Self-Selection into Civil Service in China: Individual Traits and (Mis)Beliefs

A Pre-Analysis Plan*

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Abstract

The recruitment and selection of bureaucrats into government is important for governance quality. However, the lack of information on the government structure might confound the expectations and beliefs that candidates hold on the government structure, and the resultant misbelief at the individual level might generate distinctive self-selection effects on bureaucrat candidates than in a setting with perfect information. By focusing on China's civil-service system, we plan to conduct a survey experiment to examine how individual citizens' beliefs pertaining to the structure of the government and its recruitment affect their choices to enter. Furthermore, we plan to assess how these beliefs affect individuals heterogeneously across different traits, such as ability/competence, political attitude, pro-social attitude (altruism), and risk preferences. This document is a pre-analysis plan for the survey experiment.

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1 Introduction

The question of who seeks government employment has profound implications for the quality of governance. At the individual level, person traits – such as ability, risk attitude, political loyalty, and public-serving motivation – interact with larger institutional context to determine one's desire to work for the government.

Existent studies are inconclusive about how institutional characteristics of a government may affect individual choice to seek government employment. For instance, while some find that high-corruption governments draw more dishonest aspirants and vice versa (e.g., Banerjee, Baul and Rosenblat (2015), Hanna and Wang (2017), and Barfort et al. (2019)), Gans-Morse et al. (2021) show that students who prefer to work for government in Russia, a high-corruption context, are actually more honest and altruistic.

What can resolve this seeming contradiction or inconsistency in findings? We argue that the effects of institutional characteristics on public service preference are mediated by individual beliefs about the system. Previous studies assume that individual have full knowledge or accurate beliefs about the institutional context, which they do not always do in reality.

This study seeks to understand how individual's beliefs about the government affect their choices of entry; in particular, we want to assess how these beliefs affect individuals heterogeneously across different traits, including ability, pro-social/altruistic attitude, political loyalty, and risk preference.

We investigate this question in the case of China, where entry into government is formalized and well-regulated. It is particularly crucial for a centralized, one-party regime like China, where entry into the political hierarchy exists only at the entry-level. Who chooses to enter the government directly impacts the pipeline of political and bureaucratic talent.

This study plans to combine survey questions with information treatments to accurately elicit individual beliefs and motivation of self-selection into civil service.

2 Study Overview and Hypotheses

This study seeks to answer two questions. First, who – in terms of individual traits and preferences – are more likely to self-select into the Chinese civil service? Second, what system-level factors – as perceived by individuals – motivate this self-selection? For both questions, the primary outcome of interest is an individual's career preference vis-à-vis the Chinese civil service. To answer the first question, we measure individual traits, including ability, pro-sociality, risk preference, and political attitude. We then investigate whether individual traits are correlated with propensity to self-select into the civil service. To answer the second question, we elicit and subsequently manipulate individual beliefs about the government regarding aspects such as promotion prospect and financial compensation. By examining how changes in beliefs about the government affect individual propensity to self-select into the civil service, we seek to causally identify motivations behind Chinese people's interest in a career in the government.

To our best knowledge, this study is the first on the topic of self-selection into government in the Chinese context. This is also the first study to examine how the interaction of (mis)beliefs and individual traits could affect career choices. We propose the following hypotheses, while remaining largely agnostic about the effects or direction of effects of various predictors at this point.

2.1 Individual Traits

In this study, we measure four individual traits, including ability, pro-social or altruistic attitude, risk preference, and political attitude vis-à-vis the Chinese regime. While ability is a valence issue central to the performance of any organization, including the civil service, pro-sociality is a trait particularly salient in the government sector, where civil servants regularly engage in the policymaking and delivery of public goods. Risk attitude is also a relevant trait for its implications for any principal-agent dynamic in an organization; it

is particularly salient in a centralized, top-down political structure like the Chinese civil service. Last but not least, potential candidates' political attitude is also a highly relevant consideration, from the government's perspective, especially in terms of their loyalty to the regime and propensity to emigrate (i.e., the opposite of loyalty).

We explore whether these traits are correlated with a person's propensity to self-select into the civil service by testing the following two-tailed hypotheses.

- H1.1: On average, individuals with higher *ability* have a different level of propensity to self-select into the civil service than those with lower ability.
- H1.2: On average, individuals with higher *pro-sociality* have a different level of propensity to self-select into the civil service than those with lower pro-sociality.
- H1.3: On average, individuals with higher *risk preference* have a different level of propensity to self-select into the civil service than those with lower risk preference.
- H1.4: On average, individuals who are more loyal to the Country and the system have a different level of propensity to self-select into the civil service than those are less loyal.

These hypotheses are designed to establish empirical patterns (if any) between individual traits and propensity to self-select into the civil service. As such, at the design stage, we are agnostic about the direction of these correlations. Additionally, as an exploratory effort, we also examine 1) whether these traits are correlated and 2) how they might jointly predict the propensity to self-select into civil service.

2.2 Information Treatment

In addition to innate traits, individuals decide whether they want to join the civil service based on a host of characteristics of this profession, including prospects for promotion,

financial compensation and other non-monetary benefits. In this study, we provide several information treatments on these issues and investigate how they affect individual propensity to self-select into the civil service.

2.2.1 Issue Salience

First, an information treatment, by discussing a particular issue, could affect an individual's career preference by increasing the salience of that issue. Thus, we first examine the average treatment effect of each information treatment.

- H2.1: On average, increasing the issue salience of *promotion prospects* in government affects individual propensity to self-select into the civil service.
- H2.2: On average, increasing the issue salience of *financial compensation* for civil servants affects individual propensity to self-select into the civil service.

2.2.2 (Mis)Beliefs and Correction: Promotion and Compensation

Besides issue salience, information treatments can also affect an individual's propensity to self-select into the civil service by altering his or her existing belief about this issue. While individuals form such beliefs based on their knowledge and understanding of the civil service, these beliefs can sometimes deviate quite significantly from reality; in other words, individuals may hold misbeliefs – rather than beliefs – about the civil service and, based on them, form their preference for it as a career.

It is thus expected that, when provided with new, credible information about the civil service, individuals will update their beliefs and thereby adjust their propensity to self-select into the civil service.

