

INVESTIGATING THE DEEP: A Research Proposal on Capacity Building in Haiti

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1 Introduction

However one looks at it, the capacity of the Haitian state is very low. The state raises a paltry amount of tax revenues: they account for less than 10% of national income. The state also has low information capacity. There is effectively no proper land cadaster, so it is not known who owns what; few people have official titles to their property. As a result, Haitian society is not “legible” to the state (Scott, 1998), which impedes public sector effectiveness. The state also lacks regulatory capacity. One of the causes of the terrible loss of life during the 2010 earthquake was the fact that building regulations had not been enforced; unregulated informal settlements had sprung up everywhere, and these were leveled in the quake. The lack of a credible estimate of the number of people who were killed in the earthquake—estimates range from 100,000 to over 300,000—is itself a reflection of the lack of state capacity and the illegibility of society. Finally, the state lacks capacity to provide public goods. For instance, a basic role of the state is to provide and maintain public infrastructure. Yet the construction of roads is governed by a Policy Implementation Unit that is funded and governed by donors, while maintenance is under the Ministry of Transportation and Public Works. There has been construction of new roads, but maintenance seems a rare occurrence.

How should would-be reformers tackle a situation like this? The first relevant observation is whether it is worth tackling at all. A large academic and policy literature has emphasized that there are good political economy reasons why states choose not to develop capacity, and many of these arguments certainly apply in Haiti (Robinson and Weigel, 2018). Yet there is also reason to believe that the current moment in Haiti is a window of opportunity in which the political incentives and constraints are different from what they have been in the past—and, importantly, not inconsistent with building state capacity.

In thinking about where to start, it is worth remembering that the Haitian state is composed of individual human beings who respond to incentives, if these exist, and who also look for self-worth and meaning in their lives (as recent work in behavioral economics re-

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minds us). Building capacity necessitates improving incentives and opportunities—changing institutions—while also being sensitive to the human side of motivation.

At this micro level, then, there are likely five reasons why productivity is so low in the Haitian civil service:

1. **Public sector pay is too low.** This means that it is hard to attract skilled workers. Moreover, because of the absence of pensions, people do not retire, creating a kind of low-human-capital trap.
2. **Public sector pay is not linked to productivity.** This erodes incentives to exert effort among civil servants.
3. **There is a lack of relevant complementary inputs.** Even skilled workers will be hamstrung in their work without electricity, computers, air conditioners, etc, and by all accounts the Haitian civil service is greatly lacking in these inputs, especially after the 2010 earthquake.

These are non-controversial points. Yet recent research suggests that these basic features of building state capacity unlikely to solve the problem without complementary efforts to address behavioral and social factors that impact bureaucrat productivity. For example, monetary incentives, even if introduced, can crowd out intrinsic motivation, which is likely critical in the public sector because many aspects of bureaucrats’ work and outputs are difficult to observe. Relatedly, high wages may encourage the “wrong sort” of person—less intrinsically motivated or “prosocial” individuals, for example—to select into the public sector.¹

Crucially, these basic approaches to state capacity building ignore two fundamental determinants of bureaucratic performance: patronage networks and “practical” social norms.

First, there is near consensus that the patrimonialism of the state in settings like Haiti and sub-Saharan Africa is a major impediment to institution building and development (Bratton and Van de Walle, 1994; Lindberg, 2003; Arriola, 2009; Young and Turner, 2013). Rather than “rational-legal” procedures governing modern bureaucracies, patrimonial institutions are based on patron-client relationships. In patrimonial organizations, individuals are hired because of connections not merit; they are paid according to connections and loyalty; they are fired or promoted based on connections and loyalty. Despite how commonly this view is held among scholars and policymakers, there exists no rigorous empirical characterization of a patrimonial state, nor are there estimates of the costs of such a state. Our field work led us to believe that the Haitian public sector is also government by patron-client relations. We propose to study the role of patronage networks in Haiti and their effects in moderating effects of the IADB’s institutional reforms.

Second, a large ethnographic literature on bureaucracy has emphasized the critical role of social norms in influencing bureaucratic behavior and performance. The research of anthropologist Pierre Olivier de Sardan is of particular relevance.² He coined the term “practical norms” to emphasize that these norms are not simply a function of “culture” but emerged re-

¹See Robinson and Weigel (2018) for a review of recent work in this area.

