Social Identity and Inequality: The Impact of China's *Hukou* System

Abstract

We conduct an experimental study to investigate the causal impact of social identity on individuals' performance under incentives. We focus on China's household registration (*hukou*) system which favors urban residents and discriminates against rural residents in resource allocation. Our results indicate that making individuals' *hukou* identity salient significantly reduces the performance of rural migrant students on an incentivized cognitive task by almost 10 percent. This negative impact on rural migrant students' performance leads to a significant, disadvantageous shift of their earnings distribution in the piece rate regime. However, the impact of *hukou* identity salience is insignificant in the tournament regime, suggesting that the negative effects on migrant students' performance, particularly girls', may be mitigated when competition is introduced. The results demonstrate the impact of institutionally imposed social identity on individuals' performance, and potentially on inequality.

Keywords: social identity, inequality, field experiment, *hukou*, China
JEL Classification: C93, D03, O15, P36

1. Introduction

A large body of literature documents significant and increasing economic inequality in the emerging economies of the world (in *China*: Kanbur and Zhang, 1999; Chen, 2002; Yao, Zhang and Hanmer, 2004; Ravallion and Chen, 2007; in *India*: Deaton and Dreze, 2002; Datt and Ravallion, 2002). Akerlof and Kranton (2000) incorporate individuals' social identity into a theoretical model of poverty and show that social exclusion can lead to equilibria in which the 'excluded' individuals avoid economic activities that are remunerative. Thus, if we incorporate the psychology and sociology of an individual's identity into economic models of behavior the implications for economic inequality may be much wider.

This paper extends the literature on social identity by investigating whether individuals' identification with an institutionally created underclass can contribute to economic inequality. We focus on China's household registration system – the *hukou* institution. This system categorizes citizens into urban (non-agricultural) and rural (agricultural) residents of a particular location. The urban residents in that location (say a municipality) are favored in resource allocation compared to the rural residents and migrants. We design a framed field experiment (Harrison and List, 2004) to study whether individuals' identities created by this institution affect their performance under incentives, and the distribution of earnings among these different socio-economic groups.

To introduce an exogenous variation in identity salience we adopt a methodology from psychology called priming (Bargh, 2006). Specifically, we randomly assign primary school students in Beijing, with different *hukou* backgrounds, to two treatments. In the identity salience treatment we prime students' *hukou* identity and make it salient through a pre-experiment questionnaire followed by a public verification of their *hukou* status (Shih, Pittinsky and Ambady, 1999; Hoff and Pandey, 2006, 2012). In the control treatment students' *hukou* identity is kept

private. We then compare their performance in incentivized cognitive tasks, solving puzzles, between the two treatments to examine the effects of *hukou* identity.

Our experimental design follows Hoff and Pandey (2006, 2012) who were the first to explore how social identities contribute to inequality through its impact on individuals' performance on incentivized tasks in India. This paper extends their investigation to China – the world's most populous country and fastest growing economy – and more importantly, to a broader horizon in several ways. First, we explore the impact of identity within a socio-political system that is almost polar opposite of India's. Unlike India, China is an ethnically homogeneous society – its population is 91.5 percent ethnic Han (National Bureau of Statistics 1994-2003). While the caste system is based on factors that include ethnicity and occupation, the rural-versus-urban categorization by China's *hukou* system is less complex. The relatively simple social categorization by *hukou*, therefore, provides cleaner evidence on how powerful institutional exclusion can be, even in an ethnically homogeneous society, in influencing labor market outcomes through individuals' social identities. Second, like the caste system, *hukou* is an ascriptive order (i.e. it is assigned by birth) but unlike caste or ethnicity, migrant identity in China is administratively created to control spatial labor mobility and reinforced through merely decades of differential administrative treatment of rural-urban residents. We, therefore, have an opportunity to test whether systemic disparity between households over a short period of time (compared to thousands of years for caste and ethnic disparities) can be internalized in ways that affect performance under incentives. This provides us with more powerful evidence on the impact of institutions and social exclusion in creating identities. Finally, as a policy intervention in the domestic labor market, China's *hukou* system was initially designed to prevent potential problems that may be caused by massive rural-urban labor migration. By focusing on migrant

identity created by such a policy this paper carries broader implications for policy making in other economies where regional labor migration or global immigration may pose challenges in the labor markets.

Our results indicate that when rural migrant students' 'inferior' *hukou* identity is made salient, they significantly underperform by almost 10 percent in the incentivized cognitive task compared to when their identity is not salient. The performance of local urban students, the 'high' status *hukou* holders, insignificantly improves when their *hukou* identity is primed. When we disaggregate the sample by the payment regime we find that under piece rate payments the effect of making identity salient is large and significant for both migrants (negative effect) and non-migrants (positive effect). These effects are, however, insignificant under the mixed tournament payments. In addition, we find that making the 'inferior' identity salient for rural female migrants significantly enhances their performance in tournament. This finding suggests that competition may reduce the debilitating effect of salience of the inferior identity of migrants, particularly migrant girls.

The significant effect of identity salience on the performance of students leads to a drastic shift in the experimental earnings distribution – to lower quintiles for rural migrants and higher quintiles for local urban residents under piece rate payments. The results show that the identities created by the *hukou* system affect individuals' performance under incentives and may have a causal impact on widening the income gap between migrants and non-migrants in urban China. They suggest that a policy intervention based on categorizations of citizens and differential treatments may be internalized by individuals, and hence lead to unintended, far-reaching economic consequences.

There exists a large literature on the impact of the *hukou* system on children's health and

educational outcomes in *rural* China. Our research extends this literature to the relatively unexplored urban context with two broad implications.[1] First, existing literature suggests that high levels of inequality may have adverse implications for labor productivity (Cohn et al., 2011). This in turn may have adverse consequences for sustaining economic growth (Berg, Ostry, and Zettelmeyer, 2012; Berg and Ostry, 2011). Our results, thus, highlight the importance of avoiding discriminatory social and economic policies in order to ensure inclusive and sustainable economic growth in developing countries. Second, the results underline the need for more research on the impact of social exclusion on individual behavior and the effectiveness of existing redistributive policies that aim at reducing social exclusion. For instance, while affirmative action has generated tremendous policy debate, there is limited evidence of its impact on social cohesion as well as economic efficiency.

The remaining sections of the paper are organized as follows. Section 2 places this study in the context of existing literature. Section 3 provides a brief background on China's *hukou* system. Section 4 describes the experimental design and the data. The results of the analysis and its discussion are presented in Section 5. Section 6 concludes.

2. Literature Review

The importance of incorporating social identity into economic analyses is stressed by Akerlof and Kranton (2000). An expanding theoretical (Shayo, 2005; Fang and Loury, 2005; Benabou and Tirole, 2007; Horst, Kirman and Teschl, 2006) and a growing number of experimental economics studies show that social identity has important impact on preferences and economic

[1] Studies suggest that educational attainment of potential migrants in rural areas is lowered due to occupational segregation in cities (de Brauw and Giles, 2008); the health and educational attainment of children is adversely affected due to the absence of parents who have migrated to the cities (Lee and Park, 2011; Meng and Yamauchi, 2012). Unlike this existing literature the focus of our study is migrant children in *urban* areas.

behavior (Eckel and Grossman 2005; Goette, Huffman and Meier 2006; Charness, Rigotti and Rustichini 2007; Chen and Li 2009; Benjamin, Choi and Strickland, 2010; Benjamin, Choi and Fisher, 2013; Chen and Chen 2011). To the best of our knowledge, only two studies investigate the impact of social identity on economic outcomes in developing countries experimentally. Hoff and Pandey (2006, 2012) find that social identity – a product of history and culture – shapes one's belief system and has a pronounced impact on an individual's performance under incentives. They show that making caste salient to middle school male students in rural India lowers the performance of low-castes relative to high-castes even when rewards for performance depend solely on individual effort. Hoff and Stiglitz (2010) discuss why ideologies of social unworthiness, as cognitive frames, can be so powerful.

Concerns about rising inequality accompanying rapid economic growth have been growing in recent years. In China, income inequality has risen significantly since economic reforms were initiated in 1978 (Ravallion and Chen, 2007; Yao, Zhang and Hanmer, 2004; Chen, 2002; Kanbur and Zhang, 1999). Seventy percent of the overall income inequality in China was accounted by rural-urban inequality during 1983-1995. Further, the contribution of intra-urban inequality to overall inequality increased by 96 percent over the same period (Kanbur and Zhang, 1999). Behind these inequality statistics lie rapid urbanization (Ravallion and Chen, 2007) and the accompanying labor migration from rural to urban areas – the largest in world history. Because of the *hukou* institution, migrant workers, most being unskilled rural laborers, are treated as 'outsiders' with limited access to economic resources and opportunities (Liu, 2005).

Research suggests that on average those with a rural *hukou* are socio-economically worse-off than those with an urban *hukou* in China.[2] However, due to confounding unobservable

[2] Liu (2005) finds that compared to urban residents those who obtained urban *hukou* later in their lives have significantly lower educational attainment and healthcare benefits. Lu and Song (2006) find that local urban workers

individual characteristics, *causality* between self-perceptions of *hukou* status and economic behavior is hard to establish using survey data or direct field observations. Hence, the current literature almost entirely focuses on restricted labor mobility and discrimination in resource allocation in the *hukou* system to explain rural-urban and intra-urban economic inequality (Liu, 2005; Lu and Song, 2006; Whalley and Zhang**,** 2007).[3]

3. The *Hukou* System and Social Identity in China

The modern-day household registration or *hukou* system evolved gradually following the success of the communist revolution in China in 1949. Under this system every citizen was legally bound to register her or his single permanent place of residence (*hukou suozaidi*) say city *x* in province *y*, and the type of *hukou* (*hukou leibie*) which was either agricultural (rural) or non-agricultural (urban). Strict controls were imposed on mobility of rural *hukou* holders to urban areas, perpetuating discrimination against them in several ways. Employment opportunities favored urban *hukou* holders in cities (Chan and Zhang, 1999). Urban *hukou* holders, but not rural *hukou* holders, were eligible for the ration stamps that guaranteed subsidized products (Liu, 2005). Urban residents (particularly employees of the state-owned enterprises) were granted generous fringe benefits including subsidized housing, health services and education. In contrast, such benefits to rural residents were provided by their communes or villages, which were usually of inferior quality and of highly varying reliability (Lin, Cai and Li 1996; Cheng and Selden, 1994). A household's *hukou* was (and continues to be) inherited by the next generation. *Hukou* status and thereby educational attainment and eventually employment opportunities of the next

earn substantially higher hourly wage than those without local urban *hukou*. Whalley and Zhang (2007) show that removing *hukou* barriers to domestic labor mobility will significantly reduce inequality and increase economic efficiency gains.

[3] Some recent studies use survey data on both migrants and local residents in urban China to explain earnings differentials based on the observed characteristics of the two groups (Qu and Zhao, 2012).

generation of rural populace was restricted by birth.[4]

Following China's transition from a centralized to a market economy starting in the late 1970s, the number of people migrating in search of jobs surged after market reforms (and abolition of communes) and an easing of government regulations on spatial migration. The past three decades have, thus, witnessed a drastic increase in the number of 'temporary' non-*hukou* residents (either registered or non-registered) in urban centers. However, these migrants are not entitled to urban benefits unless their *hukou* is converted to a full urban one. Rural-urban *hukou* conversion is possible but only through very limited channels.[5] Thus the *hukou* system transitioned from an institution of direct to indirect control over spatial migration.