Empirically, we focus on the (mis)beliefs about the prospect for promotion and financial compensation inside the civil service. For each issue, we first elicit individuals' beliefs about the civil service, provide a randomly selected information treatment, and then elicit their

beliefs again. We estimate whether the resultant belief update from the information treatment has any effect on the propensity to self-select into the civil service. In other words, we investigate whether the gap between their (mis)belief and the true information contributes to her propensity to self-select into the civil service.

- H2.1a: On average, a change in an individual's belief about the *promotion prospects* in government affects her propensity to self-select into the civil service.
- H2.2a: On average, a change in an individual's belief about the *financial compensation* for civil servants affects her propensity to self-select into the civil service.

2.3 Interaction between Individual Traits and Beliefs

Beyond the hypotheses in the two sections above pertaining to individual traits and information treatments, respectively, it is likely that individuals of different traits respond to the same information treatment differently. We thus plan to make an exploratory effort to understand how individual traits and information treatments (especially the resultant belief correction) may jointly affect an individual's choice whether to self-select into civil service.

3 Survey Design

The survey consists of four parts: (1) basic demographics; (2) individual traits; (3) belief elicitation and information treatment; and (4) additional questions. We embed an experimental components in part (3), which we describe in greater detail below. Figure 1 visualizes the structure of our survey design. We also append the original questionnaire in Chinese in the pre-registry.

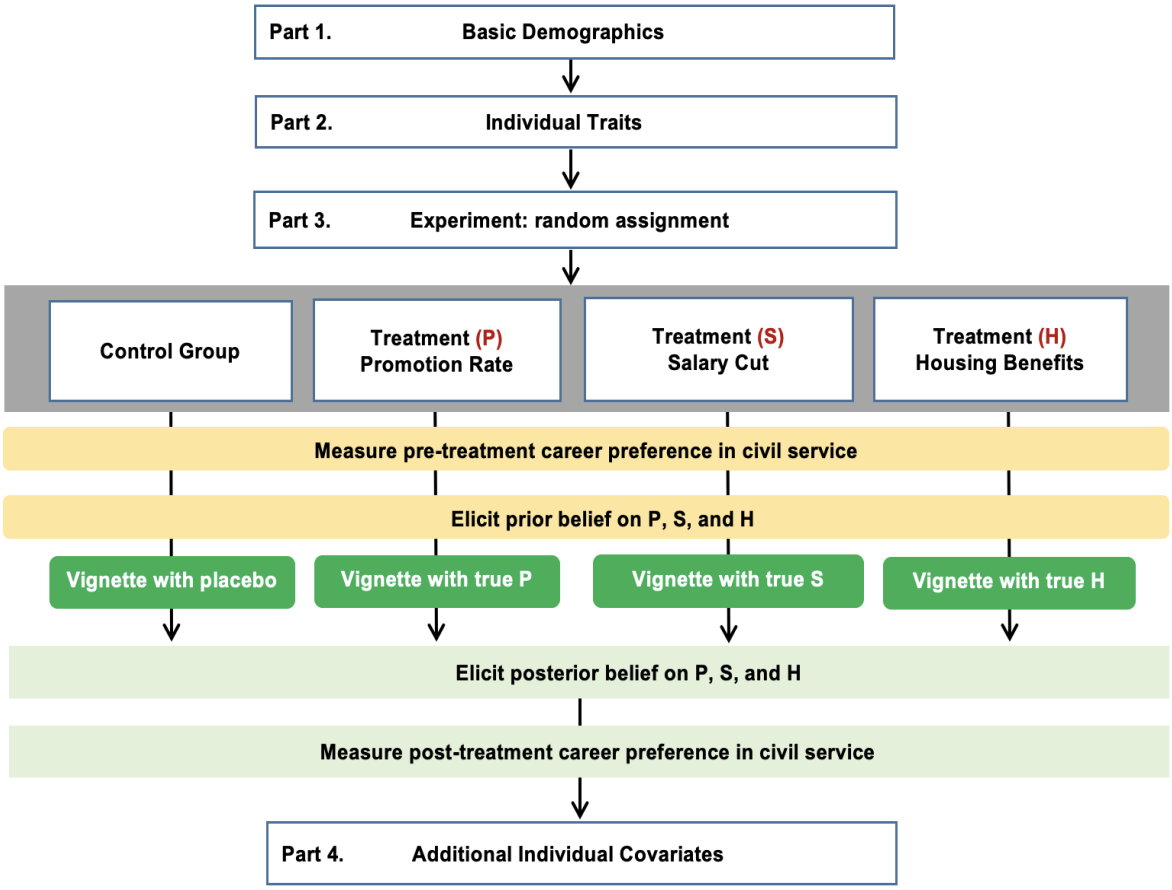
In Part 3, particularly, we employ randomized experiments to estimate causal effects of institutional characteristics of the government on individual interest in government jobs: government bureaucrats' promotion rate (**P**), salary cut (**S**), housing premium (**H**).[1] For promotion rate (**P**), salary cut (**S**), and housing premium (**H**), we use belief experiments in which we treat respondents with true information on these institutional characteristics to update their beliefs on these conditions, and then determine the changes in respondents' beliefs and interest in government jobs before and after treatment. All the changes in respondents' interest in government jobs will be further compared to their counterpart changes elicited from the control group after receiving a placebo vignette instead.

3.1 Part 1. Basic Demographics

In Part 1, we ask respondents about their basic demographics, including gender, birth year, current employment status, education degree that the respondent is currently pursuing, major in college, and primary residence. The question on education degree currently pursued is conditional on respondents answering "full-time student" in the question on their current

[1] We believe that these institutional characteristics are important determinants of individuals' interests in government jobs. In China's civil service system, entry-level bureaucrats are promoted by their superiors (as well as the Department of Organization) level by level. Higher administrative ranks usually imply higher wages and extra welfare compensations, greater power, more prestige and privileges. For salary cuts, the Chinese government has recently cut civil servants' salaries across different provinces. Besides, housing premium is another source of benefits that government bureaucrats and civil servants can have. The government pays as much as 18% of monthly salary for a civil servant's Housing Accumulation Funds with a 18% payment by a civil servant himself/herself.

Figure 1: The Survey Flow



employment status.