²We discuss this literature in detail in Robinson and Weigel (2018).

cently in the colonial period to govern “appropriate behavior” in “modern” state institutions (De Herdt and de Sardan, 2015). De Sardan and his collaborators emphasize two general practical norms that they find very pervasive in sub-Saharan Africa: “this is not done here” and “you shouldn’t over-do it”. The first norm particularly applies to disciplining people. The empirical studies illustrate that bureaucrats continually violate the formal rules but are not sanctioned because “this is not done here”. It is worth pointing out that if this norm is prevalent in Haiti, as our field work suggests, this in itself immediately undermines the hope that simply linking pay to performance will improve state capacity. Without a credible threat of punishment, such a scheme cannot actually influence incentives. The second norm also applies to rule violations: it is acceptable to steal a bit, but “you shouldn’t overdo it”; it is acceptable to misuse public assets and resources, but “you shouldn’t overdo it”; it is acceptable to be absent from work, but “you shouldn’t overdo it”. Such norms obviously impose severe constraints on what reforms to formal institutions can hope to accomplish.

To summarize, we would therefore add two additional reasons why Haitian civil servants are low productivity to the above list:

4. **Patronage networks.** Patron-client relations dominate the public sector, implying that the effects of a given reform will depend significantly on its implication vis-a-vis the patronage network.
5. **Practical norms.** Such social norms militate against the formal rules and constrain institutional reforms.

We believe the evidence suggests that changing 1, 2, and 3 in the first list is unlikely to work unless one also deals with 4 and 5. The IADB’s current focus is on reasons 1-3 above, starting with parts of the Ministry of Transportation and Public Works and the Ministry of Agriculture, specifically the units dealing with road maintenance and animal vaccinations, respectively. These are important public goods, and it makes sense to start small and learn about the fruits of the interventions. Nevertheless, we believe that to study the impact of these reforms, it is necessary to measure the practical norms and the patronage networks operating in the two ministries. For example, the response of bureaucrats to a changing pay structure will depend on the norms and network in which they are embedded.

2 Research Design

To understand the effects of the IADB’s reforms, we propose a two-part research design. First, we will conduct a survey with all employees of the Ministries of Transportation and Agriculture. The purpose of the survey is to map the patronage networks and measure practical norms at play in these ministries. We will then choose a subsample of employees and revisit them periodically over the course of the IADB’s reform to construct a panel. This survey will enable us to test a number of key hypotheses about the impacts of the IADB reforms and their interactions with norms and networks. Second, we propose a Group Decision Making intervention seeking to change the social norms and boost morale in certain offices of these two ministries. This intervention will likely have spillover effects, complementing the other IADB interventions.

Our main outcome variable for this analysis will draw on the planned biometric system the IADB plans to put in place. We assume all offices in these two ministries will be equipped with biometric check-in/check-out systems that will provide accurate individual-level measures of absenteeism/effort. We will supplement this outcome with real outcomes from the IADB’s initiatives in the road maintenance unit and animal vaccinations unit.

Importantly, our research design concerns *all employees* of the two ministries, not just those in the two units most concerned by the IADB’s reforms. This is necessary in order to map the social network and to ensure we have sufficient power to evaluate the impact of the IADB reform. Ministry-wide analysis will prove helpful if the IADB seeks to expand the scope of the project in the future, as it will enable us to identify specific offices and units that would benefit most from salary increases and other institutional changes.

2.1 Social network and norm survey

The main aspect of our research strategy would involve mapping the social network of all employees in the ministries of transportation and agriculture as well as measuring practical norms. Using recent innovations in social network analysis, we can construct the patronage network of the civil service by conducting a short survey with all employees of these two ministries. The survey would ask a series of retrospective questions about how they heard about their position, when they were hired, who they report to, how much they are paid, etc. We would verify as much of this information as possible using administrative data on salary grades, etc.

Using the social network survey, we would construct a series of network statistics for individuals and groups in the civil service, leveraging the notion of a ‘key player’ and ‘key group’ (Ballester et al., 2006). More specifically, one can define a “patron” as a civil servant with high network centrality whose de facto network is not congruent with the de jure organizational network reflected in the organogram. Then we define the “patronage network” as the social network of such a person, and a “client” to be a person in this network. Our survey thus seeks to map the de facto networks of power as distinct from the de jure hierarchy of the formal bureaucracy.