As of when this study was conducted, the following major and persistent gaps between rural migrants and urban residents existed in large urban centers: (1) labor market and occupational segregation: employment in government offices and state-owned enterprises in cities continued to be unavailable to rural migrant workers unless they converted to an urban *hukou*; (2) lack of social insurance and social welfare benefits for rural migrant workers such as unemployment and health benefits. In addition, government subsidized low-rent housing in large cities is only available for local urban *hukou* holders.

It is important to realize that these factors, along with the resulting social segregation of migrants, suggest that the experience of a rural migrant in China is *not* transitory as in other developing countries (Chan, 1996; Solinger, 1999). Geographical control of rural populace until the 1970s has been replaced by economic and social divisions between rural and urban *hukou* holders *within* the urban areas of China.

[4] Before 1998, children of rural-urban marriages had to follow the mothers' *hukou* type (Chan and Zhang, 1999). They are now allowed to inherit either the fathers' or the mothers' *hukou*.

[5] Possible channels for rural-urban *hukou* conversion include recruitment by state-owned enterprises, enrollment in higher education institutions, and land acquisition by government (Chan and Zhang, 1999). Since 1992 urban *hukous* are also sold for high fees to eligible investors, property buyers and professionals.

The Hukou System and Schooling in Urban China

Chinese citizens are entitled to subsidized public education only in the area of their legal permanent residency. In most cities non-local *hukou* holders cannot enroll their children in local schools unless the schools have quotas for 'guest' students. These 'guests' usually have to pay higher fees than local *hukou* holders, and the fees can be a significant proportion of migrants' incomes (Xinhua News Agency, July 10, 2002).[6] Slum schools built by migrant workers exclusively for their children are typically opposed by local authorities, or stringent physical and financial requirements are imposed on them to obtain a legal status.

Due to the *hukou* classification system, urban areas contain both non-agricultural and agricultural *hukou* population (Chan and Zhang, 1999). Thus the population in large municipalities such as Beijing and Shanghai usually consist of four different *hukou* categories: local urban (residents of the urban areas of municipality), non-local urban (migrants who are urban residents of less-developed cities), local rural (residents of the rural areas of municipality), and non-local rural *hukou* holders (migrants from rural areas of provinces outside municipality). The local urban residents are considered to be at the top of the social hierarchy while the migrants from rural areas are typically at the bottom. But the comparison of socio-economic status between local rural and non-local urban is not clear. Due to this ambiguity and the limited number of students in these two categories in our sampled schools, we excluded the local rural and non-local urban *hukou* holders from this study, and focused on the two sharply disparate groups. Since our experiment was conducted in Beijing, this study includes Beijing urban

[6] According to the report, "..... These (migrant) schools teach between 20 and 3,000 students each and charge about ¥300 (US$36.1) each term. When migrant children go to public schools, their parents have to pay ¥500 (60.2 US dollars) in tuition fees each term, plus ¥1,000 (120.5 US dollars) for selection of the school and ¥1,000 to ¥30,000 (3614.5 US dollars) as sponsorship."(http://www.10thnpc.org.cn/english/China/36594.htm).
Migrant laborers in Chinese cities earn an average of ¥966 per month in 2006 according to a National Bureau of Statistics Survey Report. (http://english.peopledaily.com.cn/200610/22/eng20061022_314208.html)

(hereafter **H**igh) and non-Beijing, rural (hereafter **L**ow) *hukou* holders.

4. Experimental Design and Implementation

Our experiment adopts the design of Hoff and Pandey (2006, 2012). We manipulate *hukou* salience – subjects' *hukou* identity is made salient and public in the identity salience treatment, and is kept private in the control treatment. We also vary the payment regime by using piece rate and tournament games in each of the treatments.

Incentivized cognitive task The experiment was conducted using paper and pencil in a standard classroom setting with six subjects (3 H and 3 L types) seated at separate desks with fairly large distance from one another. Randomly assigned subject ID numbers were used to ensure anonymity of decisions throughout the experiment. Before the experiment started participants were greeted by a female experimenter and each paid 3 Chinese yuan (¥3) participation fee upon arrival. The experimenter then explained the tasks and rules. We used level-2 maze puzzles from Yahoo! games (Gneezy, Niederle, and Rustichini, 2003; Niederle and Vesterlund, 2007; Hoff and Pandey, 2006). The task was to find a path through the field from one side to the other without crossing the solid lines (Appendix A). The experimenter explained the rules using a simple maze, and showed how to solve another one of similar difficulty level as those used in the experiment.[7] Subjects were given five minutes to practice with an additional maze, then participated in two 15-minute rounds of experiment. In each round, they were given a booklet of 15 mazes, and had up to 15 minutes to solve as many as possible. All the thirty mazes were of identical difficulty level.

The homogeneous reward system (hereafter the Pure Piece Rate (PP) regime) used piece rate compensation in both rounds – subjects were rewarded with ¥1 for each maze solved

[7] The instructions are adopted from Hoff and Pandey (2006, 2012). The English translation of the experimental instructions is included in Appendix B.

correctly. The heterogeneous reward system (hereafter the Mixed Tournament (PT) regime) consisted of piece rate in the first round (¥1 per maze), and tournament in the second round in which only the winner (who solved the most number of mazes in the session) was rewarded with ¥6 per maze and other subjects received zero.[8] In the case of a tie, each of those who solved the highest number of mazes was rewarded with ¥6 per maze.

Subjects were told that the task consisted of two rounds. But the instruction for the second round, including the payment scheme, was not given until after round one. Therefore, the payment structure was identical in round one for the PP regime and the PT regime. At the end of each round, maze booklets were collected and left outside the classroom by the experimenter for the graders. Since the experimenters did not leave the 'labs' at any point of time during the session, subjects were aware that their mazes were not graded by their experimenters. A survey was conducted at the end to collect demographic information. Thereafter, the grading results were handed to the experimenters, subjects were then informed about their performance (and results of the tournament, if applicable), paid individually in private, and dismissed.

Identity manipulation There were two treatments in our experiment – the identity salience treatment and the control treatment. The identity salience treatment differs from the control treatment by manipulating the salience of one's *hukou* identity before the incentivized tasks. Priming, a technique often used in psychology, introduces certain stimuli ("primes", including image, audio, or text such as a questionnaire and an article) to activate subjects' knowledge of social structures. As shown in a large literature in psychology (see Bargh, 2006 for a review) and a few recent economic studies (Hoff and Pandey, 2006, 2012; Benjamin, Choi and Strickland, 2010; Benjamin, Choi and Fisher, 2013), priming social identities may influence behavior and attitudes.

[8] To avoid zero payoffs we did not use tournament in both rounds.

In this study, we made *hukou* identity salient in the identity treatment by using a survey and publicly verifying subjects' *hukou* identity at the beginning of the experiment, while in the control treatment subjects' *hukou* identity was kept private and not primed. In the pre-experiment survey used to prime *hukou* identity, subjects were asked where they were born, whether they spoke Beijing dialect at home, whether they (or their classmates or teachers) considered themselves as a Beijing local, and how much miscellaneous fees they were charged by the school at the beginning of the semester. They were also asked to compare Beijing local students with 'guest' students on academic performance, class participation, extracurricular activities and achievement, and daily spending. After the survey, individuals' *hukou* was publicly verified by the experimenter along with other factual information in the following order: name, date and month of birth, and *hukou*.[9] This procedure simulated some real life scenarios these students experience in school. For example, to determine the amount of miscellaneous fees due, students' *hukou* status needs to be verified, sometimes in public.[10] In the control treatment, the sessions started with neither the survey nor public verification of *hukou* and proceeded directly to the incentivized cognitive task.[11]

Selection of subjects Subjects in our experiment were 8-12 years old students recruited at four elementary public schools in Beijing. These schools suited the requirements of our experiment on several fronts. On average, one-third of enrolled students in the sampled schools

[9] The experimenter said in public, "According to the information from the school's registrar's office, your *hukou* belongs to [province/city] and it is a(n) [agricultural/non-agricultural] *hukou.*" Student's year of birth was not revealed to avoid affecting their self-confidence given that they were from three different grades.

[10] Unlike in many western countries, date of birth, students' grades and, similarly *hukou* type, are not treated as confidential information in Chinese culture.

[11] Note that there is a subtle difference in the design, and therefore the interpretation of findings, between our experiment and Hoff and Pandey (2006, 2012). In the latter study all subjects' castes were verified privately before they were assigned to different treatments. Hence caste identity was made privately salient irrespective of the treatment condition. In our study subjects' *hukou* identity was made privately salient through the pre-experiment survey only in the salience treatment. This was followed by public verification in the salience treatment as discussed above. Thus any identity effects we observe would be attributable to the overall salience of *hukou* identity - public as well as private.

had a non-Beijing *hukou*. The proportion of students from migrant families was comparable to the migrant population of the Beijing metropolitan area, and these schools were located in districts where per capita GDP was comparable to the average in the Beijing municipal area. We obtained individual *hukou* records, in advance, from the schools' registrar's office for assigning subjects to experimental sessions.

The study focuses on primary school students rather than adults for several reasons. First, focusing on young individuals allows us to avoid using selective samples of people whose decision to migrate to cities may be systematically correlated with their abilities and intrinsic preferences.[12] Second, using adult subjects may introduce potential confounds since their accent and clothing usually provides clues to where they originate from and give away their *hukou* identity even in the absence of the *hukou* identity prime. Since our subjects wore identical school uniforms and, relative to adults, the young tend to pick up local accents easily, the choice of subject pool ensured that it was difficult to observationally infer one's *hukou* type. Third, a study that identifies potential adverse impact of the *hukou* system on young migrants would suggest the importance of policy interventions starting at young ages. Although our sample was young, almost all participants understood what their *hukou* type was. Last but not least, school children of this age are expected to respond to monetary incentives given that they tend to receive pocket money or allowances from their parents.[13]

We recruited subjects from among 3-6 graders at three schools and among 3-5 graders in

[12] However, to the extent that parents of children who migrate to urban areas are a selective sample, our L subjects could still be subject to this bias. This does not threaten the internal validity of our experiment. Furthermore, if a recent finding by Lai et al. (2012) that migrant children perform better on cognitive tests as opposed to local *hukou* holders in public schools in Beijing suggests 'positive' selection, any effect of social identity on L subjects in our experiment could potentially be a downward biased estimate of the population level impact of *hukou* identity on L type students in urban *and* rural areas.

[13] A study conducted jointly by the China Youth and Children Research Center (CYCRC) and the Bank of China (2010) shows that 47.1% of primary school age children living in urban areas receive pocket money for doing household chores (http://www.cycs.org/Article.asp?Category=1&Column=444&ID=16893). Liu (2011, chapter 4) also discusses sources of children's pocket money.

one. Each session of the experiment consisted of six subjects of the same gender with three from each of the H and L *hukou* types. To minimize the probability that students knew one another *a priori*, we obtained student rosters and stratified children by gender, grade, grade section, and *hukou* type. Three students of the same *hukou* type were randomly selected, each from a different grade. Two students from the same grade (with different *hukou* types) were randomly selected, each from a different class section. The sessions in both treatments were formed in the same way.