3.2 Part 2. Individual Traits

As discussed in Section 2, the individual traits of our interests include ability, pro-sociality and risk attitude. In the survey, we design a series of questions to measure each trait as accurately as possible.

Ability

We measure respondents' ability based on their undergraduate institution and performance on a national exam. The college enrollment system in China is highly standardized, based

on a finely calibrated national exam. Students are sorted into different tiers of universities, primarily based on their performance on the National College Entrance Exam (NCEE). We thus design two measures to capture their ability: 1) ranking of undergraduate institution, and 2) normalized NCEE score. While there are drawbacks to using either as a proxy for ability, they provide measurements that are comparable across localities and years. Information on undergraduate institution is elicited in Part 2 (subsection 3.2) while questions on NCEE performance are asked in Part 4 (subsection 3.4).

Pro-Sociality

We also design two indicators that measure each respondent's pro-social attitude: one experimental and the other behavior.

For the experimental indicator, following Hanna and Wang (2017), we use a "Dictator game" to measure respondents' pro-social preference, that is, individual altruism. We instruct respondents to divide a certain amount of money they receive as a windfall between themselves and a charity organization that they trust. We repeat this question twice with a different amount each time.

For the behavior indicator, we ask respondents whether they have participated in the following activities in the past three years: (1) blood donation; (2) disaster- or poverty-relief donations; (3) advocating, discussing, or forwarding messages *online* for social issues of their interests; (4) donations or participation in *face-to-face* activities for social issues of their interests; (5) serving as volunteers for anti-pandemic assistance; (6) other types of social work; or (7) none of the above.

Risk Preference

To measure risk preference, we also design two measures.

For the first measure, we use a battery of standard hypothetical lottery questions to

elicit respondents' risk preference. Our specific lottery design is similar to Global Preference Survey (see Falk et al. (2018)) and China Family Panel Studies (CFPS).

The respondents will be asked:

> *Suppose you have the following two options, one can be paid directly, while the other is determined by the outcome of a toss of coin, which one would you choose?*

Then the respondents are given the following choices:

1. *You get X Yuan with certainty.*
2. *After a toss of coin, head: you get Y Yuan, tail: you get 0 Yuan.*
3. *I'm indifferent between the above two choices.*

We vary the number of X and Y to further bound respondents' risk preferences. Specifically, we ask respondents with the following 3 combinations of X and Y: $\{X = 100, Y = 200\}$, $\{X = 100, Y = 150\}$, and $\{X = 100, Y = 300\}$.

Moreover, we complement the lottery-based measure with self-reported risk aversion level by asking a multiple-choice question that specifies different combinations of various benefits and risks.

Question: If you are considering an investment portfolio, which one among the following portfolios you prefer?

- ◦ High risk, high benefit
- ◦ Moderate risk, stable flows of benefit
- ◦ Low risk, low benefit
- ◦ Unwilling to take any investment risks

Loyalty to the Country and Government

We measure individual's loyal toward the country and the government by asking two sets of questions. The first set of questions elicit respondents' willingness to exit the country, i.e., foot voting.

If you disregard all realistic factors and obstacles, do you have a desire to go abroad? Please respond to the following options: 1 represents no desire at all, 7 represents a very strong desire. [Slider]

- Studying Abroad
- Working Abroad
- Immigrating

Considering your current personal and family situation, do you have any plans to go abroad in the next one to three years? Please respond to the following options: 1 represents no desire at all, 7 represents a very strong desire. [Slider]

- Studying Abroad
- Working Abroad
- Immigrating

Overall, how satisfied are you with the current social, cultural, and economic conditions in the country?

- Very unsatisfied
- Relatively unsatisfied
- Don't care about it
- Relatively satisfied

- Very satisfied

If you could invest in real estate globally without restrictions, how would you allocate your assets to maximize profits? (Hint: Please rate the following options according to your preference. A higher score indicates a stronger willingness to invest. You have a total of 10 points to distribute. For example, Li prefers to invest in real estate in the USA the most, followed by Mainland China and Hong Kong, but does not want to invest in other overseas real estate. He allocates 5 points to US real estate, 3 points to Mainland China real estate, 2 points to Hong Kong real estate, and 0 points to other overseas real estate, making a total of 10 points. [Constant Sum])

- Mainland China Real Estate
- Hong Kong Real Estate
- US Real Estate
- Other Overseas Real Estate outside the US

If you could invest in stocks globally without restrictions, how would you allocate your assets to maximize profits? (Please rate the following options according to your preference. A higher score indicates a stronger willingness to invest. You have a total of 10 points to distribute. For example, Qiang prefers to invest in US stocks the most, followed by Hong Kong stocks and other overseas stocks outside the US, and is least willing to invest in Mainland China stocks. He allocates 4 points to US stocks, 3 points to Hong Kong stocks, 2 points to other overseas stocks outside the US, and 1 point to Mainland China's stock market, making a total of 10 points. [Constant Sum])

- Mainland China Real Estate
- Hong Kong Real Estate

- US Real Estate
- Other Overseas Real Estate outside the US

The second set of questions ask respondents' political attitude. We aim to examine whether respondents' attitude toward the China's current system.

Since the reform and opening up, China has explored a unique path of development based on its own political system and social conditions. Which of the following statements about the Chinese model comes closest to your personal view?

1. The Chinese model has achieved tremendous success in economic development and will continue to provide a strong driving force for China's future development.
2. The Chinese model has begun to show limitations in recent years, and if necessary adjustments are not made, China's future development will face severe challenges.

Without considering the objective conditions and national circumstances of different countries, do you think China's development model and experience are worth learning from and emulating by other developing countries?

- Not worth it at all
- Relatively not worth it at all
- It doesn't matter whether it's worth it or not.
- Worth a little bit
- Worth a lot

Do you agree with the following statement? "The government is like the head of a household; no matter what decisions it makes, there are certainly reasons behind them, and we should all obey and understand."

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Do you agree with the following statement? "Foreign journalists who frequently publish negative reports about China should be allowed to enter China."

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Do you agree with the following statement? "Foreign journalists who frequently publish negative reports about China should be allowed to enter China."

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Do you agree with the following statement? "I would rather live under our political system than under any other system I can think of."

- Strongly disagree
- Disagree

- Agree
- Strongly agree

Do you agree with the following statement? "China's various systems are already well-developed, and overall, there is no need for further reforms."

