OBTAINING A DRIVER'S LICENSE IN INDIA: AN EXPERIMENTAL APPROACH TO STUDYING CORRUPTION*

MARIANNE BERTRAND
SIMEON DJANKOV
REMA HANNA
SENDHIL MULLAINATHAN

We study the allocation of driver's licenses in India by randomly assigning applicants to one of three groups: bonus (offered a bonus for obtaining a license quickly), lesson (offered free driving lessons), or comparison. Both the bonus and lesson groups are more likely to obtain licenses. However, bonus group members are more likely to make extralegal payments and to obtain licenses without knowing how to drive. All extralegal payments happen through private intermediaries ("agents"). An audit study of agents reveals that they can circumvent procedures such as the driving test. Overall, our results support the view that corruption does not merely reflect transfers from citizens to bureaucrats but distorts allocation.

I. INTRODUCTION

Public service provision in many developing countries is rife with corruption. A basic question about such corruption is whether it merely represents redistribution between citizens and bureaucrats or results in important distortions in how bureaucrats allocate services. This question underlies the debate on the efficiency implications of corruption, with some arguing that corruption merely "greases the wheels" of the bureaucracy and others arguing that it harms society.[1] In this paper, we use detailed survey data and experimental evidence to study this question in the context of one particular bureaucratic process: the provision of driver's licenses in Delhi, India.

1. For the "grease-the-wheels" view, see Leff (1964), Huntington (1968), and Lui (1985). For example, Huntington (1968) remarked that "[I]n terms of economic growth, the only thing worse than a society with a rigid, overcentralized, dishonest bureaucracy is one with a rigid, overcentralized, and honest bureaucracy." For arguments on how corruption can harm society, see Myrdal (1968), Rose-Ackerman (1978), Klitgaard (1991), Shleifer and Vishny (1992, 1993), and Djankov et al. (2002).

Specifically, between October 2004 and April 2005, the International Finance Corporation (IFC) followed 822 driver's license candidates, collecting data on whether they obtained licenses, as well as detailed micro data on the specific procedures, time, and expenditures involved.[2] At the end of the process, the IFC administered an independent surprise driving test (simulating the test that is supposed to be given by the bureaucrats) to determine whether individuals who were granted a license could drive.

To understand whether and how corruption affects allocation, license candidates were randomly assigned to one of three groups. The "bonus group" were offered a large financial reward if they were able to obtain a license in 32 days (two days longer than the statutory minimum time of 30 days). The "lesson group" were offered free driving lessons, to be taken immediately after recruitment into the survey.[3] The comparison group were simply tracked through the process. The bonus treatment allows us to assess whether and how the allocation of licenses responds to willingness to pay. Are a group that are willing to pay more for licenses more likely to get them? But also, are there more *unqualified* drivers receiving licenses in such a group? The lesson treatment allows us to assess whether allocation decisions by the bureaucracy are at all responsive to the socially most important component of this regulatory process–one's ability to drive.

The comparison group's experiences already provide evidence of a distorted bureaucratic process. Close to 71% of license getters in the comparison group did not take the licensing exam, and 62% were unqualified to drive (according to the independent test) at the time they obtain a license.[4] The average license getter in this group paid about Rs 1,120, or about 2.5 times the official fee of Rs 450, to obtain a license.

The experimental results highlight how these distortions respond to private willingness to pay. While individuals in the bonus

2. Other microempirical approaches to documenting and measuring corruption are Di Tella and Schargrodsky (2003), Fisman and Wei (2004), and Olken (2005).

3. To ensure that there were no social costs to the study, participants in the comparison and bonus groups were offered free driving lessons upon completion of the final survey and driving test.

4. Why acquire a license without knowing how to drive, especially since licenses are not used as a primary form of identification in India? License getters will likely learn how to drive after they get the license, as we discuss later on. The key point is that their driving skill level is unregulated; they will learn to the level that they find privately useful rather than the socially optimal level.

group are 24 percentage points more likely to obtain a license than those in the comparison group, they are also 13 percentage points more likely to obtain a license without taking the legally required driving exam, as well as 18 percentage points more likely to *both* obtain a license *and* fail the independent driving test.[5] In other words, a higher willingness to pay for a license translates into an increase in the number of license getters who cannot drive. The experimental results regarding the lesson group, however, suggest that social considerations are not totally ignored in the allocation of licenses: the lesson group is 12 percentage points more likely to obtain a license than the comparison group.[6] As a whole, the bonus group pay Rs 178 more in extralegal fees. Individuals in the lesson group continue to make extralegal payments despite being better drivers: the average extralegal payment is about the same in the lesson and comparison groups (albeit with more licensed drivers in the lesson group).

Interestingly, we find no evidence of *direct* bribes to bureaucrats in any of the groups. The extralegal payments are mainly fees to "agents," professionals who "assist" individuals in the process of obtaining their driver's licenses. These agents appear to be more than just time-saving institutions (akin to accountants embodying knowledge of tax regulations). Instead, multiple pieces of evidence suggest that agents institutionalize corruption. We find that 94% of individuals who did not hire agents took the legally required driving test at least once, while only 12% of those who used agents took that test. To investigate this further, we designed a second experiment aimed exclusively at understanding how agents affect the licensing process. Specifically, trained actors were sent to agents to elicit the feasibility of and prices for obtaining a license under different pretexts, which corresponded to bending various official rules. We find that agents can provide services that circumvent official rules. For example, agents were able to procure a license despite someone's lack of driving skills: agents offered to procure licenses for 100% of actors who said they

5. Moreover, the average license getter in the bonus group is more likely to fail our driving test than the average license getter in the comparison group. This suggests that the bonus group's failure rate is higher than one would estimate if one simply added more license getters (but with the same failure rate) to the comparison group.

6. We cannot rule out the possibility that simply being offered lessons also raised the lesson group's desire to get a license and, therefore, the effort they were willing to exert to obtain a license. The lesson group may thus also have a higher private willingness to pay for the license.

did not have the time to learn how to drive. However, they cannot bend all rules as easily: rules that leave a documentary trail (such as place-of-residence restrictions) appear harder for agents to circumvent.

Finally, to understand why good drivers in the lesson group continue to make extralegal payments, we studied nonexperimentally the experiences of those who try to use the formal (i.e., nonagent) channel for getting a license. Examining the subset of participants who began the process by taking the driving test once, we find that a substantial percentage of them (about 35%) failed and must resort to retaking the test or hiring an agent. Most interestingly, this percentage is *unrelated* to actual ability to drive: it is constant across the lesson, bonus, and comparison groups, and it is also constant across scores on the independent driving test. One possible interpretation of these suggestive data is that bureaucrats arbitrarily fail test takers in order to induce them to use agents. This interpretation is consistent with theories of "endogenous red tape," which emphasize that many bureaucratic hurdles might be the *result* of rent-seeking activities by bureaucrats (see for example Myrdal [1968], Shleifer and Vishny [1993], and Banerjee [1997]).

Hence, there appear to be two paths to obtaining a driver's license in New Delhi: the official path and the agent path. While following the agent path involves substantial extra costs, it ensures getting a license even without knowing how to drive, most likely because agents make payments to bureaucrats to bend the rules. While it is possible to obtain a license without hiring an agent, it also appears that bureaucrats may create hurdles (red tape) to encourage the use of agents. Overall, these results support the view that corruption in this particular setting goes beyond simple redistribution from citizens to bureaucrats.

The rest of the paper proceeds as follows. Section II discusses the process of obtaining a driver's license in India, while Section III describes the data collection and lays out the design of the first experiment (comparative experiences of comparison, bonus, and lesson groups). These experimental findings are presented in Section IV. Section V explores the process of getting a license with an agent, relying both on nonexperimental data and also on the findings of the second experiment (audit study of agents); we also investigate the possibility of red tape in the formal process. Section VI discusses alternative interpretations. Section VII concludes.

II. GETTING A DRIVER'S LICENSE IN DELHI, INDIA

The Motor Vehicle Act of 1988 and its subsequent amendments stipulate the official licensing process in India. State governments are responsible for administering this act. In Delhi, the setting for this project, licenses are issued at nine regional transport offices (RTOs). The jurisdiction of each office coincides with the corresponding police district, and individuals can only obtain licenses from their particular RTOs. In 2002, the Delhi Motor Vehicle Department authorized 313,690 licenses.

To be eligible for a license, an individual must be at least 18 years of age. He or she must first obtain a temporary license, which grants the right to practice driving under the supervision of a licensed individual. To obtain the temporary license, proof of residence, proof of age, a passport-sized photo, and a medical certificate must be submitted to the RTO, along with the application form. There is an application fee of Rs 360 ($8). Then the applicant must take a color blindness test and a written examination with 20 multiple choice questions on road signs, traffic rules, and traffic regulations. Upon the applicant's passing these, the temporary license is processed on the same day. If the applicant fails the exam, he or she can reapply after a 7-day waiting period.

After 30 days (and within 180 days) of the issuance of the temporary license, the individual may apply for a permanent license. The applicant must submit proof of age, proof of residence, a recent passport-sized photo, and his or her temporary license. The applicant must also pass a driving road test at the RTO. A Rs 90 fee ($2) is charged for the photograph and lamination of the license. If the applicant fails the road test, he or she can reapply after a 7-day waiting period.