The experiment was conducted in May and December 2007, and December 2008. At each school the experiment included four conditions including the PP and PT control treatments as well as the PP and PT identity salience treatments. Table 1 summarizes the features of experimental sessions. Experimental sessions were conducted separately for boys and girls during class breaks on school days. In total we conducted 72 sessions (418 subjects) with mixed *hukou* types, including 61 full sessions (40 male and 21 female sessions) and 11 sessions with fewer than 6 subjects. Average earnings per subject were ¥19.70 in the control treatment and ¥19.60 in the identity salience treatment, about three times the average weekly allowance that these students received from their parents.

As mentioned above, pre and post-experiment surveys were conducted to elicit subjects' self-perceptions and demographic characteristics.[14] The pre-experiment survey to prime identity in the salience treatment (Appendix C) shows that H subjects were both more likely to have been born in Beijing and lived longer in Beijing if born elsewhere, relative to L subjects. The L subjects were less likely to speak in the Beijing local dialect and their self-image was highly correlated with their *hukou* type. According to the survey data, only 9 percent of L subjects (compared to 85 percent of H subjects in row 4) considered themselves Beijing locals and only

[14] Appendices C and D summarize the responses from the pre-experiment survey in the salience treatment and the post experiment surveys in both treatments, respectively. The survey questionnaires are available on request.

21 - 22 percent of L subjects compared to 80 - 89 percent of H subjects expected to be considered a Beijing local by their fellow students or teachers (rows 5 and 6). Subjects were also asked to compare the characteristics of local and migrant students (rows 8-15). Both local and migrant students perceived the L subjects to be less active participants in class and in extracurricular activities relative to the H subjects (rows 10-13). Both also held the perception that the migrant students studied harder and were more careful with money (rows 8-9 and 14-15), stemming perhaps from the relatively disadvantaged background of migrants as indicated by the statistics from the post experiment survey in Appendix D: parents of the migrants were less likely to hold a government or public sector job (considered prestigious in Chinese society) and were less likely to have college or graduate degrees (rows 1-6 in Appendix D). The L subjects also perceived own academic performance to be poor relative to other students in their grade. In contrast, the H subjects ranked their academic performance higher (row 7 in Appendix D). These survey responses suggest that the L subjects perceived themselves as less able and less intelligent than the H subjects, consistent with the stereotype of rural migrants in Chinese society.

Table 2 presents subjects' characteristics by *hukou* type and treatment. For each *hukou* type it shows insignificant differences across treatment in almost all observable characteristics, indicating successful randomization. Specifically, the table shows no significant differences in the average age or grade, the proportion born in Beijing, the years they had lived in Beijing (if not born in Beijing) and, whether the father or the mother had a college or graduate degree. The proportion of H subjects who had played similar games before is comparable by treatment, but marginally more L subjects had played these games before in the control than in the salience treatment ($p = 0.086$). In our regression analysis we will control for this difference. The average number of other students that a subject had prior acquaintance with ranged from 1.3-1.5 per

session, comparable to Hoff and Pandey (2012) and this does not differ by treatment of each *hukou* type.

5. Results

In this section, we investigate whether and how the activation of *hukou* identity influences individual's performance in the maze games. We first present the descriptive statistics and then discuss the regression analysis which incorporates individual and school characteristics. The analysis excludes 11 sessions which had fewer than 6 subjects due to school absence of pre-selected subjects on the day of the experiment. We, therefore, have 366 subjects in our sample. Our results are, however, consistent when we include the entire sample in the analysis. They are available on request. In the analyses, we first show results by pooling the data across payment regimes (PP & PT) and gender groups. We then split the sample on one dimension: by payment regime or gender group; and then on two dimensions: by payment regime *and* gender group.

Figure 1 shows the average number of mazes solved by treatment and *hukou* type. P values of t tests in pair-wise comparisons are reported in Table A1 in Appendix E. Figures 1a-1c in the first row describe the data for all regimes (PP&PT), pure piece rate (PP) and mixed tournament (PT), respectively. Figures 2a-2c in the second and 3a-3c in the third row describe the data in the same sequence for boys and girls separately. Figures 1a and 1b show that, compared to the control treatment, the L type perform significantly worse when *hukou* is made salient in the pooled sample (PP and PT, $p = 0.071$) and in the PP regime ($p = 0.023$). The performance of the H type improves significantly when *hukou* identity is made salient in the PP regime ($p = 0.011$) and insignificantly in the pooled sample ($p = 0.250$). In the PT regime there is an insignificant effect of identity salience on the performance of the L type as shown in Figure 1c. Overall, therefore, we observe significant differences in performance between H and L in the salience

treatment in favor of the H type in the PP regime (p = 0.002) as well as the pooled sample (p = 0.004).

Similarly, Figures 2a-2c for boys show a decline in the performance of the L type due to identity salience in all three cases but it is significant in the pooled sample (p = 0.052) and PP (p = 0.080). Overall, the H type boys over perform, relative to the L type boys as the result of *hukou* salience in the pooled sample (p = 0.005) and in PP (p = 0.008). Figures 3a-3c indicate that the performance of L type girls, overall and in PP, falls in the salience treatment but this decline is significant only in the PP regime (p = 0.034). There is no significant difference in performance by L type girls relative to the H in the salience treatment.

Figure 2 focuses on the impact of identity salience on experimental earnings (excluding the ¥3 participation fee). For each payment regime we rank subjects (regardless of gender and *hukou* background) based on their experimental earnings in the control and the salience treatments, respectively. We then compare the earning distributions between treatments in the pooled sample (Figure 2.1), in the PP (Figure 2.2), and in the PT (Figure 2.3) regimes. Bars with solid (dashed) border show the distribution in the control (salience) treatment, with H's distribution stacked above the L's.

Confirming the results in Figure 1, in Figure 2.1 we find that due to identity salience the proportion of H subjects with below median earnings falls by 12.8 percentage points: from 54.2 to 41.4 percent (p = 0.093). [15] The proportion of L subjects with below median earnings increases insignificantly by 1.3 percentage points (p = 0.867) in the salience treatment. Figure 2.2 indicates a rightward shift of the earning distribution for H subjects and a leftward shift for L subjects as a

[15] We sum up the proportion of each subject type in the 0~50th percentile and divide that number by the total proportion of that subject type (50 percent) in the control treatment, e.g., [(13.2+13.9)/50]*100= 54.2 percent. Similarly, the proportion of H subjects with below median earnings is [(12.6+8.1)/50]*100= 41.4 percent. Figure 2 pools data for females and males, for each *hukou* type. The pattern is similar if the distributions are separated by gender.

result of *hukou* priming in the PP regime. Specifically, the proportion of L subjects ranked below the median earning rises by 19.4 percentage points: from 38.9 percent in the control treatment to 58.3 percent in the salience treatment (p = 0.066). The proportion of H subjects ranked below the median earning drops by 16.7 percentage points from 58.3 percent in the control treatment to 41.7 percent in the salience treatment (p = 0.116). In contrast, we find no systematic changes in the earning distribution for either *hukou* type in the PT regime in Figure 2.3.[16]

5.1 *Aggregate Effects of Hukou Salience*

We use the following school fixed-effects model to analyze the impact of identity salience on individual performance:

$$Y_{is} = \beta_0 + \beta_1 L_i + \beta_2 salience_i + \beta_3 (L_i \cdot salience_i) + \Gamma \vec{X} + \alpha_s + \eta_{is}$$

The dependent variable of interest (Y_{is}) is the number of mazes solved by individual i in school s. The independent variables include dummy variables for the identity salience treatment (*salience*), low *hukou* type (L) (H type is the omitted category), and their interaction term to allow the impact of salience to differ by *hukou* type. The coefficient estimate β_1 measures the difference in performance between the two *hukou* types in the control treatment. β_2 is the impact of salience on the H type *hukou* holders and $(\beta_2 + \beta_3)$ is the impact of salience on the L type. Thus $(\beta_1 + \beta_3)$ is the difference in performance between the two *hukou* types in the salience treatment. The control variables in $\vec{X}$ include gender (male), grade, whether the student had played similar or same maze games before. In the analysis we also include round specific effect (i.e., round 2 of piece rate or tournament) to control for improvement in performance due to learning over time.[17]

[16] Note that in the PT regime, round 2 earnings would be nil for those who did not win the tournament. Tournament winners received ¥6 per maze solved. As a result, we have large variance in experimental earnings in the PT regime.

[17] There is a significant correlation of 0.7 between grade and subjects' age. Results are consistent using age or grade. The analysis includes the round 2 fixed effect whenever we observe subjects' performance over two rounds. In the

School fixed effects, α_s, capture unobservable, school-specific characteristics. η_{is} is the error term. Standard errors are clustered at the individual level. Using the same specification, we also analyze the impact of *hukou* salience on three other outcomes: the likelihood of solving the most mazes, aggregate experimental earnings, and the distribution of aggregate earnings. In the bottom panel of each table discussed below, we report the direct effects of *hukou* salience on the L type ($\beta_2 + \beta_3$), and the H vs. L differences in the salience treatment [$-(\beta_1 + \beta_3)$]. A positive number for [$-(\beta_1 + \beta_3)$] is interpreted as the H type performing better than the L type.

Table 3 focuses on the determinants of individual performance in the maze game. Column 1 shows the results for pooled PP and PT regimes. There is an insignificant difference in the performance of H and L types in the control treatment (β_1). While identity salience has an insignificant effect on the H type's performance (β_2), it significantly reduces L's performance by 0.714 mazes ($\beta_2 + \beta_3$, p = 0.018, row (a) of the bottom panel). This leads to a significant difference in the performance of the two types in salience – the H type solve 0.557 more mazes ($-(\beta_1 + \beta_3)$, p = 0.048, row (b) of bottom panel) in the identity salience treatment relative to the L type. Given that the L and H types solved 7.4 and 7.3 mazes, respectively, on average in the control treatment for the PP&PT sample, the results suggest that identity salience leads to a significant 9.6 percent fall in the L type's performance. The H type's performance improved, albeit insignificantly, by 2.3 percent.

In the PP regime (column 2), L type's performance exceeds H's by 1.069 mazes (β_1, p = 0.040) in the control treatment. However, making *hukou* identity salient decreases L's performance by 1.090 mazes (p = 0.012, row (a) of bottom panel) and increases H's by 0.856 mazes (p = 0.081) compared to the control treatment. Thus the H type performs better than the L

pooled analysis (PP and PT), fixed effects of round 2 for piece rate and tournament are included separately. We do not have this control variable in Tables 5 and 6 since the dependent variables, i.e., the total experimental earnings and the distribution of earnings, are aggregated over the two rounds.

type by 0.876 mazes in the salience treatment (p = 0.023, row (b) of bottom panel), reversing L's lead over H in the control treatment. This impact on both *hukou* types is economically substantial - effects of *hukou* salience represent 14.3 percent drop in performance by the L type and 12.8 percent improvement by the H type in the PP regime. In the PT regime (column 3), the identity salience has an insignificant impact on the performance of the H and L types. Note, however, that the impact of salience on L's performance and the H vs. L difference under salience treatment are qualitatively similar across the pooled sample, PP and PT regimes (rows (a) and (b) of bottom panel).

