direct questions.

Table 3: Crime Victimization vis-à-vis the LAPOP 2018 Sample

	My survey sample (n = 356)	**LAPOP, comparison group in Brazil (n = 159)**	**LAPOP, comparison group in Rio de Janeiro (n = 18)**
Crime victimization: favela residents	0.36	0.18	0.20
Crime victimization: asphalt residents	0.43	0.30	0.23

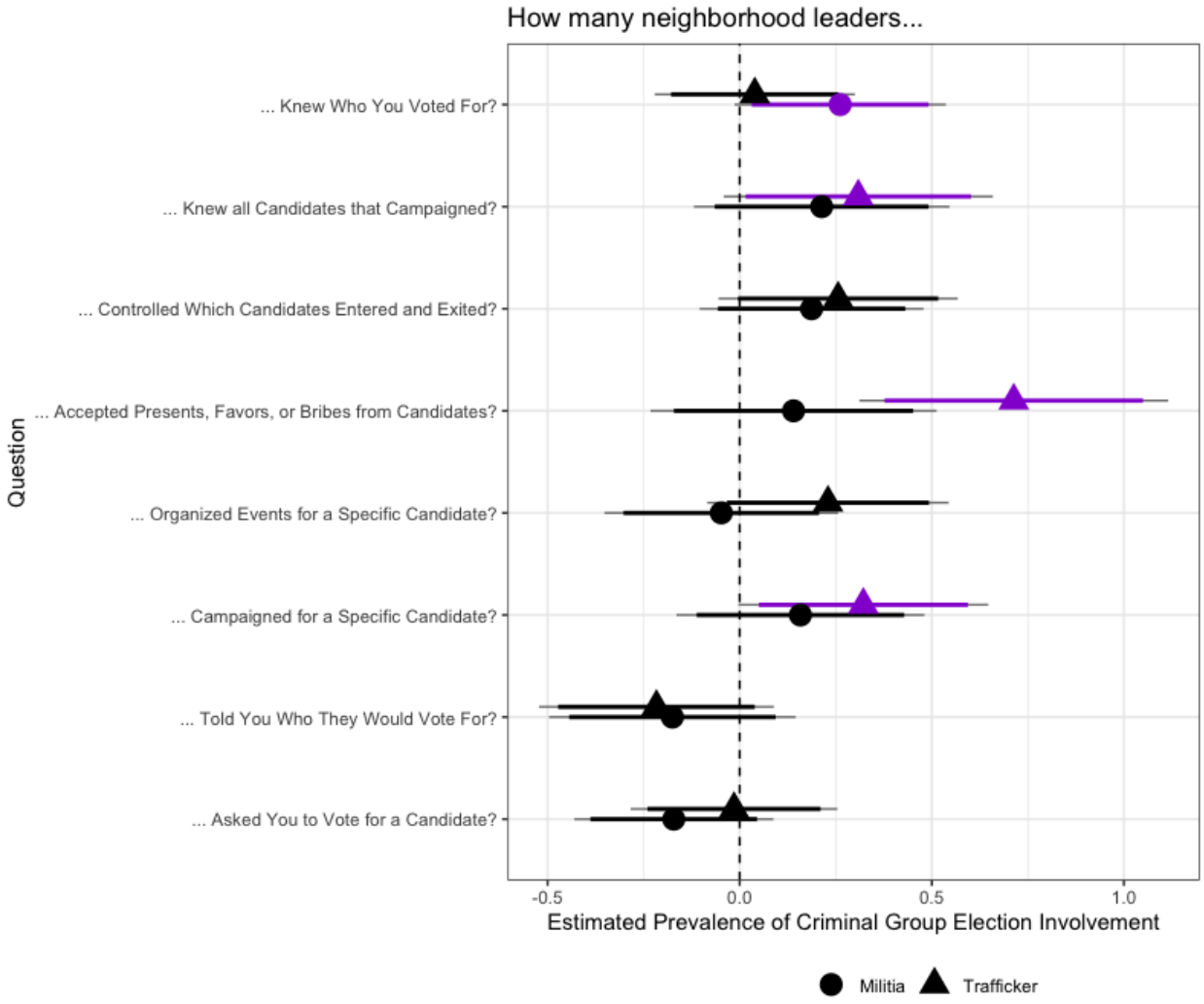
Second, I also conducted a list experiment to indirectly ask respondents about armed groups as intermediaries during elections. Despite the noise that such methods generate, the nature of the question is extremely sensitive and I opted for an indirect question style as well as the added protection of asking respondents at their workplace rather than their homes, where they may have feared the retaliation of armed groups or where enumerators might have been put in harm's way (Davis and Wilfahrt 2024).