III. DESIGN OF THE FIRST FIELD EXPERIMENT

In the first experiment, the IFC recruited and observed individuals through the application process for a four-wheeler license. The three main project phases—recruitment, randomization, and follow-up—are described below (see also Figure I).

III.A. Recruitment

Recruitment began in June 2004 and continued through November 2004. Recruiting occurred in a two-week cycle. During each cycle, recruiters intercepted individuals who were entering
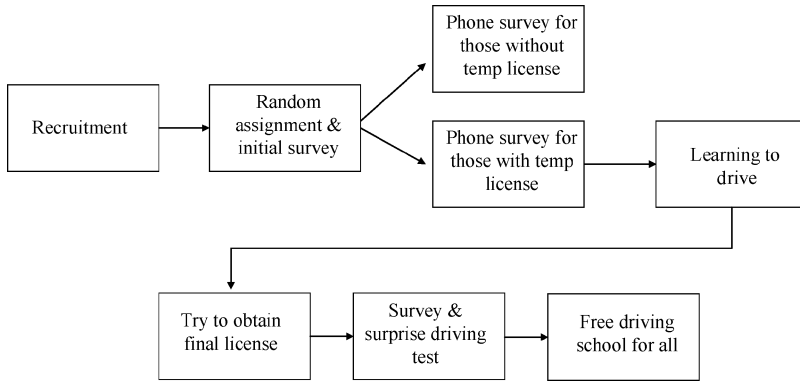
FIGURE I
Project Summary

one of the following four RTOs in Delhi: Southwest, Northwest, South, or New Delhi. The IFC gave recruiters strict guidelines regarding the type of person to approach for the project. First, to reduce attrition, recruiters were instructed to approach only men (in a pilot study, 60% of men remained in the project, while 100% of the women dropped out). Second, they were asked to identify individuals who had not previously had a license, but wanted one. Finally, to comply with government regulations, only individuals over age 18 were allowed to participate.

The recruiters provided each potential participant with a short explanation of the project, offered an information sheet outlining the time frame and payment structure for the project, and invited interested individuals to attend an information session to learn more about the project.

III.B. Initial Session and Randomization

An initial survey session was held at the end of each two-week recruiting cycle near the RTO from which the subjects were recruited. On average, 36 individuals participated in each of the 23 sessions, for a total of 822 project participants (see Figure II). Participation was restricted to individuals who had been officially recruited and up to one of their friends.[7]

To begin, the survey team administered an introduction survey to each participant. In addition to sociodemographic

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7. To further limit attrition, the project team rejected any individual whose phone number could not be verified prior to the session and required formal identification (student identification, ration card, etc.).
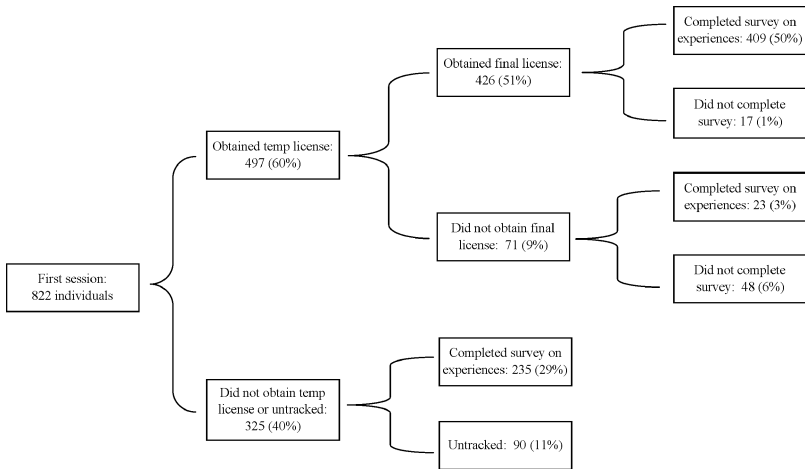
FIGURE II
Final Licesing Status of Participants
Note: Percentage of individuals out of original 822 survey participants reported in parentheses.

information, the survey included questions on previous experiences in obtaining government services and previous driving experience, as well as beliefs about the necessary procedures to obtain a driver's license. The survey concluded with a series of questions regarding driving laws and practices; these questions were drawn from a sample of practice test questions published by the Delhi RTO.[8]

After the survey, each individual was given one of three possible letters. The letters randomly allocated him to one of three groups: a comparison group, a bonus group, and a lesson group. Individuals in the comparison group were simply asked to return for a second survey—documenting their experiences—upon acquiring a permanent license. As an inducement to return, each subject was offered Rs 800 (roughly $17) upon completion of the final survey.[9]

The IFC gave individuals in the bonus group the same set of instructions as those in the comparison group. However, to

8. For example: You are driving in heavy rain. Your steering suddenly becomes very light. You should (1) steer toward the side of the road, (2) brake firmly to reduce speed, (3) apply gentle acceleration, (4) ease off the acceleration, (5) do not know.

9. Since all subjects received a cash payment, their behavior may not be representative of the population as a whole. This does not compromise the internal validity of the differences between treatment and comparison groups.

generate a stronger incentive for obtaining a license, the IFC also offered a bonus of Rs 2,000 (on top of Rs 800 for completing the surveys) if the individuals could obtain their permanent licenses within 32 days of obtaining their temporary licenses (two days over the official minimum wait time). Rs 2,000 was chosen to ensure a large enough treatment effect.[10]

Finally, in addition to being given the same set of instructions as the comparison group, individuals in the lesson group were offered free driving lessons, to be taken immediately. Accredited driving schools were hired to provide up to 15 lessons. Individuals in this group were also promised a payment of Rs 800 upon completion of the surveys.

At the end of this initial session, the project team paid all participants Rs 200 ($4.25). This was done to help alleviate possible credit constraints on acquiring a license. This upfront payment was also made in order to increase the credibility of the final payment. Behavioral studies of this type are not typical in India and participants in the pilot (who did not receive this upfront payment) harbored suspicions about whether the final payment would be made.

While the project team tried to isolate the three groups from each other, we cannot rule out the possibility that individuals in different groups communicated with each other during this process. To increase transparency, each of them was informed that several groups existed in the study, and that some participants were randomly chosen to win additional payments.

III.C. Follow-Up

It may take as few as 30 days or as many as 180 days to obtain a license. During this period, the project team kept in close contact with all participants to remind them about the project and maintain the credibility of the final payments. Extensive phone calls were made (and logged) to ensure that participants understood the instructions and payments schemes, to arrange lessons for subjects in the lesson group, and to remind subjects in the bonus group about the bonus scheme and deadlines.

As shown in Figure II (and, in more detail, in Appendix I), 497 individuals (60%) obtained temporary licenses. The project

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10. The monthly gross salary for the 380 employed individuals in our sample is Rs 5,446, and so the bonus is roughly equivalent to one-third of an individual's monthly income.

team administered a phone survey to these individuals regarding the subject's experiences in the bureaucratic process so far. The project team also attempted to administer a phone survey to the 325 individuals who failed to obtain temporary licenses in order to understand the reasons that they did not. Ninety individuals could not be contacted. Since we are unsure whether they obtained any type of license, we exclude them from the rest of the analysis.

Upon earning a permanent license, each subject was invited to a final session. Half of the original set of participants both obtained a final license and returned for the final survey. At this session, the survey team questioned each individual on his experiences in the process, tested his driving skills, gave the final payment, and, for those in the comparison and bonus groups, offered free driving lessons.[11]

Under the supervision of the project team, an accredited driving school administered a surprise practical driving test. The examination was designed to test the skills required to obtain a license. To preserve the integrity of the test, the test-givers were not from any of the schools that provided the instruction to the lesson group and did not know which experimental group a given test-taker belonged to. The driving exam consisted of two parts. First, the test-giver administered an oral examination to judge whether a subject could operate a car.[12] If a subject was unable to answer all of these questions correctly, he was deemed incapable of taking the practical driving test and automatically failed. If the subject adequately answered all questions, the test-giver administered a road test. The test-giver awarded subjects a series of points for satisfactorily illustrating that they could properly start a car, change gears, use indicators, complete turns, and park. The key feature of this test is that it mirrors exactly what the RTO itself is supposed to be testing.

The project team offered Rs 500 to the 71 individuals who obtained temporary licenses, but did not obtain a final license, to also attend a final session. At this session, the project team administered a survey to understand why they did not obtain a license and also administered the surprise driving exam. Twenty-three individuals attended this session (Figure II).

11. Upon earning a permanent license, an individual is required to relinquish his temporary license to the RTO. As proof of date, subjects in the bonus group were required to bring photocopies of their temporary licenses.
12. This oral exam was not a test of technical terms. Instead it tested basic knowledge needed to operate a motor vehicle. For example, individuals were asked, "which pedal would you use to speed up?" "how would you start the car?" etc.