The survey would also build on the work of De Sardan and coauthors in measuring practical norms. A series of vignettes would elicit bureaucrats expectations in certain situations, for instance if a civil servant is found to be stealing or fails to come to work for an extended period of time. We would also leverage advances in measurement in the social psychology literature to document these norms (Paluck, 2009; Ross and Nisbett, 2011).

We would use the social network survey to test several key hypotheses about patrimonialism in the public sector. First, we will test hypotheses that individuals who are closer to a central individual are more secure in their job and thus have less strong incentives to exert effort; these individuals may also receive higher salaries and may be promoted more often relative to individuals without strong patronage links in the network. Second, we will study heterogeneous effects of the exogenous shock represented by the new biometrics system. If the biometric system is a success, then by our understanding, it will undermine the ability

of patrons to pay clients in the civil service network. Rather, pay will be determined by pay grade only, and it will be harder for one individual to collect multiple salaries (as is reported to occur currently). The implementation of this system reduces the value of patron relationships, which leads to a key prediction: connected individuals (who were protected in the old patronage system) will need to increase effort under the new biometric system; non-connected individuals will be less affected because they could never depend on connections but always had to produce some kind of results to keep their job. This prediction can be estimated with a difference-in-difference strategy:

$$Effort_{it} = \beta_0 Connected_{it} + \beta_1 PostBiometrics + \beta_2 Connected_{it} X PostBiometrics + u_{it} \quad (1)$$

The coefficient of interest is that on β_2 , capturing the impact of the biometrics program on connected workers, which is anticipated to be statistically greater than the impact on non-connected workers.

A second vein of analysis considers the impacts of pay rises conditional on network position. As noted above, one would expect pay rises to have little effect on individuals who are well connected in a patronage network, whereas they should have a strong effect on individuals without a patron who are judged on merit. Exploiting a similar setup to equation 1, we can test this hypothesis by estimating:

$$Effort_{it} = \beta_0 Connected_{it} + \beta_1 PayRise_{it} + \beta_2 Connected_{it} X PayRise_{it} + u_{it} \quad (2)$$

We would expect $\beta_1 > 0$ —unconnected bureaucrats will increase effort following a pay increase—and $\beta_2 < 0$ —connected bureaucrats will not increase effort.

A third way we will use the social network survey is to study the network effects of retiring individuals and replacing them with new non-patronage hires (i.e. individuals whom the IADB has authorized for the replacement of retired civil servants based on merit-based criteria). In essence, the IADB program to retire older civil servants will disrupt the patronage networks within these ministries. Having mapped the original networks, we can examine what happens when a related peer in the patronage network is replaced by a merit-based hire. Do the other patronage hires who were connected to the retired individual exert more effort now that the position is hired by a merit-based hire?

We will differentiate standard “peer effects”—the impact of higher productivity individuals on low productivity peers—from the network effects of these new hires by leveraging our measures of network centrality. We can estimate the peer effect by examining the average productivity increase of adding a merit-based employee to a given office. We can then estimate the network effect by estimating heterogeneous externality effects by network position (e.g. centrality, or specific links to the retired individual). For instance, consider the effort of individual i in office o at time t :

$$Effort_{iot} = \theta_i + \beta \theta_{-iot} + \lambda_o + \gamma_t + u_{iot} \quad (3)$$

where θ is worker productivity fixed effects, and λ and γ are office and time fixed effects, respectively. θ_{-iot} the average productivity of other workers in worker i 's office. We will estimate changes in effort due to changes in the average productivity in workers stemming from the IADB's plan to retire workers. Thus, we will estimate a first difference version of equation 3:

$$\Delta Effort_{iot} = \alpha + \beta \Delta \theta_{-iot} + u_{iot} \quad (4)$$

where β here represents the increase in effort by worker i caused by an increase in the average productivity in office o due to the IADB reform. When a new merit-based hire enters a team, this will likely increase the θ_{-iot} on the team, which will have positive externalities on the effort levels of other workers in the office if the dysfunctional and patronage-based equilibrium is (even temporarily) disrupted. We will estimate and report changes in beta over the course of the IADB project to get a sense of whether any observed changes are short-lived or durable over time.