Next, we analyze the results by gender in Table 3. Columns 4-5 show that results for both boys and girls in the PP&PT pooled sample are consistent with those in columns 1-3. To keep the discussion concise, we focus on columns 6-9 where results are further disaggregated by gender and payment regime. In the PP regime results are similar for boys and girls (columns 6 and 7), and are consistent with results for the PP sample (column 2). Specifically, in the PP regime, identity salience increases the H type's performance by 0.712 for boys (p = 0.271) and 1.055 for girls (p = 0.171), while it reduces the L type's performance by 0.997 for boys (p = 0.085) and 1.203 for girls (p = 0.062). For both gender groups, identity salience makes the H type perform better than the L type by 0.794 mazes for boys (p = 0.097) and 0.991 for girls (p = 0.142), reversing the L type's lead over H in the control treatment. Tests of the equality of coefficients across regression models (column 6 vs. 7 in the bottom panel of Table 3) cannot reject the equality of these coefficient estimates across gender groups for all pair-wise comparisons. In contrast, columns 8 and 9 show that in PT, identity salience affects neither *hukou* type's performance for both boys and girls. The estimates are, however, of opposite signs for boys and girls. In addition, tests of the equality of coefficients across regression models suggest that the

treatment effects vary across payment regimes (columns 6 vs. 8, 7 vs. 9 in the bottom panel of Table 3). These observations highlight the need for closer investigation into the differing impact of salience across payment regimes. We turn to this issue below.[18]

Recall that PP consists of piece rate in both rounds whereas PT consists of piece rate in round 1 and tournament in round 2. Thus, disaggregating the data by round allows us to better unpack the influence of salience under different payment regimes. Specifically, we compare the impact of salience between piece rate (in round 2 of PP) and tournament (in round 2 of PT). Results are presented in Table A2 of Appendix E in the right panel. For completeness and as a robustness check on results discussed above, we present results using round 1 of the PP&PT pooled data in the left panel of Table A2.[19] The coefficient estimate on *salience* (γ_1) in columns 1-4 shows that under piece rate, identity salience decreases L boys' and L girls' performance (albeit insignificantly for the latter), consistent with results in Table 3. Results in the right panel provide new insights: for H boys and H girls the positive effects of salience on performance in piece rate are offset in tournament, shown by the negative coefficients on the interaction of tournament with salience (-2.031, p = 0.049 for H boys; -0.895, p = 0.541 for H girls, columns 5-6). This suggests that the H subjects, particularly boys, may slack off in tournament, compared to piece rate when they know they are competing with the L type. In contrast, the significant, negative impact of salience for L boys and L girls in piece rate (-1.107, p = 0.099 for L boys; -

[18] Across all columns in Table 3, the effects of other covariates are consistent with our expectations. The large positive coefficient of *round 2* in both payment regimes suggests substantial improvement in performance over time. Boys solved more mazes than girls as shown in columns 1-3. The higher the grade, the better is the individual's performance. Previous experience with similar or the same maze games does not increase one's performance. Including or excluding other control variables, such as the number of others known in the session, pocket money received, parental education and occupation does not affect our results. These results are available on request.

[19] Analyses in Table A2 are based on columns 4-5 in Table 3 with two extensions: first, the PP&PT pooled data are disaggregated by round; second, the analyses are conducted for each gender and *hukou* sub-group, i.e., H/L boys/girls, to avoid a complicated interpretation of results from triple interaction terms in the regression analysis. The coefficient estimate of γ_1 shows the effect of salience on performance in piece rate, γ_2 the difference in performance between tournament and piece rate in the control treatment, ($\gamma_1+\gamma_3$) the effect of salience on performance in tournament and ($\gamma_2+\gamma_3$) the difference in performance between tournament and piece rate in the salience treatment.

1.582, p = 0.023 for L girls, columns 7-8) is mitigated by introduction of tournament as suggested by the positive coefficients on the tournament and salience interaction terms (0.996, p = 0.297 for L boys; 2.643, p = 0.010 for L girls). Therefore, when identity is made salient, L girls solved 1.716 more mazes in tournament ($\gamma_2+\gamma_3$, p = 0.016) than in piece rate. This suggests that making *hukou* identity salient induces L girls to perform substantially better in competition relative to piece rate.

As a further robustness check, we next examine how identity salience influences the likelihood of solving the most mazes, which is also the likelihood of winning in the tournament round (round 2) of the PT regime, in Table 4. We estimate our model using a logit specification and report the marginal effects. Several observations emerge across *all* specifications. First, the difference in the likelihood of solving the most mazes is not different from zero between the H and L types in the control treatment. Second, the effect of salience is positive for the H type (β_2) but negative for the L type ($\beta_2 + \beta_3$) although both effects are insignificant. Third, the H type outperform the L type in the salience treatment since the estimate $[-(\beta_1 + \beta_3)]$ is positive across all specifications. This H-L difference in the salience treatment is statistically significant and economically sizable in the PP&PT pooled sample and in the PP regime (columns 1-2). Specifically, the likelihood of solving the most mazes is 10.8 percentage points higher for the H type than for the L type in the PP&PT pooled sample (p = 0.014), and is 12.9 percentage points higher in the PP regime (p = 0.028), when *hukou* identity is made salient. Column 5 shows that H type girls have a significant 18.4 percentage point advantage over L girls across payment regimes (p = 0.013, row (b) of bottom panel). Disaggregating the results by gender and payment regime in columns 6-9 further confirms our observation of the H type's advantage in solving the most mazes over the L type in the salience treatment. This advantage is estimated to be 12.4

percentage points for boys in PP (p = 0.070), 14.6 percentage points for girls in PP (p = 0.200), 3.3 percentage points for boys in PT (p = 0.711), and 21.2 percentage points for girls in PT (p = 0.020). These results are largely consistent with those in Table 3.

Thus, in both Tables 3 and 4, our results indicate that the performance of the L type relative to the H type is significantly lower, due to identity salience, in both the pooled sample and in the PP regime. In the PT regime, however, the effect of salience on performance of either subject is insignificant. However, even though the performance of L girls in competition improves significantly when *hukou* is made salient, their likelihood of solving the most mazes in PT is significantly lower relative to the H girls in salience as suggested by results in Table 4.[20] These findings lead us to our first result.

Result 1 (Performance). Making *hukou* identity salient significantly reduces L's performance relative to H's in the pooled sample and when payments are made on piece rate basis. This result is insignificant in the tournament regime, suggesting that competition may diminish the negative effect of making migrants' low status salient on their performance. This may be particularly true for migrant girls.

Result 1 implies that one's *hukou* identity, when made salient, may distort individual's performance on incentivized tasks. What does this distortion entail regarding the income distribution across different *hukou* groups? Presume that the control treatment simulates the 'state' *without* systemic discrimination whereas the treatment condition simulates the 'state' *with* discrimination. Then any difference in the experimental earnings and the earning distribution between the two states can be inferred as evidence of the impact of the *hukou* salience. Tables 5

[20] Restricting the data in column 9 of Table 4 to the tournament round (round 2) in PT, we find that H girls have a 17.26 percentage point higher probability of winning the tournament (p = 0.065), relative to L girls, in the salience treatment.

and 6 explore this outcome.

The dependent variable in Table 5 is subjects' total experimental earnings, excluding the participation fee. In the PP regime as shown in column 2, *hukou* salience leads to an increase in H's earnings by ¥1.712 (p = 0.065) and a decrease in L's earnings by ¥2.179 (p = 0.019, row (a) of bottom panel). As a result, the H type earn ¥1.752 more than the L type when *hukou* is made salient (p = 0.029, row (b) of the bottom panel), despite L's ¥2.139 lead over H (p =0.039) in the control treatment. In contrast, we see no systematic changes in earnings for H and L in the PT regime (column 3). Note that in regressions related to PT, coefficient estimates have large standard errors due to the high variance in earnings in this regime. When the sample is disaggregated by gender in columns 4-5, we find that identity salience does not significantly affect boys or girls' earnings regardless their *hukou* type. Although H boys' earnings are insignificantly higher than L boys' (¥1.513 in the control treatment, ¥2.421 in salience, column 4), H girls' earnings are marginally higher than L girls in both treatments (by ¥8.514, p = 0.058 in the control treatment; by ¥7.543 in salience p = 0.078, column 5).

Results are largely consistent when the dependent variable is individuals' earning percentile in Table 6. Priming *hukou* identity insignificantly increases H *hukou* group's ranking (8.474, p = 0.129) and significantly decreases a migrant student's ranking (-13.30, p = 0.018) in the distribution of earnings in the PP regime in column 2, which grants the H type a 10.099 percentile advantage over the L type (p = 0.037) in the earning distribution under *hukou* salience. Similar results hold for the pooled sample, albeit insignificantly. These findings lead us to result 2.[21]

[21] Our results are consistent when we split the sample by payment regime and gender. These results are not reported here due to space constraint but are available on request.

Result 2 (Earnings). Under the pure piece rate (PP) regime, priming *hukou* identity significantly decreases the L type subjects' earnings and their ranking in the earnings distribution. The earnings of the H subjects increase marginally significantly, leading to an insignificant increase in their ranking in the earnings distribution.

5.2 Discussion of Results

Our results indicate that individuals' behavior is distorted by the *hukou* identity in terms of their performance on incentivized tasks. This suggests that the practice of permanently assigning households to a rural status and discriminating against them for half a century has profoundly shaped citizens' social identities, especially for the socially 'excluded' *hukou* groups in China.

Our results may be explained by stereotype threat, a well-established finding in social psychology and recently formalized in an economic model by Dee (2014). The stereotype threat literature in psychology shows that making social identity salient in the laboratory often makes subjects behave consistently with the stereotypes associated with that social group, and hence may activate the *negative* stereotypes and hurt subjects' performance in relevant tasks. Most of these studies use tasks without economic incentives (Steele and Aronson, 1995; Aronson, Quinn and Spencer, 1998; Croizet and Claire, 1998). In China rural migrants are generally stereotyped to be "uneducated, ignorant, dirty and having higher propensities to be criminals" (Wang and Zuo, 1999). Migrant children are stereotyped to be less intelligent and have low academic achievement. These negative stereotypes, confirmed by subjects' response in the pre and post experiment surveys as discussed in Section 4, may be reinforced repeatedly and internalized by the migrant students. This self-image may be activated for migrant students following the priming of their 'inferior' *hukou* background in this study, and may prevent them from performing to their full potential in the assigned tasks even in the presence of economic

incentives.