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Do you agree with the following statement? "Decoupling between China and the United States will only cause short-term shocks. Even if China severs economic ties with developed countries, it will not affect its long-term economic development."

- Strongly disagree
- Disagree
- Agree
- Strongly agree

3.3 Part 3. Experiments

In Part 3, we design experiments that first elicits respondents' beliefs pertaining to the government and the civil service system and then provides various information treatments to update their beliefs. The objective is to investigate if any updating of beliefs on the part of the respondents would lead them to adjust their interest in pursuing a career in the civil service system. The institutional characteristics with such a belief experimental design

include government bureaucrats' promotion rate (**P**), salary cut (**S**), and housing premium (**H**).

Respondents are randomized into five groups: control group, promotion treatment group, salary-cut treatment group and housing-premium treatment group. Before receiving information treatment (about **P**, **S**, **H**, and **I** respectively), they are asked about their pre-treatment interest in civil-service jobs as well as their prior beliefs on institutional characteristics (only but all of **P**, **S**, and **H**). After receiving information treatment, they are asked about their post-treatment interest in civil-service jobs as well as their posterior beliefs on all the three conditions (**P**, **S**, and **H**), regardless of the specific condition group that they are in.[2] We also ask in the control group the same set of questions on pre-treatment interest and prior beliefs before giving a placebo vignette to respondents, and the same set of questions on post-treatment interest and posterior beliefs after the placebo vignette condition.

3.3.1 Pre-Treatment Interest in Civil-Service Jobs

In this pre-treatment stage, we plan to elicit respondents' *prior* individual interest in the civil-service jobs. We measure respondents' relative interests in Civil-Service jobs, with a given set of alternatives (including public-sector enterprise, state-owned enterprise, foreign-owned company, private company, and own business). The inclusion of such a set of alternatives is to set up a benchmark for respondents when they consider their career choices.

Question: Where would you like to be after graduation from your college/university? Please evaluate the following options. You have 10 points in total to assign among all 6 options to indicate your relative interests in them.

(Hint: For example, Xiaoqiang would like to be employed by a state-owned enterprise the most, then a foreign-owned company the second, and the private company the third, no for others. Xiaoqiang's distribution of 10 points for these three options will perhaps be 5, 3,

[2]This design is to make all treatment groups are comparable to the control group in terms of questionnaire structure, since the control group, serving as the comparison to all four treatment groups, must answer a questionnaire asking posterior beliefs on all three institutional characteristics.

and 2 (adding up to 10) with all the others 0. Or, for example, another guy, Xiaoming only wants to be employed by a public-sector enterprise, then his distribution of points for this option will be 10 and all the others 0.)

- ◦ Government or civil-service organization [points filled]
- ◦ Public-sector enterprise [points filled]
- ◦ State-owned enterprise [points filled]
- ◦ Foreign-owned company [points filled]
- ◦ Private company [points filled]
- ◦ Own business [points filled]

Total points [automatic points filled]

Besides, we use an additional question to ask about their motives when choosing careers as follows, in which the order of options is randomized across individual respondents.

Question: As for your post-graduation career choices, which factor will you consider the most among: (Hint: You can choose up to 3 options).

- ◦ Moderate working pressure
- ◦ Profession/major fit
- ◦ Payroll package
- ◦ Contributions to the society
- ◦ Fulfilling self-value and aspiration
- ◦ Development of a wide social network
- ◦ Cooperative atmosphere in workplace
- ◦ Sharing some aspirations with working partners
- ◦ Career development and promotion prospect

3.3.2 Prior Beliefs on Institutional Characteristics of Government

In this pre-treatment stage, we also plan to elicit their *prior* belief on different institutional characteristics of the Chinese government. These prior beliefs include:

The prior belief on **P**: Respondents' estimate of average promotion prospects of a civil servant from the Section (*ke ji*) level to the County/Division level (*xian/chu ji*), as well as their own estimate of individual promotion prospects across the same levels.

The prior belief on **S**: Respondents' estimate of salary cuts as a proportion of monthly salary for civil-service jobs.

The prior belief on **H**: Respondents' estimate of the Housing Accumulation Funds that the government pays for civil servants as a proportion of monthly salaries.

Whenever we ask respondents questions on prior beliefs, we plan to show respondents some background contexts. The first one is an introduction to the promotion rules of the Chinese Civil-Service system, with a picture visualizing the pyramid-shaped hierarchical structure of the promotion stairs. Figure 2 presents this pyramid in which a civil servant could become an entry-level civil servant at the lowest Staff (*keyuan*) level, then could be promoted to Township/Section level (*xiang/ke ji*), to County/Division level (*xian/chu ji*), Prefecture/Bureau level (*di/ting ji*), Province/Ministry level (*sheng/bu ji*), and the highest rank National level (*guojia ji*). The picture also lists the numeric ranks for the principal (*zhengzhi*) and deputy (*fuzhi*) positions at each level. This will provide a brief background about the promotion structure of the Chinese Civil-Service system.

An interpretation paragraph will follow this picture, saying:

> *"In the current administrative ranks of the Chinese government, each civil servant has her/his own administrative rank. Most of civil servants start from the entry level and then get promoted gradually, level by level, based on their working performance."*

The multiple-choice questions on respondents' prior belief on their individual promotion

Figure 2: The Promotion Pyramid: Hierarchical Structure of China's Civil Service System

rate and the average promotion rate respectively will follow this piece of background context:

Question: Based on your estimation, how much is the proportion of the Section-level (*ke ji*) cadres and civil servants that can get promoted to County/Division level (*xian/chu ji*), on average in our country?

- 0.5%
- 1%
- 2%
- 5%
- 15%
- 25%
- 50%

Question: If you will enter the government and civil service system, how likely do you think you can get promoted to County/Division level (*xian/chu ji*)?

- 0.5%
- 1%
- 2%
- 5%

- 15%
- 25%
- 50%

The background context on the civil service system's recent salary cut is the news that the government has made salaries cuts in several provinces' civil service systems. It is put as the following paragraph:

> *"In recent one or two years, local fiscal revenues shrank, and public expenditure rocketed due to the COVID-19 pandemic as well as other macroeconomic shocks. There have been news that governments in many localities have cut down their civil servant salaries."*

Then this background context is followed by the multiple-choice questions asking respondents' estimates of salary cut to the entry-level civil servants in their own provinces.