For the rest of the paper, an individual is considered an attritor if he could not be tracked during the study (90 individuals) or if he did not complete the requested final survey (65 individuals); this leaves 667 individuals. Appendix II studies the differences between attritors and nonattritors in terms of socioeconomic characteristics, driving experiences, past bribing experience, and beliefs regarding procedures (as collected in the initial survey). We find very little difference between attritors and nonattritors, with two exceptions: attritors are less likely to be married and more likely to have driven a two-wheeler in the past. If the different treatments caused differential attrition, the comparison of the treatment groups to the comparison group may be less valid. In fact, a few characteristics (mainly age, marital status, and having driven a four-wheeler at one time in the past) are not balanced between attritors and nonattritors across the three groups. Therefore, we control for these characteristics in our empirical specifications.

III.D. Survey Participants' Characteristics

Table I describes the main characteristics of the 667 individuals in the study whom we were able to track and who completed the requested final survey. Column (1) presents means for the full sample, while columns (2)–(4) present means for each group. The stars indicate whether a given group's mean significantly differs from the two other groups', after controlling for session fixed effects. All standard errors are robust.

Panels A and B document the participants' socioeconomic backgrounds and their past driving experience. Individuals tend to be young (24 years of age) and many are high school or college students (49%). Seventy-seven percent are Hindu, while 20% are Muslim; 35% have minority status (Other Backward Castes, Scheduled Castes, or Scheduled Tribes). Many have driven a two-wheeler at least once (88%), yet only 3% report having a two-wheeler license. Close to a quarter report having driven a four-wheeler at least once in the past. As Delhi is India's capital, it is unsurprising that 43% have at least one family member (usually a parent) employed by the government.

The characteristics summarized in Panels A and B appear balanced across the three groups. There are no significant differences across groups in age, education levels (as measured by percentage of people with less than a primary school education), employment status, wealth (as measured by owning a home or owning a car), income, or likelihood of having a two-wheeler

TABLE I
SOCIOECONOMIC CHARACTERISTICS, PAST DRIVING EXPERIENCES,
AND BELIEFS ON PROCESS

	Full sample (1)	Comparison (2)	Bonus (3)	Driving lesson (4)
A. Socioeconomic characteristics				
Age	24.28	23.82	24.70	24.11
Married	0.25	0.22	0.27	0.24
Students	0.49	0.50	0.45	0.52
Employed	0.47	0.45	0.50	0.45
Less than primary education	0.08	0.06	0.07	0.09
Owns home	0.61	0.61	0.59	0.63
Owns car	0.11	0.10	0.13	0.09
Minority	0.35	0.43	0.31	0.35
Hindu religion	0.77	0.84**	0.77	0.73
Muslim religion	0.20	0.15	0.19	0.23
Log (salary)	3.90	3.70	4.18	3.73
Family member in government (including self)	0.43	0.38	0.45	0.43
B. Driving experience				
Have 2-wheeler license	0.03	0.03	0.02	0.03
Have driven a 2-wheeler	0.88	0.83**	0.91*	0.86
Have driven a 4-wheeler	0.24	0.24	0.34***	0.11***
Months known how to drive a 4-wheeler (given drive)	3.66	3.38	3.96	3.04
C. You are caught driving without a license. Would you bribe.....				
If the fine is 500 and bribe is 300?	0.61	0.64	0.60	0.60
If the fine is 3,000 and bribe is 300?	0.81	0.84	0.79	0.79
D. Ever... in the past (conditional on having tried to obtain a public service)				
Paid bribe	0.20	0.18	0.23	0.17
Used agent	0.21	0.19	0.23	0.20
E. Beliefs regarding procedures				
Total trips to obtain license	6.92	7.50	6.87	6.60
Total time at RTO	1,135.35	1,225.15	1,173.69	1,031.52
N	667	155	268	244

Notes.
1. This table reports summary statistics from the initial baseline survey. The mean demographics, driving experiences, and beliefs regarding the license process are presented for the 667 individuals who were tracked during the process and filled out all relevant surveys.
2. Column (1) presents the means for the full sample, while columns (2)–(4) report the means by the three experimental groups: comparison, bonus, and lesson.
3. Stars indicate a significant difference from other two groups, after controlling for session fixed effects. Standard errors are robust. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

license. There are some exceptions. First, individuals in the comparison group are more likely to be Hindu. Second, a larger fraction of those in the bonus group and a lower fraction of those in the comparison group report having driven a two-wheeler at least once in the past. Third, a larger fraction of those in the bonus group and a smaller fraction of those in the lesson group report having driven a four-wheeler before. However, conditional on having driven a four-wheeler, there are no systematic differences across groups in the tenure of driving a four-wheeler.

Survey participants talk openly about bribes and agent usage. First, to capture attitudes toward bribing, the project team posed the following hypothetical scenario to individuals: "You are driving without a license and are pulled over by a policeman. The policeman offers you a choice of paying a Rs 500 fine or a Rs 300 bribe." Sixty-one percent of the sample indicated that they would pay the bribe, and there were no significant differences in the propensity to bribe across the three groups (Panel C). Participants have some distaste for paying bribes, as evidenced by the fact that when the cost of the fine relative to the bribe increases, more individuals are willing to pay the bribe (for example, 81% of the sample stated that they would pay the bribe if the fine was Rs 3,000 and the bribe remained Rs 300). Second, the project team asked individuals whether they had paid a bribe at least once in the past (Panel D). Conditional on having obtained a service, 20% of individuals paid a bribe and 21% report having hired an illegal agent to help obtain a service (these are not mutually exclusive groups).[13] There are no systematic differences in past bribing behavior or agent usage across the three groups.

The final panel reports the participants' beliefs regarding the process of obtaining a license. Participants think that the entire process will take on average 6.9 trips. As we will see, this is more trips than it will take the average participant in practice. There are no systematic differences in beliefs across the three groups.

In summary, while the precharacteristics are fairly well balanced across the three groups, there are some systematic differences. We directly control for those characteristics in the analysis that follows.

13. The list of services covered in the initial survey was as follows: ration card, passport, land title, building permit, electricity, water, voter's card, personal account number (which is equivalent to a social security number). The highest likelihood of bribe payment was with regard to ration cards, followed by land titles and building permits.

TABLE II

SUMMARY STATISTICS ON THE BUREAUCRATIC PROCESS FOR THE COMPARISON GROUP

Variable	Mean
A. Final license status	
Obtained a final license	0.48
Obtained a license in 32 days or less	0.15
Obtained a final license conditional on trying	0.69
Obtained a license without taking licensing exam	0.34
Obtained license & automatically failed ind. exam	0.29
B. The process by which individuals obtained licenses	
Number of days between temporary and final license	47.99
	(29.14)
Predicted number of trips	6.46
	(4.10)
Number of trips	2.50
	(0.73)
Minutes spent at RTO (across all trips)	206.07
	(111.86)
Number of officials spoken with	4.73
	(2.90)
Lines waited in (final license)	2.51
	(1.09)
Took RTO licensing exam	0.30
	(0.46)

Notes.
1. This table describes the licensing process for the comparison group.
2. Panel A includes all 156 individuals who were both tracked during the course of the study and completed all surveys, while Panel B includes all 74 individuals who obtained a final license and completed all surveys.
3. "Trying" is defined as making at least one trip to the regional transport office after the initial session. "Predicted number of trips" is the number of trips an individual predicted it would entail to obtain a license prior during the initial baseline survey.
4. Standard deviations are in parentheses.

IV. EMPIRICAL RESULTS FROM FIRST EXPERIMENT

How does this bureaucratic system respond to variation in individuals' willingness to pay for a driver's license ("bonus" treatment)? How does it respond to variation in individuals' deservingness of a driver's license ("lesson" treatment)? Before examining the experiment designed to address these questions, we describe some interesting facts about individuals in the comparison group. These are reported in Table II.

Panel A includes all individuals in the comparison group who could be tracked by the survey team and completed the requested surveys, as described in Section III. Only 48% were able to obtain their permanent driver's licenses and only 15% were able to obtain them within 32 days of obtaining their temporary licenses. This low success rate cannot solely be attributed to the difficulty of obtaining a license. Some participants reported that they did not

try to obtain a license (see Appendix I), where trying implies having visited the RTO at least once after the initial session (to talk to either a bureaucrat or an agent). Excluding these individuals, 69% obtained permanent licenses.

Most striking are the statistics in the next two rows of Panel A. We find that 34% of individuals in the comparison group obtained licenses without taking the legally required driving exam at the RTO; given that only 48% obtained licenses, this implies that close to 71% of the license getters did not take the licensing exam. This indicates a large misapplication of the socially most useful component of this regulation—the screening of driving skills. It is possible that bureaucrats use other means, perhaps less time-intensive ones, to assess driving ability. The results of our independent driving test suggest otherwise. Twenty-nine percent of individuals in the comparison group obtained licenses *and* automatically failed our independent driving test, where failing means that the individual knew so little about the workings of the car that the test-giver refused to take him on the road. In other words, 62% of the license getters were unqualified to drive at the time they obtained licenses.[14,15]

In Panel B of Table II, we restrict the sample to the selected set of individuals in the comparison group *who obtained permanent licenses*. On average, it took them 48 days to obtain the licenses. These individuals overestimated what the bureaucratic process would entail: they thought, for example, that the process would take over 6.5 trips to the RTO. In practice, they only spent 3.5 hours (206 minutes) over 2.5 trips. They interacted with about 5 bureaucrats, and waited in 2.5 lines. Few of them (30%) took the required licensing exams at the RTO. Finally, the last row of Panel B shows that individuals in the comparison group on

14. This failure rate reflects a true inability to drive—as defined by the RTO—at the time of the test. As noted above, the test mirrors the RTO exam and checks for basic skills. Of course, these results do not immediately imply that incompetent drivers will be on the road, since we cannot measure investments in driving beyond the study. They do, however, imply that there is no effective regulation of who can drive. People will choose whatever level of driving skill is privately, not socially, optimal. This is especially important since everyone obtains a license for the purpose of driving. Driver's licenses are not used as a primary form of identification in India.