One challenge to this analysis is that compositional changes due to the retirement program will likely be endogenous to worker productivity: older and less productive individuals will be retired. This introduces a selection effect into the estimation separate from the effects of norms and networks. To obtain quasi-exogenous variation in the quality of peers, we will conduct an intent-to-treat analysis by exploiting the fact that older workers are more likely to be replaced and retired than younger workers. Ideally, there would be a cutoff, whereby anyone over the age of 80 would be offered a retirement package. Then we could instrument retirement with a treatment that equals 1 if the individual is older than 80, and otherwise equals 0. To strengthen this "first stage" regression further, we could randomly distribute packets of information among eligible individuals explaining the benefits of retirement. Additionally, conditional on sample size, we can run a regression discontinuity exploiting an age cutoff (80 years). This would likely be powered if we can conduct this analysis in both ministries.

We will leverage the social norms modules in our civil servant survey in similar ways. For instance, as noted in the introduction, institutional changes will fail to motivate effort unless there is a credible threat of punishment. Our survey will elicit the extent to which practical norms mean that people are seldom punished ("This is not done here") in certain offices relative to other offices. We will measure heterogeneous effects of the IADB's reforms with respect to such practical norms. Implementing a series of biometric attendance takers, for example, should have no effect in units with strong practical norms against punishing civil servants. We can conduct a difference-in-difference analysis of the effects of instituting a biometric check in system:

$$Effort_{iot} = \beta_0 Norms_{ot} + \beta_1 PostBiometrics + \beta_2 Norms_{ot} X PostBiometrics + u_{iot} \quad (5)$$

where again the coefficient of interest is β_2 , capturing the effect of the biometric reform in offices with dysfunctional practical norms ex ante. We would expect no difference in effort

in offices with dysfunctional practical norms. Note that to measure effort in this case we cannot use biometric data for this analysis since the implementation of the biometric system is the “treatment” here; we will therefore use random absenteeism checks (as discussed in the next section).

We can similarly test the extent to which pay increases trigger effort only in the absence of dysfunctional norms that erode the credibility of threatened sanctions for poor performance, which is one of the main predictions of standard models (Shapiro and Stiglitz, 1984). Here we would re-estimate equation 2 substituting $Norms_{ot}$ in the place of $Connected_{it}$. Again the prediction is that the pay rise will stimulate effort only in offices with functional norms; it should have no effect in offices where there is no credible threat of punishment.

We will also exploit variation in norms to generate predictions about the heterogeneous treatment effects of retiring individuals and replacing them with higher-quality merit-based hires. Our identification strategy would be the same as in equation 4 above (including the ITT approaches). We would estimate if there is a larger increase in the beta coefficient (the peer effect coefficient) in teams with dysfunctional practical norms *ex ante*. That is, in groups with functional norms, we do not anticipate a large peer effect from retirements. But in groups with very dysfunctional norms, the replacement will constitute a larger shock to norms, triggering a disproportionately large peer effect.

2.2 Social norms intervention

The other component to the proposed study is a social norms intervention, known as Group Decision Making (GDM). A seminal idea in social psychology first elaborated by Kurt Lewin, GDM is simply a series of meetings aimed to encourage participation and collective deliberation. Lewin’s original experiments found that organizing structured sessions with workers and management, in which they discussed obstacles as well as solutions, could considerably boost productivity and output (Lewin (1947)). The idea has been widely explored in other contexts (Ross and Nisbett, 2011), including recently in factories in China (Paluck and Wu, 2016).

We propose organizing GDM meetings in the ministries of agriculture and transportation in an effort to empower civil servants and improve morale. Social psychologists discuss possible mechanisms behind Lewin’s original findings, including information transfer, individual empowerment, and collective empowerment (Paluck and Wu, 2016). All of these are potentially relevant in the Haitian bureaucracy, a place where morale is low and few civil servants appear motivated by an intrinsic desire to do their job and advance the common welfare in Haiti. Hosting a meeting of this nature would give bureaucrats a chance to speak to their own grievances; they would be heard by their superiors. The conversation would be structured by trained facilitators in order that both sides might engage meaningfully with the other.

Another important insight from social psychology is that GDM-style interventions have the greatest change at shifting norms and behavior when individual members have incorrect beliefs. A powerful recent example of this comes from Bursztyn et al. (2018). The researchers surveyed Saudi Arabian men about their views of female labor force participation (FLFP) as

well as their expectations for other men’s views on this topic. They found that men grossly overestimated how conservative other men are on this topic. Providing information about the true rate of support for FLFP subsequently led many men to let their wives sign up for a work search service.