Question: Based on your estimation, how much is the proportion of salary cuts to the entry-level civil servants in your resident province?

- 0%
- 1 - 10%
- 11 - 20%
- 21 - 30%
- 31 - 40%
- 41 - 50%
- More than 50%

The background context on housing premium is an introduction to the government policies towards Housing Accumulation Funds that applies to private-sector employees:

"Housing Accumulation Funds, i.e., the 'One Housing Fund' among the so-called 'Five Insurances and One Housing Fund' (Five Insurances include: pension, medical insurance, unemployment insurance, work-related injury insurance, maternity insurance). It is a long-term housing deposits monthly paid by urban employees and their employers, respectively as certain proportions of employees' monthly salaries to their individual accounts for housing funds. Individual employees can use these housing funds for housing purchases, rents, or house maintenance. Simply put, Housing Accumulation Funds is an important source of welfare to urban employees.

According to the government's 'Regulation on the Administration of Housing Accumulation Funds' (2019 Revision), urban employees and their employers should respectively pay by no-less-than-5% of employees' monthly wage. Some prefectures with better economic conditions could appropriately raise that specified proportion. For most ordinary professions, employees and employers should pay to Housing Accumulation Funds by 6% of employees' wage respectively."

Similarly, this background context is followed by a multiple-choice question asking about respondents' estimates of the proportion of monthly wage paid to Housing Accumulation Funds:

Question: Based on your estimation, in your resident province, how much the government pays for their civil servants for the Housing Accumulation Funds, as a proportion of civil servants' monthly wage?

- ◦ 3%
- ◦ 6%
- ◦ 9%
- ◦ 12%
- ◦ 18%

- 24%
- 30%

We specify different orders in displaying these paragraphs of background contexts and corresponding questions on prior beliefs for different condition groups. The order of questions on prior beliefs is arranged as follows: For the control group, the question about the prior belief on **P** is put the first, **S** the second, and finally **H** for the control group. For the other three treatment condition groups, the prior-belief question corresponding to the condition for which respondents receive information treatment will be placed in the last position of the pre-treatment stage, in order to prompt respondent to consider the corresponding context. The information treatment will follow this prior question as discussed in the following design.

3.3.3 Information Treatment

Information Treatment on Promotion Prospect

For the treatment group about the promotion prospect of civil servants, we will show respondents the following material to update their beliefs on both the average and their individual promotion prospects.

> *"The following is news coverage from Wangyi News:*
>
> *There are in total 0.9 million Section-level (ke ji) cadres in our entire country. Among them, 40,000 will be selected by the Party's Department of Organization as prospect candidates for County/Division-level (xian/chu ji) cadres. Thus, the average promotion rate of Section-level cadres to the County/Division level is* ***4.4%****. Assume that you have become a Section-level civil servant. If you're lucky to be promoted, you will still spend at least 7 years to become a County/Division-level cadre.*
>
> *A recent study conducted by the party school affiliated to Beijing Munici-*

pal Committee on the career paths of 200 outstanding Bureau-level (ju ji) and Division-level (chu ji) government officials in Beijing shows that these outstanding officials spent on average about 11 years getting promoted from ordinary entry-level civil servants to Deputy-Division-level heads (fu chu zhang)".

Then follows a multiple-choice question to check if respondents realize any change in their beliefs.

Question: Based on the above material, how is the average promotion rate of Section-level cadres to the County/Division level, compared to your previous estimate?

- ◦ Higher than your previous estimate
- ◦ Lower than your previous estimate
- ◦ Almost no difference from your previous estimate

Information Treatment on Civil Servant Salary Cut

For the treatment group with the condition of salary cut, we will show respondents a news report about government's cut on civil servant salaries to update their beliefs on the proportion by which the government will cut down civil service salaries:

"*On June 30, 2022, the news coverage from Caixin Media, a famous media in China, of civil servant salary cuts in many Coastal cities caused heated public discussion.*

According to the news coverage, civil servants in many localities has encountered a wave of salary cuts by about 20% or 30%. During this salary-cut 'storm', civil service agencies in Guangdong, Zhejiang, and Jiangsu provinces have been hit hard. According to the estimate of a Section-level civil servant from Longhua District, Shenzhen, his salaries will be reduced by ***more than 20%****. An entry-level cadre (a staff member) believes that this wave of salary adjustment will cut*

down 40% of his bonus, even though the baseline wage will be somehow raised. Thus, his estimated overall annual income will decrease by 1/3.

'In regions with more developed economies, salary cuts are severer.' A Section-level cadre in Zhejiang province told Caixin Media. One civil servant lamented online that he has purchased a house with mortgage in localities where he works, but will not be able to afford my monthly mortgage payment after the salary cut."

Then follows a multiple-choice question to check if respondents realize any change in their beliefs.

Question: Please estimate again, how much is the proportion of salary cuts to the entry-level civil servants in your resident province?

- ◦ Higher than your previous estimate
- ◦ Lower than your previous estimate
- ◦ Almost no difference from your previous estimate

Information Treatment on Civil Servant Housing Funds

For this treatment group, we will show respondents the following material to update their beliefs concerning civil servant housing accumulation funds:

"The following news coverage is from Caixin Media.

According to government regulations, civil servants have the highest monthly proportional payment by employers among all professions, that is, 12% of civil servants' monthly salary. Civil servants also pay to the housing funds 12% of their monthly salary. More importantly, the Housing Accumulation Funds for civil servants are proportional to their monthly income, instead of being proportional to their monthly baseline wage. In addition to baseline wage, the actual monthly income of a civil servant includes various extra welfare allowances paid by local governments that amount to 1/3 *of their monthly income. Taking extra welfare allowances into consideration, the actual Housing Accumulation Funds*

*payment by the government to civil servants' personal account is about **18%** of their monthly baseline wage.*"

Then follows a multiple-choice question to check if respondents realize any change in their beliefs.

Question: How is the housing-fund benefits for civil servants mentioned in the above material, compared to your previous estimate?