15. One may also ask, though, why individuals who do not know how to drive would go to the RTO to get a license. One explanation might be that it is easier or cheaper to learn how to drive with a permanent license in hand than without one. Learning with a temporary license may be more onerous because of the limited time validity of this license. For example, an unexpected work commitment may arise during the learning process that delays it and necessitates a reapplication for a temporary license. A permanent license (with unlimited validity) provides far more flexibility in timing the learning.

average paid 2.5 times the official fees to obtain their license: the average license getter paid about Rs 1,120, while official fees are only about Rs 450.

In summary, the experience of the comparison group shows distortions in the system, with many individuals obtaining licenses without being screened for driving ability and many paying well above official fees. However, this evidence does not tell us about the forces that generate these outcomes for the comparison group. Do these distortions result from bureaucrats sacrificing social benefits in order to cater to individuals' private willingness to pay? Do these distortions imply that this system does not respond to social considerations (e.g., ability to drive)? The experimental results shed light on these questions.

IV.A. Experimental Results

Our main experimental results are presented in Tables III and IV. Each column reports, for the dependent variable listed in that column, the coefficient estimates on dummy variables for bonus and lesson groups from a regression of the form

$$(1) \quad Outcome_i = \beta_0 + \beta_1 Bonus_i + \beta_2 Lesson_i$$
$$+ \beta_3 Session_i + \beta_4 X_i + e_i.$$

Indicator variables for the initial session the individual attended ($Session_i$) are included to absorb the unobserved heterogeneity in the procedural outcome across the initial sessions. This is important for two reasons. First, the IFC ended the study three months after the last initial session. Thus, individuals who attended the first session in July 2004 had more time to obtain licenses than those who attended the last session in November 2004. Second, because we recruited geographically for each session, all individuals at a given initial session were required to obtain licenses from the same RTO. Controlling for initial session fixed effects therefore also nets out any differences in procedures across RTOs. Demographic variables—age, marital status, religion fixed effects, a dummy variable for having driven a four-wheeler prior to the experiment, and a dummy variable for having driven a two-wheeler prior to the experiment—are used to control for differences in pre-experimental characteristics and differential attrition in the main sample (see Table I and Appendix II).[16] Robust standard errors are

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16. The results do not differ significantly if we control for the additional socioeconomic variables from the introduction survey.

TABLE III
OBTAINING A LICENSE

	Obtained license (all tracked) (1)	Obtained license (2)	Obtained license in 32 days or less (3)	Obtained license without taking licensing exam (4)	Obtained license and did not have anyone teach them to drive (5)	Obtained license and attended a driving school (6)	Obtained license and automatically failed ind. exam (7)	Obtained license and exam score <50% (8)
Comp. group mean	0.45	0.48	0.15	0.34	0.23	0.03	0.29	0.32
Bonus group	0.24	0.25	0.42	0.13	0.29	0.03	0.18	0.22
	$(0.05)^{***}$	$(0.05)^{***}$	$(0.04)^{***}$	$(0.05)^{***}$	$(0.04)^{***}$	(0.02)	$(0.05)^{***}$	$(0.05)^{***}$
Lesson group	0.12	0.15	−0.05	−0.03	−0.12	0.35	−0.22	−0.18
	$(0.05)^{**}$	$(0.05)^{***}$	(0.04)	(0.05)	$(0.04)^{***}$	$(0.03)^{***}$	$(0.04)^{***}$	$(0.05)^{***}$
N	731	666	666	666	666	666	666	666
R^2	0.12	0.14	0.31	0.12	0.26	0.26	0.24	0.20
F stat	14.24	13.50	87.60	7.48	61.38	52.83	64.48	51.12
p-value	.00	.00	.00	.00	.00	.00	.00	.00

Notes:
1. This table reports on the subjects' ability to obtain a license and their driving ability, by experimental group.
2. Each column gives the results of an OLS regression of the dependent variable listed in that column on indicator variables for belonging to the bonus and lesson group. All regressions include session fixed effects, age, religion fixed effects, an indicator variable for marital status, an indicator variable for whether the individual had ever driven a two-wheeler prior to the project, and an indicator variable for whether the individual had ever driven a four-wheeler prior to the project. For ease of interpretation, the comparison group mean of the dependent variable is listed in the first row. The last two rows report the F-stat and p-value for a test of the joint significance of the bonus and lesson group indicator variables.
3. The sample in column (1) includes all individuals whose final license status was ascertained by the program staff. Columns (2)–(8) include all individuals whose final license status was ascertained and who completed all relevant surveys.
4. All standard errors are robust. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

reported in parentheses under each estimated coefficient. Below the coefficient estimates, we list the *F*-statistic and *p*-value for the joint significance of β_1 and β_2. For ease of interpretation, we also report the mean of the dependent variable for the comparison group in the first row of each column.

Table III focuses on experimental outcomes related to whether or not a given individual obtained a license; Table IV considers payment and process-related outcomes. For ease of exposition, within each table, we first discuss our findings regarding the bonus group and subsequently move to our findings regarding the lesson group.

IV.B. Obtaining a License: The Bonus Group

The first outcome we consider in Table III is whether or not a given individual was able to obtain a license. "Obtained license" is a dummy variable that equals 1 if a given individual obtained a permanent driver's license, and 0 otherwise. In column (1), the sample consists of the 731 individuals for whom we know whether or not they obtained a final license.[17] In column (2), we additionally drop the 65 individuals who indicated their final licensing status to the project team over the phone but refused to attend the final session to take the survey and driving exam. The sample in column (2) will be used for the analysis of all other experimental outcomes, as the only information we have about these 65 individuals is whether or not they obtained licenses. We obtain similar results in these two samples: individuals in the bonus group are about 25 percentage points more likely to obtain final licenses, a difference that is significant at the 1% level.[18] We also consider in column (3) a dummy variable that equals 1 if the individual

17. In the bonus group, the individuals we could not track were more likely to be students and to have known how to drive for a longer period of time (conditional on knowing how to drive), relative to the comparison group. In the lesson group, the individuals we could not track were more likely to be older, married, and employed and to know someone in the government, relative to the comparison group.

18. Since the bonus group has a lower attrition rate (4.4%) than the comparison group (13.4%), one wonders whether selective attrition by the comparison group could generate an apparent difference in success rates even if none existed. This would happen if the dropouts from the comparison group were disproportionately license getters. To quantify the magnitude of this concern, assume conservatively that the license-getting rate among those we cannot track in the comparison group is the same as the license getting rate among those we can track in the bonus group. Assume further that none of those we cannot track in the bonus group obtained licenses. This would imply a license getting rate of 48% in the comparison group, compared to a license getting rate of 65% in the bonus group. This suggests that the attrition is not quantitatively large enough to affect this result.

TABLE IV
PAYMENTS AND PROCESS

	Payment above official fees (1)	Tried to bribe (2)	Hired an agent (3)	Hired an agent and obtained license (4)	Payment to agent above official fees (5)	Obtained license and took more than three trips (6)
Comp. group mean	338.21	0.05	0.39	0.37	313.97	0.05
Bonus group	178.4	0.02	0.19	0.21	142.4	0.03
	(46.33)***	(0.02)	(0.05)***	(0.05)***	(45.54)***	(0.02)
Lesson group	−0.24	−0.02	−0.02	−0.02	−42.22	0.05
	(44.38)	(0.02)	(0.05)	(0.05)	(43.77)	(0.02)**
N	666	666	666	666	666	666
R^2	0.13	0.11	0.12	0.13	0.11	0.09
F-stat	12.06	2.53	14.07	16.45	11.98	2.11
p-value	.00	.08	.00	.00	.00	.12

Notes:
1. This table reports on the subjects' payments and process to obtain a license, by experimental group.
2. Each column gives the results of an OLS regression of the dependent variable listed in that column on indicator variables for belonging to the bonus and lesson group. All regressions include session fixed effects, age, religion fixed effects, an indicator variable for marital status, an indicator variable for whether the individual had ever driven a two-wheeler prior to the project, and an indicator variable for whether the individual had ever driven a four-wheeler prior to the project. For ease of interpretation, the comparison group mean of the dependent variable is listed in the first row. The last two rows report the F-stat and p-value for a test of the joint significance of the bonus and lesson group indicator variables.
3. The sample includes all individuals whose final license status was ascertained by the program staff and who completed all relevant surveys.
4. All standard errors are robust. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

was able to obtain his permanent license within 32 days of obtaining his temporary license, 0 otherwise. Individuals in the bonus group are 42 percentage points more likely to get their permanent licenses within 32 days or less. Hence, these first findings suggest that individuals who have a greater need to get a license quickly are able to achieve their objective.