There is another possible explanation for the identity impact we observe: the intimidation effect (Hoff and Pandey, 2006, 2012), i.e., knowing that they are evaluated along with their local urban counterparts may hurt migrant students' self confidence in the identity salience treatment. This is unlikely to be the driver of the results in this paper. Our subjects were recruited from schools where migrant students and their local urban counterparts studied and interacted on a daily basis. All the experimental sessions were conducted at subjects' regular schools during school days. Therefore, the intimidation factor, if any, is held constant across the control and the identity salience treatments because subjects were randomly assigned to the sessions. Thus, the findings based on the comparison across the two treatments should be net of the intimidation effect. We further investigate any potential intimidation effect by comparing L's performance in the presence of H (in sessions with H and L subjects) with that in the absence of H (in sessions with only L subjects). We conducted four, pure L *hukou* sessions with identity salience in a mixed tournament regime (3 all-male and 1 all-female sessions). If a public announcement of *hukou* type in the presence of H type truly intimidated the L type, then the performance of the L subjects in the mixed-*hukou* sessions would have been worse relative to their performance in the pure-*hukou* sessions. However, we do not see any significant difference in the performance of the L subjects (girls or boys) under either piece rate payment (round 1) or 'winner-take-all' rule (round 2) between the mixed and pure-*hukou* sessions in salience as shown in Table A3 of Appendix E. We, therefore, conclude that our results cannot be explained by an intimidation effect.[22]

[22]Another possible explanation of our results is experimenter discretion, i.e., in our case, L subjects may expect to be discriminated against by the experimenters, all of who spoke Chinese Mandarin with an urban accent and hence were perceived as Beijing locals. We discount this possibility. As pointed out in the discussion of experiment design, only the experimenters in a session knew the *hukou* type of each assigned ID. The maze puzzle booklets, after each

Finally, our results indicate that inducing competition may reduce the adverse effects of negative stereotyping of migrants. This could be particularly relevant for migrant girls. Our results (columns 8-9 in Table 3), on closer scrutiny (Table A2, Appendix E) suggest that revelation of *hukou* makes L girls perform significantly better in tournament than in piece rate. This finding, ascribed to an interaction effect of inferior social status and competitive environment on females' performance potentially extends the gender gap literature that shows competition enhances performance relative to a noncompetitive environment for males but not for females (Gneezy, Niederle, and Rustichini, 2003; Gneezy and Rustichini, 2004). We offer one possible explanation of this result - the twin identity of being female and having low *hukou* status.

It is well accepted that in traditional Chinese society boys are preferred to girls and parents are likely to invest more in boys' education than girls'. This gender bias is more apparent in the rural areas than in the urban areas (Park and Rukumnuaykit, 2004) and in rural migrant families than in local urban families. In addition, rural families are more likely to have an additional child if the first child is a girl. [23] Therefore, compared to other students, migrant girls are more likely to have siblings (and these siblings are more likely to be girls - Yamaguchi, 1989; Jensen, 2002)

round, were graded by graders outside the 'laboratory' who did not know the *hukou* type of any ID number. The experimenters did not leave the 'laboratory' throughout the session, so the subjects should be aware, particularly in round 2, that the experimenters were unlikely to influence the grading process. An alternative design would have been to announce to the subjects in advance that the maze booklets would be graded by helpers who would not have any knowledge of their individual (or group) characteristics. We did not choose this design in order to avoid distracting subjects from their assigned task, and to minimize potential, invalid concerns with the grading process. To illustrate, in the PP regime if our results were driven by experimenter discretion we would observe a *lower* degree of performance reduction (with identity salience) in round 2 than in round 1, since in round 2 subjects knew for certain that the experimenters were unlikely to influence the grading process. Nevertheless, we observe the opposite, i.e., the reduction in performance is *greater* in round 2 (1.044; $p = 0.070$) compared to round 1 (0.839; $p = 0.079$) due to salience. This suggests it is unlikely that subject's perception of experimenter discretion drives our results.

[23] China's One Child Policy currently allows rural families to have an additional child if the first child is a girl, subject to government approvals and income or health constraints. Rural migrant households are also more likely to 'illegally' have additional children since it is difficult for the government to monitor the number of child births among unregistered families.

and thereby more likely to face competition in intra-household resource allocation. Hence, rural families are more likely to be larger and rural girls, in particular, are likely to have more siblings than urban girls. However, even in the absence of gender discrimination, because L girls are likely to have more siblings than either H girls or boys due to son targeting fertility behavior (Yamaguchi, 1989; Jensen, 2002; which is more likely among rural households in China), L girls would have to compete for resources within the household more than other types/boys.

It is possible that the combination of a competitive environment with a reminder of low status increased migrant girls' effort, lowering the adverse impact of stereotype threat.[24] However, the results in column 9 of Table 4 suggest that the increase in L girls' performance in competition is not sufficient for significantly increasing their probability of solving the most mazes in PT. Further research on gender and competitive behavior is required to convincingly explain this result.

6. Conclusion

We conduct an experimental study to investigate the causal impact of social identity on individuals' performance on economically incentivized tasks. We answer this question in the context of the role of China's household registration or *hukou* system in generating migrant identity. Our results indicate that making *hukou* identity salient adversely affects the performance of rural migrants who are lower ranked *hukou* holders in urban Beijing. This adverse impact is significant and substantial for rural migrants. Making individuals' *hukou* identity salient reduces the performance of rural migrant children, holders of the inferior *hukou,* on incentivized tasks by

[24] The economic model by Dee (2010) suggests that individual performance may increase in response to stereotype threat if an increase in effort *substitutes* for a negative ability shock. Increase in performance by women exposed to gender stereotype priming is also observed in Oswald and Harvey (2000), Jamieson and Harkins (2007), Fryer, Levitt, and List (2008). Recent work by Booth and Nolen (2012) also suggests that the performance of women under competition depends on the social context and cannot be generalized.

almost 10 percent. The performance of the (superior) Beijing *hukou* holders improves, but insignificantly, when *hukou* identity is made salient. When the results are disaggregated by the payment method, we find that the effects of migrant identity salience are very strong when piece rate is used but insignificant in tournament. This leads us to conclude that introducing competition may mitigate the negative effects on performance of stereotyped 'low-status' migrants. We find evidence that supports this claim for migrant girls.

Our results are consistent with Hoff and Pandey (2012) who find that publicly revealing young *male* students' caste significantly decreases the responsiveness of low castes to incentives in rural India. While they focus on male students this study shows that similar results also hold for low status female students, with a caveat on the effects of competition.

Our study broadens perspectives on the impact of the *hukou* system on the rural-urban divide to its impact on inequality in urban areas of China through a hitherto unexplored channel. The evidence in this paper underlines the causal effect of administratively created social identity in distorting individuals' performance on incentivized tasks and potentially exacerbating existing inequities in the distribution of gains from economic growth. It shows that even in an ethnically homogeneous society like China, several-decades-long systemic policy of social exclusion can play a powerful role in creating identities and in turn influence individual behavior.

As suggested by Akerlof and Kranton's (2000) identity model of social exclusion, the negative impact of social exclusion is unlikely to disappear unless citizens are fully integrated into a community. Future research should, thus, study the long term impact of identity on educational attainment and labor market outcomes of low status individuals. This strand of research will provide critical insights for designing redistributive and inclusive policies that aim to achieve more cohesive communities.

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Table 1: Experimental Design

Treatments	Primed *hukou*?	Reward per maze		Number of sessions	
		Round 1	Round 2	Male	Female
1. Pure Piece Rate (PP) control treatment	No	¥1	¥1	9	6
2. Mixed Tournament (PT) control treatment	No	¥1	¥6; winner takes all	9	5
3. Pure Piece Rate (PP) identity salience treatment	Yes	¥1	¥1	15	7
4. Mixed Tournament (PT) identity salience treatment	Yes	¥1	¥6; winner takes all	15	6

Note: The experiment consisted of 418 subjects in 72 sessions. 11 sessions had fewer than 6 subjects - 3 male PP sessions, 5 male PT sessions, 2 female PP sessions, and 1 female PT session.

Table 2: Summary Statistics

Variables	H			L		
	Control N=84	Salience Treatment N=125	Difference (P value)	Control N=84	Salience Treatment N=125	Difference (P value)
	(1)	(2)	(1) vs. (2)	(3)	(4)	(3) vs. (4)
Grade	4.381	4.528	0.329	4.178	4.208	0.846
	(1.074)	(1.059)		(1.008)	(1.109)	
Age (years)	9.762	9.912	0.374	9.917	9.688	0.242
	(1.248)	(1.157)		(1.407)	(1.364)	
Proportion born in Beijing	0.667	0.752	0.181	0.190	0.192	0.978
	(0.474)	(0.434)		(0.395)	(0.395)	
Years of local residence [a]	8.063	6.600	0.273	5.574	5.623	0.920
	(4.328)	(3.958)		(2.975)	(2.580)	
Father has college/graduate degree	0.421	0.355	0.352	0.088	0.146	0.215
	(0.497)	(0.480)		(0.284)	(0.359)	
Mother has college/graduate degree	0.392	0.371	0.770	0.074	0.115	0.343
	(0.492)	(0.485)		(0.264)	(0.320)	
Proportion of subjects who played similar/same games before	0.667	0.728	0.344	0.738	0.624	0.086
	(0.474)	(0.447)		(0.442)	(0.486)	
Number of others known	1.253	1.480	0.215	1.537	1.240	0.142
	(1.404)	(1.209)		(1.525)	(1.340)	

Notes: P-values of two-sided t tests of differences in mean values reported. Standard deviations reported in parentheses.

[a] Years of local residence are for those who were not born in Beijing.

Table 3: Impact of *Hukou* Salience on Performance (OLS)

Sample	**Pooled**	**One-way split**				**Two-way split**			
Payment Regime	**All (PP & PT)**	**Pure Piece Rate (PP)**	**Mixed Tourna-ment (PT)**	**All (PP & PT)**		**Pure Piece Rate (PP)**		**Mixed Tournament (PT)**	
Gender group	**All**	**All**	**All**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
L (β_1)	0.323	1.069**	-0.438	0.078	0.712	0.915	1.267*	-0.881	0.198
	(0.364)	(0.518)	(0.505)	(0.506)	(0.493)	(0.704)	(0.734)	(0.711)	(0.675)
salience (β_2)	0.167	0.856*	-0.527	-0.142	0.642	0.712	1.055	-0.960	0.136
	(0.359)	(0.488)	(0.513)	(0.477)	(0.538)	(0.644)	(0.762)	(0.661)	(0.817)
L*salience (β_3)	-0.880*	-1.945***	0.167	-0.615	-1.208*	-1.709**	-2.258**	0.483	-0.106
	(0.466)	(0.644)	(0.672)	(0.622)	(0.696)	(0.851)	(0.993)	(0.895)	(1.029)
piece rate round 2	2.285***	2.214***		2.447***	1.980***	2.381***	1.894***		
	(0.167)	(0.150)		(0.213)	(0.267)	(0.187)	(0.251)		
tournament round 2	2.508***		2.586***	2.594***	2.339***			2.667***	2.433***
	(0.173)		(0.153)	(0.208)	(0.308)			(0.176)	(0.303)
male	1.186***	1.346***	1.023***						
	(0.250)	(0.361)	(0.338)						
grade	0.853***	0.759***	0.945***	0.970***	0.612***	0.849***	0.569**	1.081***	0.669***
	(0.101)	(0.143)	(0.141)	(0.128)	(0.160)	(0.176)	(0.241)	(0.180)	(0.223)
played before	-0.304	0.142	-0.718*	-0.172	-0.548	0.392	-0.339	-0.756	-0.709
	(0.245)	(0.332)	(0.364)	(0.313)	(0.376)	(0.426)	(0.528)	(0.470)	(0.552)
Constant	2.279***	2.267**	2.215**	2.787***	3.599***	2.899***	3.952***	2.559**	3.214***
	(0.632)	(0.931)	(0.877)	(0.729)	(0.904)	(1.063)	(1.342)	(1.049)	(1.195)
Observations	732	384	348	480	252	252	132	228	120
R-squared	0.335	0.313	0.398	0.329	0.273	0.302	0.249	0.413	0.330
Overall significance:									
(a) Salience on L	-0.714**	-1.090**	-0.360	-0.757*	-0.566	-0.997*	-1.203*	-0.477	0.030
($\beta_2 + \beta_3$)	(0.301)	(0.430)	(0.419)	(0.404)	(0.429)	(0.574)	(0.634)	(0.579)	(0.545)