- ◦ Higher than your previous estimate
- ◦ Lower than your previous estimate
- ◦ Almost no difference from your previous estimate

Placebo Vignette for Control Group

We plan to use a news coverage on climatological changes in many places across the entire country as a placebo vignette received by respondents in the control group. The information contained in the vignette includes some figures that might change respondents' perception of climate change but have nothing to do with the civil service system.

"The following news coverage is from Xinhua Media:

According to the data from China's Climate Center, the country-average number of high-temperature days is 5.3 days since this June, 2.4 more days than normal periods and marks a peak since 1961 in a year-on-year basis. Until July 12, extreme high temperature events (EHTE) have continued for 30 days, spreading over 502.1 square kilometers of our homeland and influencing the lives of more than 0.9 billion people.

It has been reported that there were typical years of large-scale consistent EHTEs, including 2003, 2013, 2017, etc. Generally speaking, EHTEs began to appear in an earlier calendar time this year than the above three years. Even though the EHTEs this year were less severe than these three years in terms of

durations and the number of meteorological stations detecting historically peak temperatures, and less severe than those in 2017 in terms of influence scope and the corresponding highest temperature detected, but severer than those in 2003 and 2013 in terms of these figures."

Then follows a multiple-choice question that asks respondents' opinion on climate change.

Question: According to the above material, how much are you worried about the climate change?

- ◦ Not worried at all
- ◦ Not quite worried
- ◦ Quite worried
- ◦ Very worried

3.3.4 Post-Treatment Interest and Posterior Beliefs

In the post-treatment part, we plan to ask respondents from both four treatment groups and the control groups their posterior beliefs on three institutional characteristics (average and individual promotion prospects **P**, the proportion of salary cut **S**, the proportion of Housing Accumulation Funds **H**).

The order of questions on posterior beliefs concerning different institutional characteristics is arranged as follows: For the control group and the question about the posterior belief on **P** is put the first, **S** the second, and finally **H** for the control group. For the other three treatment condition groups, the posterior-belief question corresponding to the condition for which respondents receive an information treatment will be placed in the first of the post-treatment stage in order to avoid cognitive costs amid the individual belief updating process.

The following questions are for posterior beliefs on **P**, **S**, and **H** respectively:

Question: Based on your estimation, how much is the proportion of the Section-level (*ke ji*) cadres and civil servants that can get promoted to County/Division level (*xian/chu ji*), on average in our country?

- 0.5%
- 1%
- 2%
- 5%
- 15%
- 25%
- 50%

Question: Based on your estimation, if you will enter the government and civil service system, how likely do you think you can get promoted to County/Division level (*xian/chu ji*)?

- 0.5%
- 1%
- 2%
- 5%
- 15%
- 25%
- 50%

Question: Based on your estimation, how much is the proportion of salary cuts to the entry-level civil servants in your resident province?

- 0%
- 1 - 10%

- 11 - 20%
- 21 - 30%
- 31 - 40%
- 41 - 50%
- More than 50%

Question: Based on your estimation, in your resident province, how much the government pays for their civil servants for the Housing Accumulation Funds, as a proportion of civil servants' monthly wage?

- 3%
- 6%
- 9%
- 12%
- 18%
- 24%
- 30%

More importantly, we plan to ask their self-reported interests in civil-service jobs *again*:

Question: Now we want to know your career plan again. Where would you like to be after graduation from your college/university? Please evaluate the following options. You have 10 points in total to assign among all 6 options to indicate your relative interests in them.

(Hint: For example, Xiaoqiang would like to be employed by a state-owned enterprise the most, then a foreign-owned company the second, and the private company the third, no for others. Xiaoqiang's distribution of 10 points for these three options will perhaps be 5, 3, and 2 (adding up to 10) with all the others 0. Or, for example, another guy, Xiaoming only

wants to be employed by a public-sector enterprise, then his distribution of points for this option will be 10 and all the others 0.)

- ◦ Government or civil-service organization [points filled]
- ◦ Public-sector enterprise [points filled]
- ◦ State-owned enterprise [points filled]
- ◦ Foreign-owned company [points filled]
- ◦ Private company [points filled]
- ◦ Own business [points filled]

Total points [automatic points filled]

By comparing the change in individual respondents' interests in civil-service jobs before and after treatment for a group of specific condition to a counterpart change for the control group provided only with a placebo vignette, we can use such randomized multiple-arm experimental design to estimate the causal effects of information update about that specific condition on the changes in respondents' interests in civil-service jobs.[3].

3.4 Part 4. Additional Demographics

In addition to individual traits in subsection 3.1, we plan to collect an extra set of individual demographic characteristics through direct survey questions. These individual characteristics include political affiliation, annual household income, parents' political affiliations and their employment sectors (before retirement if retired).

[3]This amounts to a difference-in-difference estimation which compares before-and-after change across treatment and control groups. For more details on our estimation equations, see section 6

4 Data Collection

To implement the survey, we plan to field two rounds of online surveys in China in partnership with a survey company.

4.1 Sample Selection

One concern with studying career preference is the role of socialization. Individuals form career preferences not only based on self-interested calculation, they are also influenced by the norms, discourses, and preferences of the people and place they encounter, such as parents' occupation and peer influence, as well as the unique economic and cultural dynamic of a locality. To minimize the unaccounted and often unobservable heterogeneity in different socialization contexts, we only recruit respondents who are currently attending a college or university for their undergraduate studies. This restricts the sample to a few birth cohorts. More importantly, without prior work experience, students are likely to approach career preference similarly. Compared to people who are already working, students also face less friction and transaction cost in considering various career paths. Also, campus culture and atmosphere tend to homogenize the student population.

4.2 Power Analysis

Based on pilot studies and the research design, we've determined that 250 respondents per treatment group should provide sufficient power for our analysis. As such, we plan to recruit 1,000 respondents for each wave of the survey. The total sample size of the survey is planned to be 2,000.

4.3 Survey Implementation

We plan to field the online survey between August 2024 and September 2024. The survey questionnaire will be disseminated by the survey company through its platform. The survey itself takes approximately 10 minutes to complete.

All eligible participants will first be provided with information about the survey to decide whether they'd like to give consent and participate. Upon consent and completion of the survey, a respondent will receive a small amount of money as compensation.