Our next findings show that this increased propensity to get a license comes at a social cost: more bad drivers. The dependent variable in column (4) is a dummy variable that equals 1 if the individual obtained a driver's license without taking the legally required RTO driving exam, 0 otherwise. Increasing willingness to pay for a driver's license increases the number of people who obtain a license *without* taking the legally required RTO exam. Columns (5)–(8) of Table III show that this lack of testing is accompanied by an increase in the number of licensed drivers with poor driving skills. Individuals in the bonus group are 29 percentage points more likely to obtain licenses without having anyone teach them how to drive (column (5)) and are not more likely to have attended driving schools (column (6)). They are also much worse drivers than the comparison group: they are 18 percentage points more likely to be licensed drivers who automatically fail the independent driving test (column (7)); they are 22 percentage points more likely to be licensed drivers who score below average on the independent test (column (8)).[19] The interesting finding here is not that the marginal person trying to get a license is of low quality: it is that the bureaucracy allows them to get licenses despite their low quality. In this regard, it is useful to benchmark how bad the marginal drivers actually are. The failure rate on the independent exam is .60 (=.29/.48; see Table II) among the licensed drivers in the comparison group, while it is .75 (=.18/.25) among the marginally new licensed drivers in the bonus group.

In summary, the evidence reported so far in Table III suggests a bureaucratic system where a higher willingness to pay for a license translates not only into an increase in the number of license getters (a socially efficient component of the bureaucratic response) but also into an increase in the number of license getters who do not know how to drive (a socially inefficient component of the bureaucratic response).

19. The score is composed of the individuals' score on the 5 oral questions and on 23 aspects of driving. Thus, the highest possible score is 28.

IV.C. *Obtaining a License: The Lesson Group*

The motivation for including a "lesson treatment" in our experimental design is to test whether the bureaucrats are at all responsive to the main social consideration in the allocation of licenses: one's ability to drive. Under an extreme view of a corrupt bureaucracy, one might expect the allocation of licenses to be driven only by willingness to pay. This is not the case: randomly helping individuals acquire better driving skills increases the number of license getters among these individuals. Specifically, columns (1) and (2) show that individuals in the lesson group are between 12 and 15 percentage points more likely than the comparison group to obtain permanent licenses.[20]

These findings are, however, difficult to interpret, because we cannot rule out the possibility that offering free driving lessons to these individuals altered their willingness to pay for licenses. Trying harder to get a license could be a justification for the time spent learning how to drive; it could also be that having learned how to drive raises the private value of getting a license, since it can now be used. In support of these points, we found that individuals in the lesson group were about 12 percentage points more likely to "try" to obtain licenses than individuals in the comparison group.[21]

The remaining columns of Table III show that individuals in the lesson group are not more likely than individuals in the comparison group to obtain licenses without taking the exam (column (4)). Thus, while the lesson group has more license getters, it does not have more untested license getters. This suggests that models in which bureaucrats test a fixed fraction of license getters do not fit the data. The lesson group are also more likely to obtain their licenses while having had someone teach them how to drive (column (5)) and especially having attended a driving school (column (6)). These findings are, of course, unsurprising given the nature of the treatment for this group. More generally,

20. Selective attrition could theoretically explain this result if there were more license getters among the dropouts in the comparison group than among the dropouts in the lesson group. Assume that none among those we cannot track in the lesson group obtained licenses. Assume further that the license-getting rate among those we cannot track in the comparison group is the same as the license-getting rate among those we can track in the lesson group. This arguably conservative set of assumptions would (given respective attrition rates of 15.4% in the lesson group and 13.4% in the comparison group) only about equalize the license-getting rate (47%) in these two experimental groups.

21. In comparison, we found that individuals in the bonus group were about 19 percentage points more likely to "try" than individuals in the comparison group.

60% of the individuals in the lesson group who obtained licenses took the free driving lessons; also, conditional on take-up, they attended 12 classes on average. Columns (7) and (8) suggest that these classes did turn these individuals into better drivers.[22] For example, column (8) shows that individuals in the lesson group are 22 percentage points less likely to have obtained licenses and also automatically failed our independent driving test.[23]

In summary, giving a random subset of individuals access to driving lessons did raise their driving skills and also increased the likelihood that they obtained driver's licenses. While this is consistent with the view that bureaucrats do not completely ignore driving ability in the allocation of licenses, this conclusion is somewhat tempered by the fact that giving free access to driving lessons also raised individuals' likelihood of trying to get licenses.

IV.D. Payments and Process: The Bonus Group

Our findings so far show distortions in the application of this regulation, and that the magnitude of these distortions responds to the private willingness to pay for a license. This leads us to question whether bureaucrats receive bribes from misapplying the rules. In Table IV, we study a set of experimental outcomes related to licensing payments and to the process of obtaining a license.

The dependent variable in column (1) of Table IV is the amount paid by an individual *above* the official fees in the process of obtaining a license.[24] The mean of this variable in the comparison group is Rs 338, indicating that the comparison group already incurs substantial payments above the official fees. Column (1) shows that the bonus group makes more of these extralegal payments.

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22. Could this be the result of "teaching to the test"? Could the lesson group not be better drivers but merely have been better taught how to take the driving test? The nature of the test, as noted before, makes this an unlikely possibility. Given that general skills are tested, the test likely provides a good approximation to what constitutes a good driver.

23. We also tested driving ability among the set of participants who had only obtained temporary licenses, but agreed to come back for a final survey. As expected, even in that group, driving ability was higher in the lesson group than in the control and bonus groups. Only 26% of the lesson group automatically failed the test, compared to 40% and 50% in the comparison and bonus groups, respectively.

24. Individuals were asked to break down their expenditures for the license. If an individual did not separate his official and unofficial costs, the formal fees of Rs 450 were subtracted from his fees. Note that information on informal fees paid was collected even if the individual did not obtain a license.

In columns (2)–(5), we study the exact nature of these extra payments. While our intuition *ex ante* was that these extra payments were direct bribes paid to bureaucrats, column (2) suggests otherwise. The dependent variable in column (2) is a dummy variable that equals 1 if an individual reported offering to bribe any bureaucrat or being asked for a bribe, 0 otherwise. First, one can see that the mean of this variable in the comparison group is low, with only 5% of individuals having tried to bribe or having been asked for a bribe; this implies that bribes to bureaucrats were only used by 11% of the license getters in the comparison group. More importantly, we do not find a significant (neither economically nor statistically) increase in the use of bribes in the bonus group.

What are these extra payments? Columns (3)–(5) show that most of these payments are payments to agents. Agents are professionals who, for a fee, help individuals through the process of obtaining various services.[25] While illegal, agents are a common institution in India.[26] We find that about 40% of individuals in the comparison group hired agents at some point in the process of getting licenses (column (3)). Nearly as many hired agents and also obtained licenses (column (4)), indicating that hiring an agent pretty much guarantees obtaining a license. The average payment to agents by individuals in the comparison group (Rs 313, column (5)) is about the same as the total average payment above official fees (Rs 338, column (1)); in other words, payments to agents are the bulk of the nonofficial fees paid in the process of getting a license. Individuals in the bonus group report being about 20 percentage points more likely to use an agent (columns (3) and (4)) and spend about Rs 142 more on agent fees (column (5)) than individuals in the comparison group; hence, most of the bonus group's additional payments are agent fees.

One conjecture that emerges from the bonus group's experiences is that agents are the channels of inefficient corruption in this bureaucratic system, and not simply the providers of standard "agency" services (such as standing in line for people). This

25. The existence of agents has been documented before. Rosenn (1984) describes the role of facilitators ("despachantes") in obtaining various public services in Brazil. Fisman, Moustakerski, and Wei (2005) find agents in the arena of international trade in Hong Kong.

26. From the introduction survey, we learned that agent usage is quite prevalent in the procurement of many government services in India. For example, of the 155 participants who obtained ration cards, 54% reported being helped by an agent. Similarly, 47% of the 47 individuals who obtained a land title, 15% of the 104 who obtained a passport, and 20% of the 58 who obtained a personal account number reported hiring an agent.

conjecture is based on the fact that a positive shock to the willingness to pay for a license increases both the number of people that pay for agents (Table IV) and the number of people that obtain licenses despite being unqualified to drive (Table III). However, further evidence will clearly be needed to strengthen this conjecture.

IV.E. Payments and Process: The Lesson Group

The findings in Table IV suggest that the lesson group does not differ much from the comparison group when it comes to average extralegal payments or reliance on agents. How much would we have expected the lesson group to pay? In a model where the extralegal payments are routine payments that have to be made by all license getters, one would have expected the lesson group, who get the license at a higher rate, to also pay more. The fact that the better drivers in the lesson group do not pay more suggests that informal payments are part of an alternative mechanism for acquiring a license, a mechanism that might be used more by those who are attempting to circumvent the driving test.