(b) H-L difference in salience $[-(\beta_1 + \beta_3)]$	0.557** (0.281)	0.876** (0.382)	0.271 (0.413)	0.537 (0.347)	0.496 (0.483)	0.794* (0.475)	0.991 (0.666)	0.398 (0.499)	-0.092 (0.725)
Test of equality of coefficients (P values):		(2) vs. (3)		(4) vs. (5)		(6) vs. (7)	(6) vs. (8)	(8) vs. (9)	(7) vs. (9)
(c) Salience on H		0.007		0.140		0.647	0.433	0.144	0.128
(d) Salience on L		0.151		0.720		0.784	0.483	0.505	0.167
(e) H-L difference in salience		0.184		0.934		0.771	0.019	0.496	0.059
(f) β_3		0.003		0.431		0.604	0.012	0.581	0.581

Notes: School fixed effects included throughout. Standard errors, clustered at the individual level, in parentheses. * significant at 10%, ** 5% and, ***1%

Table 4: Impact of *Hukou* Salience on Likelihood of Solving the Most Mazes (Logit)

Sample	**Pooled**	**One-way split**				**Two-way split**			
Payment Regime	**All (PP & PT)**	**Pure Piece Rate (PP)**	**Mixed Tourna-ment (PT)**	**All (PP & PT)**		**Pure Piece Rate (PP)**		**Mixed Tournament (PT)**	
Gender group	**All**	**All**	**All**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
L (β_1)	0.003	0.036	-0.030	0.069	-0.081	0.079	-0.028	0.040	-0.149
	(0.059)	(0.083)	(0.083)	(0.077)	(0.089)	(0.108)	(0.115)	(0.101)	(0.135)
salience (β_2)	0.045	0.057	0.041	0.057	0.043	0.067	0.069	0.073	0.002
	(0.055)	(0.076)	(0.080)	(0.065)	(0.096)	(0.091)	(0.132)	(0.095)	(0.139)
L*salience (β_3)	-0.111	-0.165	-0.062	-0.140	-0.102	-0.202	-0.118	-0.073	-0.063
	(0.077)	(0.108)	(0.115)	(0.099)	(0.121)	(0.136)	(0.165)	(0.143)	(0.174)
piece rate round 2	0.020	0.016		0.029	0.002	0.024	0.000		
	(0.029)	(0.031)		(0.036)	(0.045)	(0.041)	(0.043)		
tournament round 2	-0.041		-0.034	-0.044	-0.035			-0.035	-0.033
	(0.029)		(0.026)	(0.035)	(0.050)			(0.027)	(0.054)
male	0.030	0.041	0.025						
	(0.040)	(0.056)	(0.058)						
grade	0.079***	0.069***	0.095***	0.086***	0.072***	0.078***	0.061	0.104***	0.086***
	(0.015)	(0.021)	(0.023)	(0.020)	(0.025)	(0.026)	(0.039)	(0.031)	(0.030)
played before	-0.045	-0.023	-0.069	-0.012	-0.090	0.052	-0.137	-0.079	-0.048
	(0.040)	(0.058)	(0.060)	(0.051)	(0.066)	(0.072)	(0.094)	(0.078)	(0.088)
Observations	732	384	348	480	252	252	132	228	120
R-squared	0.07	0.061	0.094	0.069	0.102	0.071	0.083	0.095	0.151
Overall significance:									
(a) Salience on L	-0.066	-0.108	-0.020	-0.083	-0.059	-0.135	-0.049	-0.0003	-0.061
($\beta_2 + \beta_3$)	(0.049)	(0.067)	(0.072)	(0.069)	(0.063)	(0.091)	(0.096)	(0.100)	(0.079)
(b) H-L difference in	0.108**	0.129**	0.092	0.071	0.184**	0.124*	0.146	0.033	0.212**
salience $[-(\beta_1 + \beta_3)]$	(0.044)	(0.059)	(0.068)	(0.054)	(0.074)	(0.068)	(0.114)	(0.090)	(0.091)

Notes: Dependent variable is the likelihood of the individual solving the most mazes in the session.
Marginal effects reported. School fixed effects included throughout. Standard errors, clustered at the individual level, in parentheses. * significant at 10%, ** 5% and, ***1%.

Table 5: Impact of *Hukou* Salience on Experimental Earnings (OLS)

Sample	**Pooled**	**One-way split**			
Payment Regime	**All (PP & PT)**	**Pure Piece Rate (PP)**	**Mixed Tourna-ment (PT)**	**All (PP & PT)**	
Gender group	**All**	**All**	**All**	**Boys**	**Girls**
	(1)	(2)	(3)	(4)	(5)
L (β_1)	-4.427	2.139**	-10.99	-1.513	-8.514*
	(3.337)	(1.029)	(6.671)	(4.710)	(4.445)
salience (β_2)	-0.997	1.712*	-2.857	-0.632	-0.687
	(3.047)	(0.921)	(6.242)	(4.141)	(4.341)
L*salience (β_3)	0.482	-3.891***	3.629	-0.908	0.971
	(4.300)	(1.298)	(8.825)	(5.849)	(6.169)
mixed tournament	3.128			3.338	2.696
	(2.106)			(2.795)	(3.098)
male	2.711	2.693***	3.078		
	(2.411)	(0.722)	(4.973)		
grade	4.426***	1.517***	7.536***	4.316***	4.913***
	(1.006)	(0.303)	(2.063)	(1.343)	(1.478)
played before	-3.209	0.284	-7.325	-2.752	-3.915
	(2.309)	(0.716)	(4.683)	(3.072)	(3.394)
Constant	-5.928	6.747***	-17.59	-1.425	-9.599
	(6.183)	(1.822)	(12.65)	(7.436)	(8.068)
Observations	366	192	174	240	126
R-squared	0.085	0.223	0.121	0.062	0.155
Overall significance:					
(a) Salience on L	-0.514	-2.179**	0.772	-1.540	0.285
($\beta_2 + \beta_3$)	(3.051)	(0.924)	(6.240)	(4.136)	(4.369)
(b) H-L difference in	3.944	1.752**	7.364	2.421	7.543*
salience [$-(\beta_1 + \beta_3]$)	(2.713)	(0.798)	(5.754)	(3.504)	(4.247)

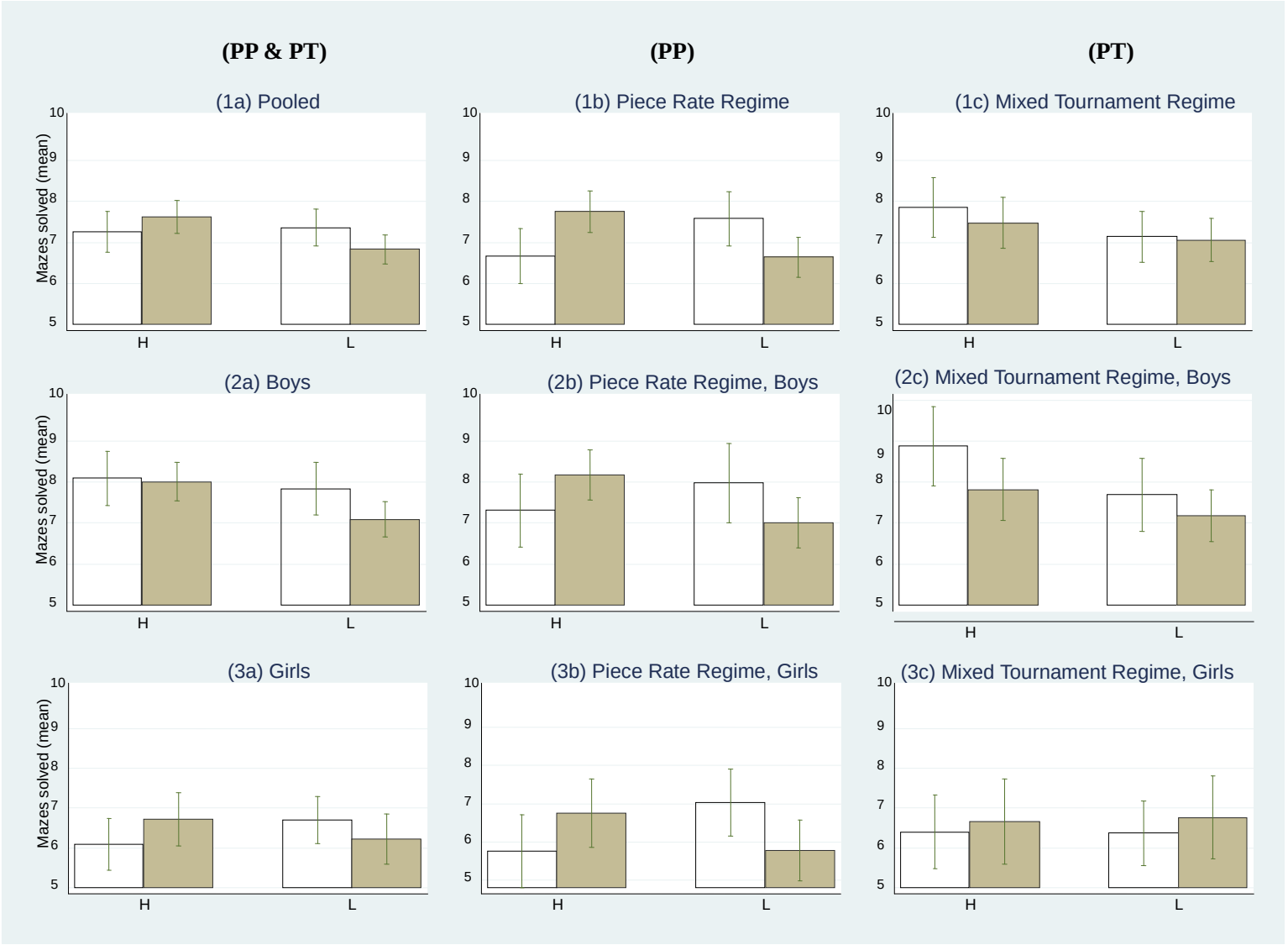
Notes: The dependent variable is individual experimental earnings excluding the 3 yuan participation fee. Standard errors in parentheses. School fixed effects included throughout.* significant at 10%, ** 5% and, ***1%.