Might Haitian civil servants have incorrect beliefs about the norms and beliefs of other civil servants? The work of Olivier de Sardan and coauthors suggests as much. They note that almost everyone in the public sector in Africa bemoans the poor practical norms, but they individually throw their hands up and abide by them. In other words, civil servants are trapped in an equilibrium that is collectively undesirable. Our field work in Haiti convinced us that the same is true in Haiti. This situation implies large potential gains from a GDM intervention. During meetings with other civil servants and bosses, individual bureaucrats will learn that in fact others do not prefer this equilibrium, but in fact many of them would prefer a more functional and meritocratic set of work rules, in which individuals are rewarded for quality work not loyalty to patrons. The meetings would be a chance to shift the equilibrium.

To operationalize this intervention, we would identify and work with an NGO in Port-au-Prince that has experience conducting facilitations of this nature. We would first train their facilitators on the specific (and straightforward) procedures of GDM. Then we would randomly invite bureaucrats from the two ministries to participate in a series of GDM sessions. We could study the intent-to-treat effect of the invitation:

$$Effort_{io}^{POST} - Effort_{io}^{PRE} = \beta_0 + \beta_1 T_i + \beta_2 Effort_{io}^{PRE} + u_{io} \quad (6)$$

where T_i is an indicator that individual i was randomly selected to receive an invitation to the GDM intervention. Here β_1 estimates the average causal effect of the GDM invitation. We could also estimate a two-stage least squares equation system to estimate the effect of *attending* the meeting, under the assumption that the only effect of the invitation goes through participation in the meeting. This seems a fairly innocuous assumption. One possible exclusion-restriction concern is receiving the invitation could be perceived as a warning or signal of some kind from a supervisor. We could test this by cross-randomizing a placebo invitation to a meeting on a different subject unlikely to affect effort. Alternatively we could eliminate compliance issues almost completely if the state mandates participation for selected individuals.

Spillovers are important to estimate in this context. We would thus vary the level of randomization such that in some offices all individuals are invited to the meetings, while in other offices only some individuals are invited to the meetings. In still other (control) offices, no bureaucrats will be invited to the meetings. This approach will enable us to measure spillovers within offices (due to random variation in the number of treated individuals per office, from 0% to 100%). It will also let us disaggregate an individual versus group empowerment mechanism. An individual empowerment mechanism implies the productivity gains to an office would be linear in the number of participants in GDM. By contrast, a group empowerment mechanism implies nonlinearities, which would be straightforward to detect due to the natural random variation from our invitation procedure. Finally, we can exploit

the full mapping of the Haitian social network to examine what happens to a control bureaucrat when a closely related bureaucrat, or indeed a central bureaucrat, is treated. It is possible that by strategically inviting the most central individuals in the network, one could maximize the effects of GDM norm change.

In addition to being theoretically interesting given the unstudied nature of social norms and practical norms among civil servants in development countries, this GDM intervention has the potential to be highly cost effective. If organizing a series of meetings could trigger analogous productivity gains to those documented in Lewin (1947), this intervention could have a large impact for very low cost.

2.3 Measurement of bureaucrat effort and performance

Measuring bureaucrat performance is challenging. We have two main approaches to measuring bureaucrat effort. First, we propose that all offices in the two concerned ministries receive a fingerprint check-in/check-out system to track attendance in the office. This simple control intervention would provide an object measure of attendance among bureaucrats. It has already been used in Haiti, for example in certain grocery stores. Workers simply touch their fingerprint when they arrive in the morning and when they leave at night. Although bureaucrats could leave for long periods of the day—and thus we propose complementary measures—simply this system would go a long way in measuring effort and performance.

Second, we would conduct random (unannounced) visits of offices and measure who is present and absent. These visits would be used to find civil servants to survey for our main research instrument. However, they will double in capturing the presence or absence of difference civil servants at different times of the day at multiple occasions. Importantly, this measure will complement the biometric check-in/check-out system because we will learn if individuals are signing in and then leaving for large portions of the day before returning in the evening.

In addition to these measures of bureaucrat effort, we will obtain objective measures of bureaucrat performance thanks to the specific units of ministries involved in the IADB's projects. That is, we will obtain measures related to road maintenance and animal vaccinations. For road maintenance, we will arrange independent audits of road quality, following the approach of Olken (2007). For animal vaccination, we will need to consult with experts in the IADB ministry to learn if there are objective measures related to vaccination that we can exploit. For example, if all vaccinated animals are tagged in a certain way, we could measure the presence or absence of these tags. Both measures would provide convincing objective indicators of bureaucrat performance. Although not available for the full sample of the proposed evaluation (which would concern all workers in the two ministries, not just the specific units concerned for the IADB project), we could correlate these with the aforementioned measures of effort.