But the fact that many individuals in the lesson group *continue* to make extralegal payments (and hence use agents) is also intriguing. One possible interpretation is that not everyone in the lesson group knows how to drive. Another interpretation is that the agent route might be an attractive one even for able drivers, possibly because of the many hassles associated with getting a license without an agent. The last column of Table IV gives some credence to the second interpretation. We use as a dependent variable a dummy that equals 1 if an individual obtained a license but also had to make more than three trips in the process of getting that license. This variable may proxy for the hassle in getting a license in that needing more than three visits implies that the individual had to go back either to pick up additional documents or to take additional examinations. We find that individuals in the lesson group were more likely to make more than three trips to the RTO. In other words, it is possible that the formal route involves extralegal hurdles, so that even some of those who know how to drive may choose to hire agents. We return to this possibility in the next section.

V. THE PROCESS OF GETTING A LICENSE: AGENTS AND RED TAPE

Agents are key players in this bureaucratic process. In fact, more than 70% of the participants *who obtained a license* hired an

TABLE V

OUTCOMES FOR THE COMPARISON GROUP, BY AGENT USAGE

	Hired agent (1)	Did not hire agent (2)	*p*-value of difference in means (3)
A. Procedures			
Days	46.21	54.44	0.32
No. of trips	2.33	3.19	0.00
No. officials spoken with	3.91	7.69	0.00
Lines	2.41	2.88	0.13
Total minutes spent	178.48	306.06	0.00
Took RTO licensing exam	0.12	0.94	0.00
B. Expenditures			
Total expenditures	1,282.59	563.13	0.00
C. Driving ability			
Automatic failure	0.69	0.31	0.01
Driving score	6.60	15.44	0.00

Note: Column (1) presents the mean for the 58 individuals in the comparison group who used an agent and obtained a license, while column (2) provides the mean for the 16 individuals in the comparison group who did not use an agent and obtained a license. Column (3) reports the *p*-value from the test of difference in means between the two groups.

agent. Our experimental results have shown that the greater usage of agents in the bonus group went hand in hand with a greater number of licenses being issued to individuals who had not taken the legally required driving exam at the RTO and did not pass the independent driving test. Based on these results, we conjectured that agents are not simply providing standard "agency" services or greasing the wheels of the bureaucracy but also are a channel for inefficient corruption, facilitating access to licenses among those who are unqualified to drive. Strengthening this conjecture requires further understanding of the role of agents and their relationship to the bureaucrats. This is what we do in the first part of this section, combining nonexperimental descriptive analyses and new experimental data from an audit study. In the second part, we investigate further the possibility that even good drivers may decide to hire agents because of the hurdles, or red tape, bureaucrats are imposing on individuals who attempt to complete the licensing process without an agent.

V.A. Agents: Nonexperimental Analysis

In Table V, we examine processes and outcomes for agent users versus nonagent users in the comparison group. Specifically,

we report the means of a set of variables for individuals in the comparison group who obtained licenses either with (column (1)) or without (column (2)) hiring agents. *P*-values from *t*-tests of the difference in means are reported in column (3).

Hiring an agent is associated with a much shorter process. Those who did not use agents spent on average 306 minutes at the RTO, took more than three trips to the RTO, and spoke with close to eight bureaucrats. Agent users spent 130 minutes less time at the RTO, took about one less trip, and spoke on average to only four bureaucrats.

Hiring an agent is also very strongly related to the level of testing at the RTO. While 94% of those who did not hire agents took the legally required RTO practical test at least once, only 12% of those who hired agents took that test. This is consistent with the hypothesis that hiring an agent is the main channel through which bad drivers can end up with licenses, but it is also theoretically possible that only the best drivers, for whom testing would be inessential, hire agents. This hypothesis is rejected in Panel C of Table V. Individuals who hire agents to get their licenses are about 38 percentage points more likely to fail the surprise driving test.

As we had already learned from our experimental results in Table IV, fees paid to agents are nearly the only source of excess payments in this bureaucratic process. Specifically, in Panel B, we compare the average expenditures to obtain a license for those who hired agents and those who did not. For those without agents, the total expenditures were Rs 563. In contrast, those hiring agents paid about Rs 1283, or Rs 720 more, to obtain their licenses.

In summary, this analysis suggests that the role of agents consists of more than simply "standing in line" for their clients. Instead, there is a strong correlation between using an agent and being able to skip the legally required driving exam; there is also a remarkably strong correlation between using an agent and unsafe drivers obtaining licenses.[27] This reinforces our experimental results in Tables III and IV. However, the evidence in Table V is purely correlational. In the next subsection, we move to some new

27. The New Delhi RTO illustrates the correlation between agents and ability to obtain a license. This RTO is situated near the main Federal Buildings. As such, the government has made a special attempt to remove agents from this area, and bureaucrats are more heavily monitored. We find a lower rate of agent usage, a lower rate of license getting, and a higher quality of driving skills among those who received their licenses at the New Delhi RTO. All results in this paper are robust to the exclusion of the New Delhi RTO.

experimental evidence that rules out a noncausal interpretation of these correlations.

V.B. Agents: Experimental Evidence

In January 2006, the IFC performed an audit study of agents involved in the provision of driver's licenses in Delhi. Trained actors were sent to agents under different scripted pretexts. The actor would record whether the agent said a license could be obtained under this pretext and, if so, at what price. The actors were college-aged Hindu men. They were of similar height and weight, and wore similar clothes. In total, six actors had 224 interactions with agents. Appendix III offers more details on the audit design.

Each day, the actors were randomly given one of six scripted pretexts. In the main script of interest, actors stated that they wanted to get a license but did not know how to drive and did not have the time to learn how to drive ("Cannot Drive" script). The five other scripts (in addition to the "Cannot Drive" script) were as follows. First, the actor had to learn what the agent could do for him if he had all the right paperwork and could drive (comparison group). We also focused on what would happen if the actors were missing either residential proof or age proof, two of the documents required to obtain a license. Another script focused on what would happen if the agent could not come back to the RTO to obtain a license. Finally, the last script focused on what would happen if the actor needed a license in less than 30 days, in other words, less than the officially required time between the temporary license and the final license.

After each visit, the actors were asked to fill out surveys describing their experiences with each agent. A series of questions on the work practices of the agents and their relationship with the RTO bureaucrats were also included in the survey. The actors were trained to bring up as many of these questions as possible in casual conversation with the agents (see Appendix III for details).

The results of the audit study are reported in Table VI. The dependent variable in columns (1) and (2) is a dummy variable that equals 1 if the agent says he can procure a license for the actor in a given interaction, and 0 otherwise. Column (1) corresponds to a single regression of this "agent can procure license" dummy on the various pretext dummies; reported in each cell is the estimated coefficient on the pretext in that row, with robust standard errors in parentheses. In column (2), we replicate the

TABLE VI
AUDIT STUDY

Group	Agent can procure license (Mean = 0.57)		Final price if agent can procure license (Mean = 1,586)	
	(1)	(2)	(3)	(4)
Constant	1	1.02	1,277.89	1,303.17
	(0.00)***	(0.04)***	(57.36)***	(83.21)***
Cannot drive	0	−0.01	62.65	110.54
	(0.00)	(0.02)	(81.66)	(85.76)
No residential proof	−0.5	−0.51	1,285.26	1,295.81
	(0.08)***	(0.08)***	(99.34)***	(102.30)***
No age proof	−0.21	−0.23	329	366.85
	(0.07)***	(0.07)***	(87.18)***	(90.96)***
Cannot come back	−0.95	−0.94	317.11	411.55
	(0.04)***	(0.04)***	(256.50)	(263.70)
Need license quick	−0.92	−0.91	855.44	850.51
	(0.05)***	(0.05)***	(212.03)***	(214.55)***
Actor fixed effects		X		X
N	226	226	128	128

Notes:
1. This table reports the audit study results. Each column presents the results of an OLS regression of the dependent variable listed in that column on indicator variables for each script in the audit study.
2. Standard errors are robust. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

regression in column (1) but further control for actor fixed effects, to net out possible differences across actors in their ability to obtain the service. Columns (3) and (4) follow the same structure as columns (1) and (2), respectively, but focus on the final price quoted by the agent if the agent was able to procure the service.

Several interesting findings emerge. To start, the prices quoted by the agents were of magnitude similar to that of those in the survey data discussed before (see Table V). Second, our finding regarding the "Cannot Drive" script confirms the relationship between agent usage and ability to get a license despite lacking driving skills. Agents saw no problem in helping actors who stated they did not know how to drive and did not have time to learn how to drive. One hundred percent of actors who approached agents with a "Cannot Drive" pretext were told that the agents could help them in getting their licenses. This confirms that the correlation between agent usage and poor driving ability observed in Table V does not simply reflect an omitted third factor. In addition, in cases where the actors managed to ask a few additional

questions of the agents in "casual conversation," the agents openly
said that they could get the actors out of the formal driving exam
at the RTO. Strikingly, the prices quoted under that script were
not statistically different from those quoted to the comparison
group.

The remaining rows of Table VI indicate that there are other
services that agents can provide, even though these services also
imply a deviation from the formal legal requirements. However,
not all such services are as easy for the agents to provide as get-
ting a license to someone who cannot drive. For example, only
50% of agents reported that they could procure a license if the
actor lacked residential proof (row 3) and 80% if the actor lacked
age proof (row 4). Also, in the cases of missing residential proof
or age proof, the prices quoted by the agents conditional on be-
ing able to help were statistically significantly larger than in the
comparison group. However, only 5% of agents could procure a
license if the actor stated that he could not come back to hand
in forms and take the picture at the RTO (row 5). Finally, only
9% of agents said that they could assist someone who needed a
license in less than the official minimum time, and conditional on
being able to assist, quoted a much higher price for rendering this
service.