Table 6: Impact of *Hukou* Salience on Experimental Earnings Distribution (OLS)

Sample	**Pooled**	**One-way split**			
Payment Regime	**All (PP & PT)**	**Pure Piece Rate (PP)**	**Mixed Tourna-ment (PT)**	**All (PP & PT)**	
Gender group	**All**	**All**	**All**	**Boys**	**Girls**
	(1)	(2)	(3)	(4)	(5)
L (β_1)	3.310	11.67*	-5.227	2.536	4.772
	(4.365)	(6.208)	(6.113)	(5.855)	(6.565)
salience (β_2)	2.150	8.474	-4.364	0.624	5.093
	(3.986)	(5.562)	(5.719)	(5.148)	(6.411)
L*salience (β_3)	-8.472	-21.77***	5.295	-5.460	-14.33
	(5.625)	(7.837)	(8.087)	(7.271)	(9.110)
mixed tournament	-1.542			-3.177	1.361
	(2.755)			(3.475)	(4.575)
male	12.24***	15.79***	8.465*		
	(3.153)	(4.356)	(4.557)		
grade	10.46***	9.200***	11.74***	11.11***	9.381***
	(1.315)	(1.831)	(1.890)	(1.670)	(2.183)
played before	-2.273	1.485	-5.142	0.757	-7.798
	(3.020)	(4.320)	(4.292)	(3.819)	(5.011)
Constant	1.681	4.631	-3.981	9.467	10.35
	(8.087)	(11.00)	(11.59)	(9.244)	(11.95)
Observations	366	192	174	240	126
R-squared	0.202	0.217	0.234	0.176	0.176
Overall significance:					
(a) Salience on L	-6.322	-13.30**	0.931	-4.836	-9.241
$(\beta_2 + \beta_3)$	(3.991)	(5.574)	(5.718)	(5.142)	(6.452)
(b) H-L difference in	5.162	10.099**	-0.068	2.924	9.562
salience $[-(\beta_1 + \beta_3)]$	(3.548)	(4.817)	(5.273)	(4.357)	(6.272)

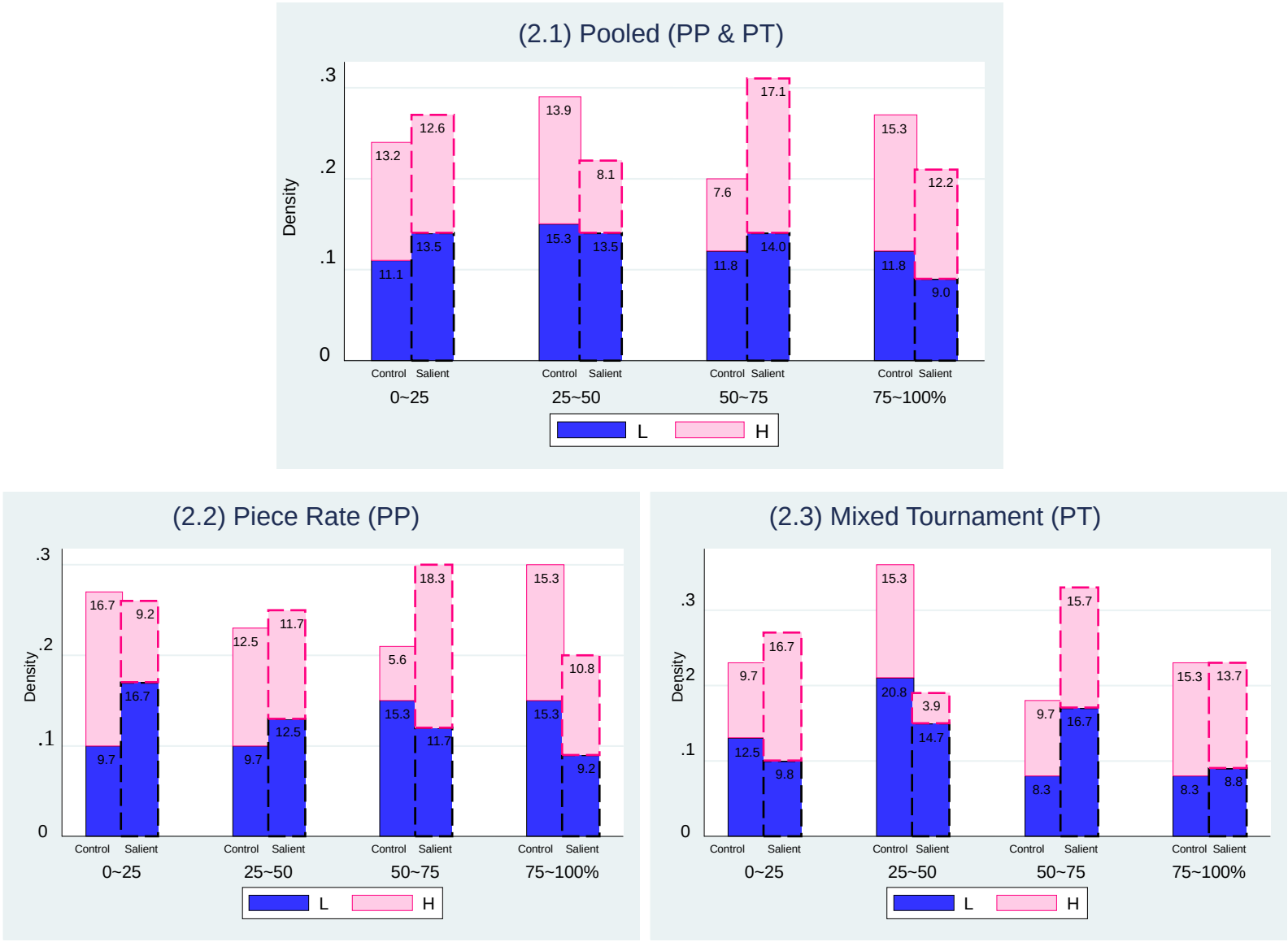
Notes: The dependent variable is individual's earning percentile in the corresponding experimental treatment which falls into one of the four cases including the PP control treatment, the PT control treatment, the PP salience treatment, and the PT salience treatment. Standard errors in parentheses. School fixed effects included throughout. ** significant at 10%, ** 5% and, ***1%.

Figure 1: Performance by Treatment and *Hukou* Type



Note: Bars represent 95% confidence intervals.

Figure 2: Earnings Distribution by Treatment and *Hukou* Type



Note: Bars with solid (dashed) border show the distribution in the control (salience) treatment. (+/-) 0.1 error due to rounding off in some instances.

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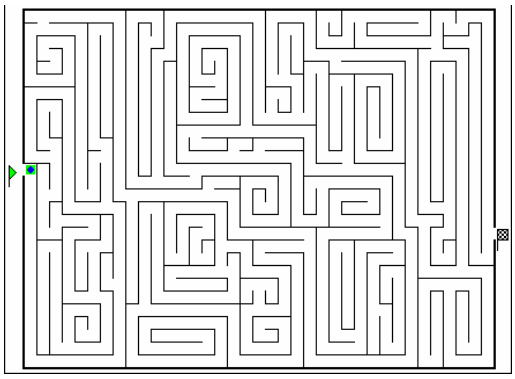
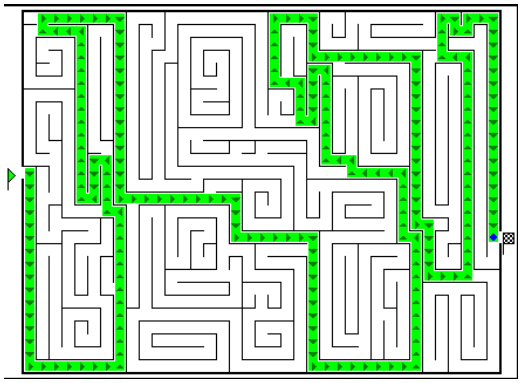
Appendix A. A Sample Maze Game

Maze



Solution



Appendix B. Experimental Instruction

The instruction was given in Chinese. The English translation is presented below with the instructions for experimenters included in the parentheses in italics.

I. Piece rate without *hukou* primed

1. Welcome! Each of you will be compensated with 3 yuan for your participation. Please find 3 yuan in the envelope on your desk. It is yours to keep.

2. In addition, you may earn more money in the games. The average earnings will be about 12 to 18 yuan. You will be paid in cash in private at the end of the games. You are under no obligation to let others know how much you earn. You will participate in two rounds of maze solving games. The entire games will last about half an hour. Please do not talk to each other during the experiment. Please raise your hand if you had any questions.

3. First, we will show you what the game looks like and how to solve it. (*Experimenter reveals the first sample maze and explains while drawing on the poster.)* On the left hand side of the maze, it is the entrance indicated by a triangle flag. On the right hand side, it is the exit indicated by a square flag. The black lines are walls. Your task is to find a path from the entrance to the exit without crossing the walls. You may erase or cross out if you make any mistakes.

4. Let's look at the second example. It is similar to what you will need to solve in the games. *(Experimenter reveals the second example and illustrates how to solve it).*

5. Now you will be given another maze for practice. Everyone will have 5 minutes to do so. If you have any questions, please raise your hand and we will come to you.

6. Next, we will start the first round of the games. Please find the booklet that says 'Round 1' on the cover. Please don't open the booklet until you are told to do so. There is one maze on each page, and in total 15 games. Everyone will be given 15 minutes to solve as many games as you can. You don't need to solve those games in order. You may skip any game as you like.

7. Now we will explain the rewards. For this round, you will get 1 yuan for each maze you solve correctly. So if you solve one, you will get one yuan. If you solve two, you will get two yuan …

(Experimenter reveals the following table on the blackboard and goes through this hypothetical example to make sure every subject follows the calculation of rewards. Experimenter asks subject no. 1, 'suppose Qiang solve 4 mazes, how much he will earn?' Then experimenter asks subject no. 2 how much Gang will earn… Hypothetical female names are used in the table if it is female session.)

Name	Number of mazes solved	Rewards
Qiang	4	
Gang	7	
Peng	9	
Wei	12	
Hao	14	
Dong	5	

8. Recall you will have 15 minutes to solve as many mazes as you can. When 5 minutes remain we will let you know. When time is up, please put down the pencil immediately and close the booklet. Please open the booklet now. You may start. *(Experimenter collects the booklet when round 1 is over.)*

9. Next we will explain the games in round 2. Please find the booklet that says 'Round 2' on the cover. Please don't open it until you are told to do so. The booklet contains another 15 games with the same difficulty level.

10-PieceRate. The rules and rewards in round 2 are exactly the same as that in round 1. Let's review the reward calculation again. (*Experimenter reviews the reward table above without checking with individual subjects.)*

11. Again you will have 15 minutes to solve as many mazes as you can. We will let you know when 5 minutes are left. Please open the booklet now. You may start. *(Experimenter collects the booklet when round 2 is over.)*

12. Please find the booklet that says 'Survey' on the cover. While we are grading your games and computing your payoffs please complete the survey. Please try to answer as many questions as you can. We are not going to share individual answers with anyone else including your teachers.

13. You will now be paid in private. Remember you don't have to tell others how much you earned. Thank you for your participation in our study!