2.4 Sample and power calculations

The network and norm survey would be administered to all 1,800 individuals in the Ministry of Agriculture and 1,427 individuals in the Ministry of Transportation and Public Works. This is a total sample size of 3,227. As noted, this is necessary in order to map the full social network. After the initial survey, we would randomly sample a subset of individuals with whom we could conduct repeated surveys in order to construct a panel and measure changes in effort and norms over time.

Given the novelty of the project, it is difficult to estimate precisely the variances of key parameters necessary for power calculations. However, we nonetheless sketch several scenarios, using Optimal Design and other power calculation tools. First, consider the analysis of the social norms intervention. As this is a randomized experiment, it is the most straightforward to estimate its power to detect effects on effort. Figure 1 below shows that with a sample of 3,227 (as intended), we should be able to detect effects of less than 0.15 standard deviations with power of 0.9. This is promising.

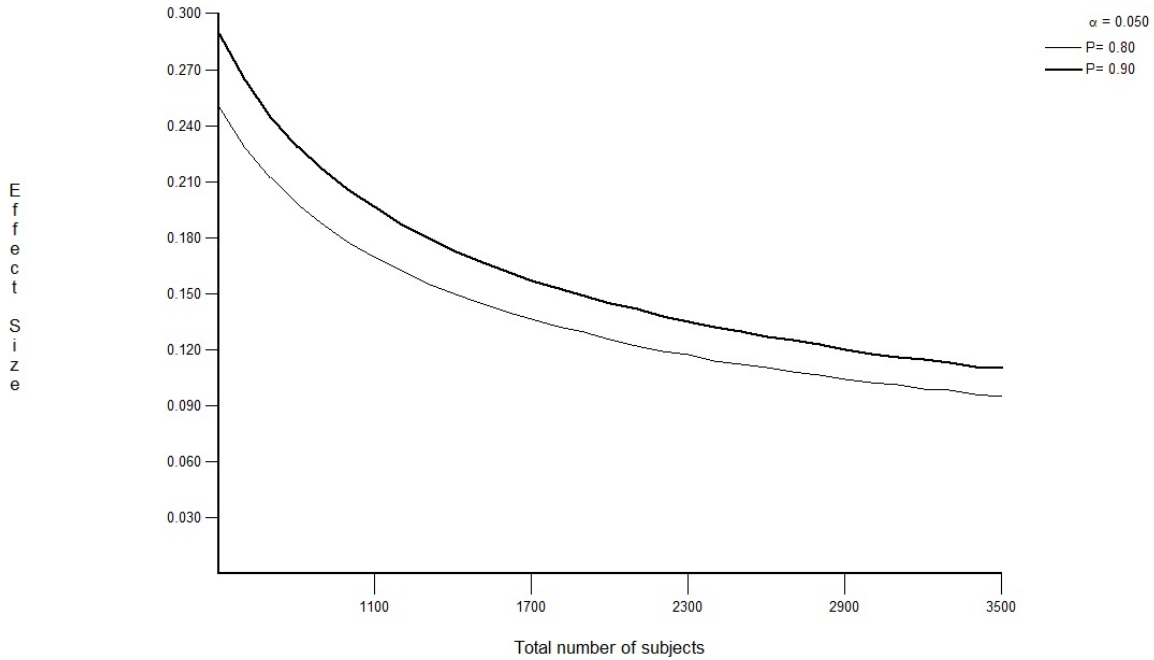


Figure 1: Naive power calculations (no design effect).

However, these naive calculations assume away the existence of clustered shocks to effort, which are likely in this context because different offices have different norms and work cultures that will have a large impact on individual-level effort. Adjusting the power calculations for the so-called design effect requires us to assume at what level norms vary. Without having begun measuring social norms, it is difficult to say. They could vary on the office level or on the unit level — or on some over level. For completeness, we run two estimations, each assuming now that we are assigning treatment on the cluster level (i.e. inviting whole offices to the GDM session). As noted, we plan a mixed sampling strategy, in which sometimes whole offices are invited and other times only individuals are invited. So one can think of Figure 2 as a lower bound on power, and Figure 1 as an upper bound on power.