How can we explain these findings? Why is assisting some-
one in getting a driver's license despite his not knowing how to
drive easier than assisting someone with some missing pieces of
paperwork? One conjecture is that verifiability is an important
determinant of which rules can be bent.[28] While it might be easy
for the bureaucrat's superiors to crosscheck whether a valid proof
of age and proof of residence were submitted by a license candi-
date and to monitor the dates on which these documents were
submitted, it may be harder to cross-check whether the candidate
took a road test and how well he did on it. In this view, the audit
study suggests that the social inefficiency results would general-
ize most readily to other contexts where the socially useful part of
the regulation is nonverifiable by the bureaucrats' principals. At
the same time, the audit findings lead to many more questions.
First, is it possible that even verifiable elements of a regulation
could be overcome through collusion between the principals and

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the bureaucrats? While we do not have a direct measure of the extent of collusion between the bureaucrats and higher-up officials, the audit results suggest that there was not complete collusion in this particular setting. Second, would bureaucrats still ignore the nonverifiable, but socially useful parts of regulation if the costs to society of breaking the rules were much higher?

V.C. Red Tape

Even the better drivers in our study rely infrequently on the formal channel, which is associated with virtually no extralegal payments. What are the hurdles faced in this channel? The nonexperimental data provide some clues. In particular, our data allow us to examine bureaucrats' behavior when it comes to deciding whether someone has passed or failed the official driving test. Consider an individual entering the RTO and being asked to take the test. What affects the likelihood that this individual will succeed and be awarded a license? One clear determinant of success ought to be that individual's driving ability. However, bureaucrats may strategically manipulate the passing rule in order to extract higher bribe payments, for example, forcing more individuals to go through agents to obtain their licenses. At the extreme, bureaucrats may fail all test takers independent of how well they perform on the test. The fact that a fraction of the participants in our study did manage to obtain their licenses without hiring agents already indicates that such extreme behavior is not taking place. However, the bureaucrats may still be able to manipulate the passing rule in a way that might discourage even some of the good drivers from attempting to get their licenses without agents. This is the possibility we consider in Table VII.

In order to test this red tape hypothesis, we would ideally like to randomly send to the RTO individuals with better and worse driving ability and see how their driving ability affected their success in getting a license. Unfortunately, we do not have such a controlled experiment here and have to rely on descriptive evidence. The evidence in Table VII should, therefore, be interpreted with much more caution than the previous experimental findings in this paper.

We focus on individuals who begin the process without agents and take the driving exam at least once. For this set of individuals, we can define a "success" variable that equals 1 if the individual managed to obtain a license without hiring an agent and without taking the RTO exam twice. This roughly corresponds to

TABLE VII
RED TAPE

	Started without an agent and took exam at least once		Full sample of license getters	
	Success (1)	Used agent in the end (2)	Used agent at start (3)	Used agent in the end (4)
A. By exam score				
Passed exam	0.62	0.24	0.29	0.61
	[98]	[98]	[219]	[219]
Failed exam	0.74	0.22	0.50	0.84
	[35]	[35]	[186]	[186]
B. By group				
Comparison	0.65	0.25	0.35	0.78
	[20]	[20]	[76]	[76]
Bonus	0.64	0.27	0.52	0.80
	[46]	[45]	[187]	[187]
Lesson	0.66	0.22	0.22	0.58
	[68]	[68]	[144]	[144]

Notes:
1. This table studies possible red tape in the process of obtaining a driving license. Columns (1) and (2) include the sample of individuals who started without an agent and took the exam at least once. Columns (3) and (4) include the full sample of license getters.
2. "Success" in column (1) is defined as obtaining a license by passing the formal licensing exam, without hiring an agent.
3. Sample sizes are listed below each proportion in square brackets.

individuals who went to the RTO, took the test, and successfully got their licenses. Of course, our objective is to contrast performance on that test based on driving ability. We consider two approaches to identifying heterogeneity in driving ability. First, we can rely on the result of our independent driving test and contrast the mean of this "success" variable for individuals who automatically failed the independent exam and those who passed that exam (Panel A of Table VII). Alternatively, we can go back to our three experimental groups and compare mean "success" across groups, relying on the fact that individuals in the lesson group are better drivers due to the free lessons they were offered (Panel B).

"Success," as defined above, does not appear to vary systematically with driving ability (column (1)). In fact, we find a (statistically insignificant) higher success rate among those individuals we found to be unqualified to drive based on the independent test (74% compared to 62%). The same surprising patterns hold when we contrast success rates across the three experimental groups (Panel B).

With the caveat of a clearly selected sample, this evidence is consistent with the idea that bureaucrats may introduce additional randomness into the application process, or additional red tape, for individuals who plan to use the formal channel, may be to induce them to switch to agents. Interestingly, about 25% of those who started the process at the RTO by taking the driving test eventually resorted to hiring agents to obtain their licenses (column (2)). Similarly, statistics computed for the full sample of license getters also suggest that many of the license getters who used agents did not start the process with agents, but eventually switched to hiring them. Column (3) reports the fraction of license getters who used agents from the start, while column (4) reports the fraction of license getters who ended up using agents. Worse drivers ("failed exam" group; row 2) and drivers in a hurry (bonus group; row 4) are more likely to have used agents from the start. But interestingly, all drivers (good and bad) who start without agents are likely to end with them. For example, we find that while only about 35% of the individuals in the comparison group who obtained a license started the process with agents, 78% of these individuals used agents in the end.

VI. Interpretation

To summarize, there are two main tracks to procuring a driver's license in Delhi. The formal track involves directly applying through the RTO and no bribery. Some of our results, however, suggest that this track might be fraught with extralegal hurdles. The informal channel, on the other hand, is operated by agents, who account for nearly all the extralegal payments in our sample. These agents not only help to secure a license—which they do at nearly a 100% success rate—but also help to circumvent the testing requirement. Applicants with high willingness to pay get their licenses by paying fees to agents and not taking the driving test, resulting in unqualified (yet licensed) drivers. Better drivers are more likely to obtain their licenses through the formal channel, where they get tested but possibly also face extralegal hurdles. The result is a system that fails to regulate the quality of drivers and may force many individuals to make extralegal payments to acquire licenses.

While they reveal a clearly dysfunctional system, do our results imply bureaucratic corruption? One possible alternative

interpretation for these results is that the RTO is unable to test all drivers due to lack of resources and understaffing. It only tests sporadically and many people slip through the cracks; hence the high rates of bad drivers with licenses. At the same time, the understaffing leads to long lines, confusion, and complexity. This generates a demand for agents who provide legal time-saving services, such as waiting in lines and help navigating a confusing system.

While such an "overloaded bureaucrat" model with legal agency services could explain the sporadic testing, it struggles to explain the sharp difference in testing between agent users and nonusers. Specifically, if agents are simply offering time-saving devices, why does the audit study reveal that they can so easily bypass the RTO exam? And why do the survey data show such a strong relationship between agent usage and test-taking at the RTO?

This suggests that the dysfunctional system is not from lack of resources alone. Instead, some form of bureaucratic misbehavior is needed. There are two plausible forms of misbehavior. The first is what we call corruption, where the bureaucrats receive bribes (from agents) in order to both speed up the process, but also skip the test (or ignore the test results). The other form of misbehavior could be lack of effort. Instead of monetary benefits, some "lazy" bureaucrats could be enjoying nonmonetary private benefits by simply not making an effort to test individuals. In this world, agents have knowledge of who to approach at the RTO to both speed up the process and avoid testing (e.g., knowledge of who the rubber-stamping bureaucrats are).

These two explanations are clearly hard to disentangle without direct data on bribery. With this in mind, we attempted to collect more qualitative data from both bureaucrats and agents. First, and as already indicated above, actors involved in the audit study were instructed to engage whenever possible in casual conversations with the agents. When this happened, the agents openly discussed the need for bribing bureaucrats. Of the 208 actor-agent interactions where the actor was able to engage in casual conversation, the agents stated that they would need to pay bribes to the RTO in 81% of the cases. Second, IFC research assistants managed to informally interview three officials in Delhi and one in Chennai. The bureaucrats described weekly to biweekly meetings with agents. At these meetings, the agents pay a fixed fee for each of the agents' clients the bureaucrat granted a license

to. The bureaucrats also indicated that the fee does not vary much based on driving ability.

Beyond these qualitative interviews, our main finding in Table VII also raises doubts about a "lazy bureaucrat" interpretation. Once a person is being tested, the additional effort required to administer the test appropriately is minimal. The bureaucrat is already sitting in the car, and even a small amount of attention to the test-taker would allow far greater differentiation of good and bad drivers than we are finding in Table VII. Thus, while lack of effort could explain the low testing rates, it is harder to understand in this view why the testing that does take place is so poor.

Finally, the prices charged by agents can also be informative, since the agent sector appears quite competitive.[29] Their prices should therefore be somewhat commensurate with their input costs. Our data suggest that an agent saves about two hours of time for the applicants. Assuming agents' opportunity cost of time is about Rs 40 per hour, this would suggest that the marginal cost of assisting an individual in getting a license is only about Rs 80. This is an order of magnitude less than the average agent fee we observe in our data, which is about Rs 700.