5 Variable and Measurement Construction

Using the survey questions and responses, we construct the variables of interest, predictors, and other covariates for the purpose of analysis. We classify them into four broad categories and denote them accordingly to be discussed further in the empirical strategy later.

5.1 Outcome of Interest

- **Propensity to Self-Select into Civil Service**: Each respondent's pre- and post-treatment interest in civil-service jobs in the near future. We denote the prior as $\hat{Y}_{i,prior}$ and the posterior as $\hat{Y}_{i,post}$. The main outcome of interest is the intention to apply for a civil-service job in the near future. Both measures of pre- and post-treatment are a continuous scale from 0 to 10, among the total 10 points that respondents allocate between civil-service jobs and other alternatives. The more points allocated to the option "Government or civil-service organization", the more interested in civil-service jobs the respondent is.

5.2 Individual Beliefs and Perceptions

- **Prior and posterior beliefs on civil service**: Beliefs on the institutional characteristics of the civil-service system. Specifically, they include respondents' beliefs on **P** (average promotion rate, individual own promotion rate), **S** (the proportion of civil servant salary cut), and **H** (the proportion of civil servant Housing Accumulation Funds premium). We denote individual beliefs on institutional characteristics as $\hat{y}_{i,belief}$ while the true figure as y, where $belief = \{prior,\ post\}$ indicating prior beliefs and posterior beliefs respectively. We elicit the priors ($\hat{y}_{i,prior}$) and posteriors ($\hat{y}_{i,post}$) on the above three institutional characteristics.

5.3 Individual Traits

For each respondent, we measure ability, pro-social preference (altruism) and risk preference. We denote them as x_i^e.

- **Ability.** We construct two variables that measure a respondent's ability: (1) rank/type of undergraduate institution, and (2) normalized NCEE score.

  For the first one, we use an ordered rank of undergraduate institutions: coded as 0 if other universities/colleges, 1 if first-tier universities/colleges, and 2 if "211" or "985" universities. We also construct a dummy variable coded as 1 if "211" or "985" universities and 0 otherwise.[4]

  Alternatively, we normalize each respondent's NCEE score based on the admission cutoff score in the year and province where she took the exam. The distance between

[4]In China, the universities are officially ranked by the Ministry of Education. "985" universities are those universities listed in the "985" project, a project that the Chinese government funded to nurture worldwide first-class universities. They are at the highest rank and with the most fundings from the government. "211" universities are those listed in the "211" project, which aimed to nurture 100 "focused" universities in the 21st century. All the "985" universities are also in the list of the "211" project, but it is not the case conversely. Other universities outside the "985" and "211" universities are ordinary first-tier universities or below. The more prestigious the university is, the higher standards it requires for students to pass their entrance examinations and get enrolled.

her score and the cutoff would yield a continuous variable that reflects her ability.

- **Pro-sociality**:The measures of pro-social preference are the amounts of money that an individual respondent donates to a charity from the total amount (CNY 100 and CNY 500 respectively).

  An alternative measure is how many realistic options in practice (see in section 3.2) that a respondent answers she/he has done among "blood donation", "disaster- or poverty-relief donations", "donations or participation in *face-to-face* activities for social issues of their interests", "serving as volunteers for anti-pandemic assistance", and "other types of social work".[5]

- **Risk preference.** The measure of risk preferences is an ordered variable indicating how risk-loving a respondent is. This measure equals 1 if a respondent chooses the lottery of CNY 300 (prob. $= 0.5$) and CNY 0 (prob. $= 0.5$) against the certain payment when $\{X = 100,\ Y = 300\}$, but chooses the certain payments when $\{X = 100,\ Y = 200\}$ and $\{X = 100,\ Y = 150\}$. It equals 2 if a respondent chooses the lottery of CNY 300 (prob. $= 0.5$) and CNY 0 (prob. $= 0.5$) when $\{X = 100,\ Y = 300\}$ and the lottery of CNY 200 (prob. $= 0.5$) and CNY 0 (prob. $= 0.5$) when $\{X = 100,\ Y = 200\}$, but chooses the certain payment when $\{X = 100,\ Y = 150\}$. It equals 3 if a respondent chooses lotteries against the certain payments in all three combinations. Observations with responses which are inconsistent with rational-choice rationale will be deleted.

  An alternative measure of risk preferences is an ordered variable over the options in the self-reported question concerning different combinations of risks and benefits: 0 if a respondent chooses "Unwilling to take any investment risks", 1 if "Low risk, low benefit", 2 if "Moderate risk, stable flows of benefit", and 3 if "High risk, high benefit".

[5]We only use the options "advocating, discussing, or forwarding messages *online* for social issues of their interests" and "never done anything related to above the 6 types of activities" as the baselines because these options are less costly than other options.

- **Loyalty.** we calculate a respondent's propensity to invest and study outside of Mainland China as a measure of loyalty. We also measure a respondent's political attitude.

5.4 Individual Covaraites

Individual demographic characteristics are denoted x_i^s. x_i^s includes: age (obtained from self-reported birth year), gender, political affiliation, political knowledge, political affiliation, political knowledge, political attentiveness (self-reported), annual household income, parents' political affiliations and their employment sectors (before retirement if retired).

6 Empirical Strategy

6.1 Correlation analysis: Individual Traits and Civil Service

To test the first set of hypothesis, H1.1-1.3, on individual traits and propensity to self-select into the civil service, we estimate the following model:

$$\hat{Y}_{i,prior} = \alpha + \lambda\, trait_i + \Sigma\, \theta_j X_{ij} + \varepsilon_i \tag{1}$$

where $trait_i$ is one of respondent i's traits, such as ability, pro-sociality, risk preference, loyalty and political attitude, X_{ij} is a host of individual-level covariates such as gender, birth cohort, political affiliation, household income, parents' occupation, etc.; and ε_i is the standard error clustered at the city level.