II. Tournament without *hukou* primed

*(Replace step **10-PieceRate** above with step **10-Tournament** below. Keep other steps the same as in Piece Rate.)*
10-Tournament. Please note that the rules now are different from round 1. In this round, you will compete with each other. Only the winner(s) will get rewards. The winner(s) is/are the person(s) who solve(s) the greatest number of mazes. The reward for the winner(s) is 6 yuan each game. So if he solves one maze, he will get 6 yuan. If he solves two mazes, he will get 12 yuan. If he solves three mazes, he will get 18 yuan… If it's a tie, all the winners will be compensated. Each of them will get 6 yuan per game. Let's go over one example.

Name	Number of mazes solved	Winner	Rewards
Qiang	4		
Gang	7		
Peng	9		
Wei	12		
Hao	14		
Dong	5		

(Experimenter adds one more column 'winner' in the reward calculation table. Experimenter checks with each subject, e.g., 'Is Qiang the winner? How much does he earn in this case?')

III. Piece rate with *hukou* primed

(Same as I. except that Step 0 is added.)

0. Welcome! Each of you will be compensated with 3 yuan for your participation. Please find 3 yuan in the envelope on your desk. It is yours to keep. Now please find the booklet that says 'Survey 1' on the cover. Please try to answer as many questions as you can. We will keep your answers confidential and will not share them with anyone else including your teachers. *(After everyone completes the survey, experimenter goes to each student, and verifies in public their names, month and date of birth, and hukou information. Students nod and say yes if information is correct.)*

IV. Mixed Tournament with Hukou Announced
The same as Mixed Tournament except that Step 0 is added.

V.A. Mixed Tournament with Hukou Announced, and H Only
The same as Mixed Tournament except that Step 0 is added. Note there are 6 Beijing urban students (H) in this session.

V.B. Mixed Tournament with Hukou Announced, and M Only
The same as Mixed Tournament except that Step 0 is added. Note there are 6 Non-Beijing urban students (M) in this session.

V.C. Mixed Tournament with Hukou Announced, and L Only
The same as Mixed Tournament except that Step 0 is added. Note there are 6 Non-Beijing rural students (L) in this session.

Appendix C. Pre-experiment Survey (for H-L salience treatment)

S.No.	Survey question	L	H	Difference (P-value)
1	Born in Beijing	0.19	0.72	0.000
2	Years lived in Beijing	5.60	7.17	0.006
3	Speak Beijing dialect at home	0.70	0.95	0.000
4	Consider yourself as Beijing local	0.09	0.85	0.000
5	Classmates consider you as Beijing local	0.21	0.80	0.000
6	Teachers consider you as Beijing local	0.22	0.89	0.000
7	Charged rural guest student fee	0.60	0.03	0.000
8	Local Beijing students study harder	0.16	0.14	0.706
9	Non-local, rural Beijing students study harder	0.33	0.35	0.724
10	Local Beijing students are more active participants in class	0.25	0.40	0.011
11	Non-local, rural Beijing students are more active participants in class	0.15	0.18	0.510
12	Local Beijing students participate more in extra-curricular activities	0.40	0.46	0.274
13	Non-local, rural Beijing students participate more in extra-curricular activities	0.15	0.15	0.979
14	Local Beijing students are more thrifty	0.10	0.11	0.712
15	Non-local, rural Beijing students are more thrifty	0.63	0.60	0.582

Note: P-values of two-sided t tests of differences in mean values reported. (1) and (2) were also asked in the post-experiment survey in all sessions. An additional question: The location of your *hukou*: _____province _____city _____street/village, was also asked in the pre-experiment survey in the salience treatment and in the post-experiment survey in the control treatment. Some variables are slight modifications of survey responses for ease of interpretation.

Results are based on the entire sample. Results are consistent if the sample is restricted to full sessions.

Appendix D. Post-experiment Survey

S. No.	Survey question	L	H	Difference (P-value)
1	Father employed in government or public sector	0.21	0.50	0.000
2	Father has completed high school	0.36	0.43	0.149
3	Father has college/graduate degree	0.12	0.38	0.000
4	Mother employed in government or public sector	0.18	0.40	0.000
5	Mother has completed high school	0.33	0.40	0.184
6	Mother has college/graduate degree	0.10	0.38	0.000
7	Average ranking in class	1.62	1.45	0.045
8	Do you like living in the current residential area?	2.16	1.89	0.004
9	Would like to live in Beijing when growing up?	0.67	0.65	0.732
10	How much pocket money do your parents give to you per week?	2.33	2.56	0.136
11	Ever played this kind of maze game before	0.68	0.71	0.551
12	Level of difficulty of mazes	3.20	3.33	0.194
13	Number of other subjects known	1.36	1.39	0.811

Notes: P-values of two-sided t tests of differences in mean values reported.

7. Your average ranking in your class is: (1) Top 25%, (2) 25%-50%, (3) 50%-75%, (4) 75%-100 %
8. Do you like living in the current residential area? (1) Like it very much, (2) Like, (3) neutral, (4) Dislike, (5) Dislike it very much
10. How much pocket money do your parents give to you per week? (Please exclude the expense on meals and transportation) (1) Less than 3.5 *yuan*, (2) 3.5-7 *yuan*, (3) 7-10.5 *yuan*, (4) 10.5-14 *yuan*, (5) more than 14 *yuan*
11. Have you ever played this kind of maze game before? (1) No, (2) Played similar games before, (3) Played exactly the same game before
12. How hard did you think these maze games were? (1) Very hard, (2) Hard, (3) Neutral, (4) Easy, (5) Very easy

Results are based on the entire sample. Results are consistent if the sample is restricted to full sessions.

Appendix E

Table A1: Summary Statistics on Performance and t tests

	Pooled	One-way split				Two-way split			
Payment Regime	**All (PP & PT)**	**Pure Piece Rate (PP)**	**Mixed Tourna-ment (PT)**	**All (PP & PT)**		**Pure Piece Rate (PP)**		**Mixed Tournament (PT)**	
Gender group	**All**	**All**	**All**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Average number of mazes									
H in control	7.257	6.667	7.847	8.095	6.083	7.31	5.767	8.881	6.400
	(3.008)	(2.818)	(3.093)	(3.06)	(2.52)	(2.85)	(2.555)	(3.094)	(2.486)
H in salience	7.626	7.750	7.480	8.013	6.712	8.179	6.750	7.819	6.667
	(2.981)	(2.847)	(3.139)	(3.007)	(2.727)	(2.838)	(2.644)	(3.204)	(2.869)
L in control	7.361	7.583	7.139	7.833	6.700	7.976	7.033	7.690	6.367
	(2.742)	(2.812)	(2.671)	(2.957)	(2.272)	(3.072)	(2.341)	(2.867)	(2.189)
L in salience	6.833	6.642	7.059	7.090	6.227	7.012	5.778	7.181	6.767
	(2.713)	(2.722)	(2.699)	(2.734)	(2.583)	(2.796)	(2.356)	(2.677)	(2.775)
t tests (P values):									
H v. L in control	0.759	0.053	0.144	0.573	0.162	0.306	0.050	0.071	0.956
salience effect on L	0.071	0.023	0.847	0.052	0.280	0.080	0.034	0.341	0.538
salience effect on H	0.250	0.011	0.446	0.841	0.183	0.108	0.132	0.087	0.702
H v. L in salience	0.004	0.002	0.305	0.005	0.296	0.008	0.104	0.196	0.891

Note: Standard deviations in parentheses. This table corresponds to Figure 1 in the main text.

Table A2: Impact of *Hukou* Salience on Performance by Payment Methods (OLS)

	Round 1, PP&PT Pooled				Round 2, PP&PT Pooled			
	H boys	**H girls**	**L boys**	**L girls**	**H boys**	**H girls**	**L boys**	**L girls**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
salience (γ_1)	-0.282	0.319	-0.668*	-0.713	0.762	1.407	-1.107*	-1.582**
	(0.490)	(0.498)	(0.372)	(0.507)	(0.709)	(1.006)	(0.666)	(0.676)
tournament (γ_2)					1.919**	0.661	-1.007	-0.927
					(0.822)	(1.052)	(0.777)	(0.705)
tournament × *salience* (γ_3)					-2.031**	-0.895	0.996	2.643**
					(1.022)	(1.455)	(0.951)	(0.996)
grade	0.668***	0.364	0.945***	0.310	0.802***	0.840**	1.351***	0.913***
	(0.228)	(0.245)	(0.168)	(0.240)	(0.239)	(0.360)	(0.216)	(0.235)
played before	-0.0182	-0.434	-0.0598	-0.231	-0.0778	-1.040	-0.229	-0.268
	(0.533)	(0.551)	(0.375)	(0.547)	(0.562)	(0.812)	(0.492)	(0.546)
Constant	4.558***	4.248***	2.487***	4.207***	5.645***	4.030**	3.387***	4.811***
	(1.200)	(1.271)	(0.884)	(1.206)	(1.304)	(1.953)	(1.195)	(1.234)
Observations	120	63	120	63	120	63	120	63
Adjusted R^2	0.138	0.067	0.277	0.064	0.132	0.049	0.267	0.250
Overall significance:								
Salience effect in					-1.269*	0.512	-0.111	1.061
tournament ($\gamma_1 + \gamma_3$)					(0.741)	(1.052)	(0.683)	(0.729)
Effect of tournament in					-0.113	-0.234	-0.011	1.716**
salience treatment ($\gamma_2 + \gamma_3$)					(0.602)	(1.015)	(0.565)	(0.693)

Notes: The dependent variable is the number of mazes solved by an individual subject. Columns 1-4 are based on data in round 1 of the PP and PT regimes using the piece rate payment method. The control treatment is the omitted category. Columns 5-8 are based on data in round 2 of PP (piece rate) and round 2 of PT (tournament). The control treatment and the piece rate method are the omitted categories. Results in columns 5-8 provide direct comparison of the impact of salience on performance in piece rate and tournament. School fixed effects included throughout. Standard errors are in parentheses.* significant at 10%, ** 5% and, ***1%.

Table A3: Number of Mazes Solved by L Type in PT Salience Treatment in Mixed-*Hukou* vs. Pure-*Hukou* Sessions

Round 1						Round 2					
L Boys			L Girls			L Boys			L Girls		
Mixed *hukou*	Pure *hukou*	Difference (*p* value)	Mixed *hukou*	Pure *hukou*	Difference (*p* value)	Mixed *hukou*	Pure *hukou*	Difference (*p* value)	Mixed *hukou*	Pure *hukou*	Difference (*p* value)
(N=42)	(N=18)		(N=17)	(N=6)		(N=42)	(N=18)		(N=17)	(N=6)	
6.12	6.83	0.219	4.88	5.50	0.475	8.43	9.22	0.325	8.53	7.67	0.389
(1.93)	(2.28)	[0.258]	(1.87)	(1.52)	[0.369]	(2.83)	(2.86)	[0.390]	(2.07)	(2.07)	[0.499]

Note: This table shows that L subjects' performance is comparable in the presence of H subjects (in the mixed-*hukou* sessions with 3 H and 3 L subjects) and in the absence of them (in the pure-*hukou* sessions with 6 L subjects). N is the number of observations. P values are reported for t tests of means and Wilcoxon rank-sum tests in square brackets. Standard deviations are in parentheses. Results reported here are based on the entire sample. Results are consistent if the sample is restricted to full sessions.