As a whole, these qualitative and quantitative considerations lead us to favor a view in which at least some of the failures of this system are generated by corrupt bureaucrats working in collaboration with agents.

VII. CONCLUSIONS

Corruption in this study appears to undercut the very rationale for regulation: keeping bad drivers from getting licenses. Agents play a key role in the informal channel, as intermediaries between bureaucrats and applicants. The agent system allows bureaucrats to avoid direct bribery, and the bureaucrats may apply arbitrary failures on the driving exam to entice individuals to use agents. One interpretation of the audit results is that the verifiability of a particular regulatory requirement determines the ease with which corruption can overcome it. This suggests that the social inefficiency results would generalize most readily to other contexts where the socially

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29. During the audit, we found at least six agents at each RTO to secure a price from, each vying for business.

useful part of the regulation is unverifiable by the bureaucrats' principals.

The study illustrates two main points for future research in the corruption literature. First, greater efforts to collect micro data are needed to penetrate the black box of corruption. Had we run a survey simply asking individuals who had obtained licenses whether they paid bribes, we might have concluded that there was no corruption in this bureaucratic system. Instead, the detailed questions on payments and the process of obtaining a license allowed us to isolate the central role agents play in this system. Second, this industrial organization of corruption (e.g., around the agent system) is intriguing and has been largely ignored by the theoretical literature. How do agents manage to develop their contacts with the bureaucrats? How do bureaucrats maintain their relationship with agents? Why is the provision of agents apparently so plentiful, rather than their numbers being restricted? Does the agent system limit the ability of the bureaucrat to more finely price discriminate between time-rushed and nonrushed individuals, as seems to be the case here? These are some of the questions we plan to explore in future work.

APPENDIX I: FINAL PROJECT SUMMARY, BY GROUP

	Total (1)	Comparison (2)	Bonus (3)	Lesson (4)
Individuals in initial session	822	202	295	325
Obtained permanent license, completed survey	409	74	189	146
Obtained permanent license, did not complete survey	17	5	3	9
Obtained temp license, completed final survey	23	4	1	18
Obtained temp license, did not complete final survey	48	15	11	22
Tried to get temp license, but failed	105	29	44	32
Did not try to get temp license	130	48	34	48
Unable to track	90	27	13	50

Notes:
1. This table reports the final project status for the 822 individuals present at the initial sessions. Column (1) presents the data for the full sample, while columns (2)–(4) present the data by experimental group.
2. "Trying" is defined as making at least one trip to the regional transport office after the initial session to speak with an agent or an RTO bureaucrat.

APPENDIX II: PATTERNS OF ATTRITION

Panel A	Age (1)	Married (2)	Student (3)	Employed (4)	Less than primary education (5)	Owns home (6)	Owns car (7)	Minority (8)	Hindu (9)	Muslim (10)	Log(salary) (11)
Attritor	−0.74	−0.14	−0.03	−0.01	0.05	−0.06	0.03	0.06	0.02	−0.01	0.13
	(0.67)	(0.05)***	(0.08)	(0.08)	(0.05)	(0.08)	(0.06)	(0.08)	(0.06)	(0.06)	(0.16)
Attritor* bonus group	−0.48	0.18	0.18	−0.08	−0.03	0.06	0.04	0.02	0.05	−0.06	−0.28
	(1.19)	(0.11)	(0.13)	(0.12)	(0.08)	(0.12)	(0.10)	(0.13)	(0.09)	(0.09)	(0.20)
Attritor* lesson group	1.87	0.31	−0.09	0.09	−0.02	0.06	−0.07	−0.06	0.12	−0.1	−0.17
	(1.05)*	(0.08)***	(0.10)	(0.10)	(0.06)	(0.10)	(0.07)	(0.10)	(0.07)	(0.07)	(0.19)

Panel B	Family member in government (including self)	Have a 2-wheeler license	Have driven a 2-wheeler	Have driven a 4-wheeler	Months known how to drive a 4-wheeler (given drive)	Would pay bribe if the fine is 500 and bribe is 300	Would pay bribe if the fine is 3000 and bribe is 300	Ever bribed	Ever used agent	Predicted trips	Predicted time
Attritor	0	0.01	0.12	0.02	0.48	−0.05	−0.01	0.12	0.07	−0.86	−220.85
	(0.09)	(0.03)	(0.04)***	(0.07)	(0.95)	(0.08)	(0.07)	(0.09)	(0.09)	(0.99)	(208.06)
Attritor* bonus group	−0.14	0.01	−0.11	0	−1.71	0	0.09	−0.1	−0.13	0.04	−72.85
	(0.13)	(0.05)	(0.06)*	(0.12)	(1.48)	(0.13)	(0.10)	(0.14)	(0.13)	(1.28)	(252.62)
Attritor* lesson group	−0.08	−0.03	−0.12	−0.03	−0.43	0.02	0.02	−0.14	−0.07	0.77	318.72
	(0.11)	(0.03)	(0.06)*	(0.09)	(1.29)	(0.10)	(0.09)	(0.11)	(0.11)	(1.54)	(281.77)

Notes:

1. This table reports on patterns of attrition. An attritor is defined as an individual whose final licensing status could not be ascertained by the project staff or who did not fill out the relevant surveys.

2. For each panel, a column gives the results of OLS regression of the dependent variable listed in the column on an indicator variable for an attritor, indicator variables for the bonus and lesson group, an indicator variable for belonging to the lesson group and being an attritor, and an indicator variable for belonging to the bonus group and being an attritor.

3. Standard errors are robust. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

APPENDIX III

The goal of the audit study is to understand whether the agents could obtain licenses under different pretexts, and if so, at what price. Six scripts based on the common barriers individuals face in obtaining a license were written:

Script number	Script
1. Comparison	I have residential proof and proof of age. I know how to drive.
2. Lack of residential proof	I want to get a license but lack residential proof. I am a college student in Delhi and live with friends.
3. Lack of age proof	I know how to drive, but I have no age proof.
4. Lack of ability to drive	I want a driver's license, but cannot learn driving now, as I am extremely busy with my studies.
5. Out of town	Today I will give you all the documents and money. Can you deliver the license to my home, as I cannot come again? Going out of town for some weeks.
6. Need a license fast	Need to get a license as soon as possible. How fast can you get it for me? How much would that cost? [*After the agent asks those questions, ask the following questions*] I need it X (answer they give) minus a few days (so you can say, "I need it in two weeks, or a week?). How much would that cost?" [*After the agent asks those questions, ask the following questions*] "What is the fastest you could get it to me? How much would that cost?"

Individuals were recruited through advertisements on a college notice board. Six men from one college were selected. Each was 18–19 years old and Hindu. All were of similar build and height and wore similar clothes.

Of the 9 RTOs in Delhi, eight were chosen for the audit study. The New Delhi RTO was not chosen, as agents were rarely available there. The audit study was conducted over eight days. The evening before the audit, the actors were told which RTO they would have to visit the next day, and which script they needed to use. The actors only visited each RTO once and were randomly assigned scripts and RTO visits in a round-robin fashion.

In total, 224 agents were approached by six different actors. The actors were trained to talk to the agents about their particular problems in obtaining a license and were asked to inquire whether it was possible to obtain a license and how much it cost. In the main experiment, the subjects reported bargaining with the agents on the price, and therefore, all the actors were trained to bargain with the subjects as well.

After visiting the RTO in the morning, all subjects reported back to the project manager to fill out the debriefing survey. The actors filled out one survey per agent to report whether the agent could or could not obtain the service, and, if so, at what price. If the agent could obtain the license despite the hardship, the actors also reported how the agent was able to do this. The actors were also told to ask the name of the agent in order to try to separate out the different pricing schedules of different agents. In 53% of the interactions, agents refused to reveal their names. We were able to identify 52 agents, but we were unable to determine whether some agents simply gave a different name to each actor.

To obtain additional qualitative data on agents and their interactions with bureaucrats, a series of questions on the work characteristics of agents and their relationship with the bureaucrats were included in the surveys. For example:

- How long have the agents worked at the RTO?
- Did they work at more than one RTO?
- Would the agent give a receipt?
- Did they have to bribe a bureaucrat or did the agent do it?
- Can the agent procure other services?

The actors were shown the debriefing survey prior to interacting with the agents, in order to understand what types of information were needed. In particular, the actors were trained on how to bring up these types of questions in casual conversation with the agent, and not to ask the questions if the agent already offered the needed information. Actors practiced these conversation skills with the project managers prior to their visits to the RTO.

UNIVERSITY OF CHICAGO GRADUATE SCHOOL OF BUSINESS, NATIONAL BUREAU OF ECONOMIC RESEARCH CENTER FOR ECONOMIC AND POLICY RESEARCH, AND INSTITUTE FOR THE STUDY OF LABOR
INTERNATIONAL FINANCE CORPORATION
NEW YORK UNIVERSITY WAGNER SCHOOL OF PUBLIC SERVICE
HARVARD UNIVERSITY AND NATIONAL BUREAU OF ECONOMIC RESEARCH

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