The list experiment had two treatment arms and one pure control. All items shown in the list experiment to the control group were intermediary groups that could active during political campaigns in Rio de Janeiro: churches, neighborhood associations, teachers unions, the police, and the military.[4] The first treatment arm was shown the additional group "drug traffickers," and the second treatment arm was shown the additional group

[4] Though the military is a very unlikely intermediary in low-level elections, I included them following the advice of (Blair, Imai, and Lyall 2014) to avoid floor and ceiling effects.

"milícias," vigilante-style paramilitary organizations that are widespread across Rio de Janeiro. As is conventional, I asked respondents to consider the given list of groups and respond to questions stating only the total number of groups, not which ones. All questions prompted respondents to think about the dynamics in their own neighborhood.

Figure 4: List Experiment Results



The list experiment questions focused on a range of specific behaviors related to voter mobilization and campaigning. Figure 4 reports difference-in-means between both treatment arms and the control group. Broadly, the results suggest that respondents in my sample believe milícia leaders are more likely to engage in monitoring, while they believe drug trafficking leaders are more likely to forge electoral relationships with candidates.

Respondents were more likely to think that milícia leaders knew who they voted for, but they were more likely to think that trafficking leaders knew all candidates who campaigned in the area, accepted presents, favors, or bribes from candidates, and were more likely to campaign for a specific candidate. I found no evidence of either group trying to verbally persuade residents to vote for a certain candidate.

3.3 Ethics and safety for respondents and interviewers

Finally, worksite sampling can be used to better protect respondent and enumerator safety, especially in violent or insecure settings. Increased attention is being paid to survey research ethics beyond the IRB protocol, and how being interviewed can have lasting effects on respondents (Fujii 2012; Jaffe et al. 2015) and enumerators (Davis and Wilfahrt 2024). This is especially true in conflict settings (De Juan and Koos 2021; Moss, Uluğ, and Acar 2019; Wood 2006).

In these conflict settings, armed groups (rebel groups, criminal organizations, or other) that govern might be skeptical or hostile to researchers asking questions about their governing behaviors. They may attempt to monitor and control participant responses, or worse, retaliate or punish respondents for participating in the interview. Using worksite sampling could be a way to speak to individuals who live under armed governance honestly and safely in a different setting, far from their home.[5] It is possible that there are some settings where these questions might never be justifiably low-risk to ask, either in the home or at the workplace. Care should be taken to ensure that, if workplace sampling is used to ask about conflict, violence, or armed group governance, it is not just "marginally safer" than asking about it at the home, but is sufficiently low-risk to proceed.

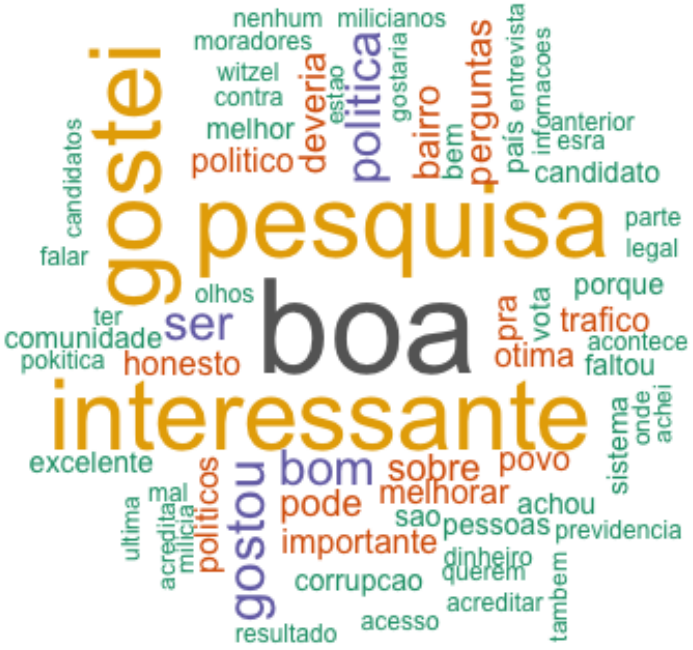
3.3.1 Example: protecting respondent and enumerator safety in Rio

[5] As in the survey I conducted, this might be especially likely in "diffuse worksites" that are not within the same criminally- or rebel-governed territory.

[1 – in progress – explain arrangements with Rio Ônibus boss and security at bus terminal; effect on a) enumerators and b) respondents]

[2 – in progress –qualitative respondent reactions to survey emphasizing importance of topic and rare opportunity to share their views]

Figure 5: Open-ended Reaction to the Survey



Conclusion

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