In addition, as a preparatory step to further causal analysis, we plan to first explore flexible correlations between variables collected, i.e., $\hat{Y}_{i,prior}$, $\hat{Y}_{i,post}$, $\hat{y}_{i,belief}$, $\hat{y}_{i,belief} - y$, $\hat{y}_{i,prior}$, $\hat{y}_{i,post}$, x_i^e and x_i^s. The main goal of the correlation analysis is to study what predicts individual career choices (choosing a civil servant job) and their (mis)-beliefs on the institutional characteristics. Specifically, the key correlations of interests are:

- How do (mis)-beliefs on institutional characteristics predict individual career choices (priors, posteriors, and changes). The dependent variable of the analysis are $\hat{Y}_{i,prior}$ and $\hat{Y}_{i,post}$, while the independent variable of the analysis are $\hat{y}_{i,belief}$, $\hat{y}_{i,belief} - y$, $\hat{y}_{i,prior}$ and $\hat{y}_{i,post}$.

- How do (mis)-beliefs on institutional characteristics predict individual career choices (priors, posteriors, and changes). The dependent variables of the analysis are $\hat{Y}_{i,prior}$ and $\hat{Y}_{i,post}$, while the independent variables of the analysis are x_i^e and x_i^s.

- How do individual traits predict individual (mis)-beliefs on institutional characteristics. The dependent variables of the analysis are $\hat{y}_{i,belief}$, $\hat{y}_{i,belief} - y$, $\hat{y}_{i,prior}$ and $\hat{y}_{i,post}$, while the independent variables of the analysis are x_i^e and x_i^s.

When conducting the correlation analysis, we control for other individual characteristics such as individual demographic information. Our purpose of correlation analyses is exploratory and do not involve any a priori hypotheses.

6.2 Empirical Specification 1

We consider using the empirical framework mentioned in Fuster and Zafar (2022) to study the causal impact of how treatments change respondent's career choices.

$$\left(\hat{Y}_{i,post} - \hat{Y}_{i,prior}\right) = \alpha + \beta \mathbf{1}\left(T_i = 1\right) + \varepsilon_i \tag{2}$$

Equation 2 is the first specification that we plan to use. T_i indicates whether the individual i is given the information treatment in equation 2. Specifically, $T_i = 1$ if i is given the information treatment, while $T_i = 0$ if i is not given the information treatment. β is the coefficient of interest which identifies how treatment moves individual intention to apply for a civil-service job in the near future. Because T_i is randomized by the researcher, β here has a causal interpretation. We plan to run Equation 2 for each treatment group against

the control group. Given $\beta_h = 0$ is the null hypothesis, Equation 2 tests the alternative hypotheses H2.1, H2.2 and H2.3 with $\beta_h \neq 0$.

Notice that when conducting the experiments involving **P**, **S** and **H**, we have a properly measured belief change $(\hat{y}_{i,post} - \hat{y}_{i,prior})$ for each of them, so we also plan to interact such a belief change with the corresponding treatments respectively.

$$\begin{aligned}\left(\hat{Y}_{i,post} - \hat{Y}_{i,prior}\right) =& \alpha + \eta\left(\hat{y}_{i,post} - \hat{y}_{i,prior}\right) \\ &+ \beta \mathbf{1}\left(T_i = 1\right) + \beta_b \mathbf{1}\left(T_i = 1\right) \cdot \left(\hat{y}_{i,post} - \hat{y}_{i,prior}\right) + \varepsilon_i\end{aligned} \tag{3}$$

We plan to run Equation 3 for each of the three treatment groups concerning **P**, **S** and **H** against the control group. The variable $(\hat{y}_{i,post} - \hat{y}_{i,prior})$ is the change in belief on **P**, **S**, and **H** respectively. β_b estimates the effects of treatment that vary with the change in corresponding beliefs. Specifically, given $\beta_b = 0$ is the null hypothesis, Equation 3 tests the alternative hypotheses H2.1a and H2.2a with $\beta_b \neq 0$, and tests the alternative hypotheses H2.3a and H2.3b with $\beta_b \neq 0$.

To further explore heterogeneous effects of the treatments, we extend Equation 2 to include the interactions of x_i^e with treatment T_i.

$$\left(\hat{Y}_{i,post} - \hat{Y}_{i,prior}\right) = \alpha + \beta \mathbf{1}\left(T_i = 1\right) + \beta_h \mathbf{1}\left(T_i = 1\right) \cdot x_i^e + \delta_1 x_i^e + \varepsilon_i \tag{4}$$

β_h is the coefficient of interest which helps us to understand heterogeneous response in different traits. For example, do more honesty individuals increase (or decrease) intention to apply for a civil-service job in the near future when they are informed there are more corruption cases than their beliefs? In the regression, x_i is either individual traits of preferences x_i^e (e.g., pro-social preferences and risk preferences respectively), or individual traits x_i^s collected from direct survey questions (ability).

6.3 Empirical Specification 2

In the first specification, we do not distinguish whether a respondent holds a prior belief that is lower than the provided true information. To take into account how prior belief impact the result, we use the empirical framework proposed by Cantoni et al. (2019) to study the causal impact of how treatments change respondent's career choices, i.e., intention to become a civil servant.

$$\left(\hat{Y}_{i,post} - \hat{Y}_{i,prior}\right) = \alpha + \beta T_i + \varepsilon_i \tag{5}$$

Equation 5 is the specification that we plan to use. α is a constant and ε_i an error term. β is the coefficient of interest which identifies how treatment moves individual intention to participant a CSE in the near future. When running the regression, we pool all respondents together. Different from equation 2, T_i is the treatment variable that equals to 1 if i receives a treatment and with prior belief lower than the truth, i.e., $\hat{y}_{i,belief} < y$. T_i equals to 0 for all individuals in the control group and individual in the treatment group with correct answers $\hat{y}_{i,belief} = y$. T_i equals to -1 for individual in the treatment group with correct answers $\hat{y}_{i,belief} > y$. Because T_i here is no longer fully randomized by the researcher, β in this specification is no longer causal. However, this specification does have its own advantage because it incorporates respondent's prior belief, which takes into account the direction of update. We plan to run the above regression for all sub-experiments.

To explore heterogeneous effects of the treatment, we extend equation 5 to study how x_i^e and x_i^s interact with treatment T_i.

$$\left(\hat{Y}_{i,post} - \hat{Y}_{i,prior}\right) = \alpha + \beta T_i + \beta_h T_i \cdot x_i + \delta_1 x_i + \varepsilon_i \tag{6}$$

β_h is the coefficient of interest which helps us to understand heterogeneous response in different traits. Again, x_i include all the individual traits collected by the experiments and

individual ability collected from direct survey questions.

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