First, we assume that the shocks to effort are correlated primarily on the office level and that offices consist of on average about 10 individuals. In this case, we have effectively 320 clusters ($J = 320$). Second, we assume that units are the level of practical norm changes, and that units have on average about 50 bureaucrats in them. In this case, we have effectively 66 clusters ($J = 66$). We do not know, *ex ante*, what the intra-class correlations (ICC) within office (or units) will be, so we show power as a function of ICC in Figure 2. The dotted lines are the office-level scenario with 320 clusters, and the solid lines are the unit-level scenario with 66 clusters. The bold lines assume a minimum detectable effect (MDE) of 0.20 standard deviations, while the thinner lines assume an MDE of 0.10.

This second graph makes clear that the power depends hugely on these assumptions. It demonstrates also that the experiment will be underpowered if treatment is assigned at the level of the unit. Even at the office level, power declines rapidly as the ICC increases (and as noted above, there are theoretical reasons to believe that the ICC may be large in this context). Hence, to be powered the experiment likely needs to be on the individual level — or at least a mix of individual and office level, as we proposed in the above.

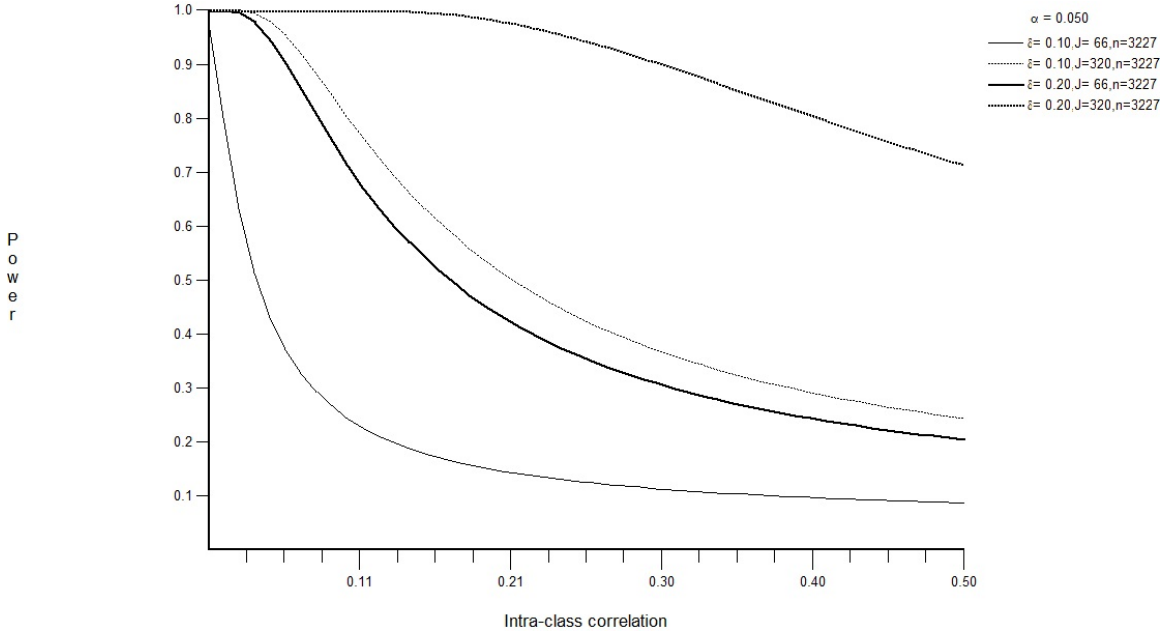


Figure 2: Power as a function of ICC assumptions.

It is also worth noting that in estimating equation 3, we have the advantage of measuring changes in productivity within individuals over time, which improves power considerably.³ In the seminal peer effects paper, Mas and Moretti (2009) had only 394 workers; yet they observed outcomes (in ten-minute intervals) over 4,000 times, leading to a total of 1,718,052 observations. We will not have as high-frequency data, of course. But if we have repeat biometric measurements for all employees every day for the 3,227 employees, then we would need 530 days to retrieve the 1,718,052 observations in Mas and Moretti (2009). We expect that with even one year of data collection (1,177,855 observations), we would have ample power to conduct the analysis.

³This assumes that we can measure effort using the daily biometric check-in/check-out system.

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