

Party Membership as a Signal in China's Labor Market

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Abstract

This paper examines how grassroots political selection influences the market-oriented labor market in authoritarian regimes from a signaling effect perspective. In China, more than 65% of college students apply to join the Chinese Communist Party (CCP), which has a rigorous recruitment process that takes at least two years. The CCP recruits students with high noncognitive abilities that are valued but difficult for potential employers to observe. As a result, party membership in the labor market serves as an informative signal of high noncognitive abilities. Using the Chinese College Student Survey, this study finds significant self-selection and party-selection based on noncognitive abilities in the CCP's recruitment process; moreover, party members are 5.9 percentage points more likely to find a job and earn a 6.4% wage premium compared to non-party members in the labor market. Finally, a field experiment is conducted to identify the signaling effect of party membership on the labor market by sending fictitious resumes to potential employers. The results indicate that more than half of the party membership advantage can be attributed to the signaling effect.

Keywords: Labor market; noncognitive abilities; party membership; political selection; signaling

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1 Introduction

The quality of political selection and politicians is essential for any political system (Besley, 2005). Representative democracy is known for selecting high-quality politicians (Besley and Reynal-Querol 2011; Galasso and Nannicini 2011; Dal Bó et al. 2017). There is also a growing literature that examines the social impact of political selection in democracies.¹ In contrast, political selection in non-democratic regimes has received less attention. It is commonly believed that autocratic ruling parties can easily recruit talents into the political system to maintain their regimes because they dominate social resources. Therefore, prior literature on this topic has focused on bureaucratic selection among political elites (Jia, Kudamatsu, and Seim, 2015; Li and Zhou, 2005; Liu, 2019; Shih, Adolph, and Liu, 2012; Svobik, 2012). However, grassroots-level political selection is crucial for autocratic ruling parties to maintain their regimes. Yet, few studies have focused on this topic, partly due to a lack of appropriate data.

This study analyzes grassroots-level political selection in China and examines how this selection process affects the labor market in China’s market economy. Using the Chinese College Student Survey (CCSS), a unique dataset containing detailed information on the history of students’ applications to join the Chinese Communist Party (CCP), we observe a selection effect in the party recruitment process and differentiate between self-selection and party-selection. Additionally, we conduct a field experiment and find that party membership can serve as an informative signal to the labor market about party members’ high noncognitive abilities. This helps to explain why many young and highly educated Chinese individuals continue to show interest in joining the CCP, even during China’s transition to a market economy.

As the largest autocratic ruling party in the world, the CCP had more than 96 million members in 2021. On average, 3.9 million Chinese applied to join the CCP every year from 2012 to 2019, and more than 65% of college students applied to join the party.² However, joining the CCP is

¹For example, Gulzar (2021) provides a literature review, and studies by Folke, Persson, and Rickne (2016), Casey, Kamara, and Meriggi (2021), and Cirone, Cox, and Fiva (2021) analyze different political selection mechanisms. Other studies, such as Cavalcanti, Daniele, and Galletta (2018), examine how social structure can affect political selection, and Besley et al. (2017) and Folke, Rickne, and Smith (2021) study the interaction between gender and political selection. Additionally, Hall (2019) focuses on the social consequences of political selection.

²http://www.xinhuanet.com/politics/2019-06/30/c_1124689893.htm.

a challenging process that takes at least two years, from submitting an application to becoming a party member. Each applicant must undergo a highly selective, rigorous, and time-intensive recruitment process.³

Social scientists have long debated what motivates people to join the CCP, especially in the post-reform era of a market economy. Two theories have been suggested. The political capital theory argues that because the CCP dominates social resources in China, it can easily recruit talented individuals into the political system. The literature suggests that the CCP provides its members with more privileges than non-members, such as access to better educational opportunities and career selection (Walder 1995; Bian and Logan 1996; Li and Walder 2001; McLaughlin 2017). These privileges motivate people, especially younger generations, to join the CCP (Dickson 2014). One piece of evidence supporting this explanation is that party members continue to receive wage premiums in the reform era (Dickson and Rublee 2000; Zhou 2000; Hauser and Xie 2005; McLaughlin 2017). We re-estimate this premium by combining data from three nationally representative household surveys (details are in Appendix A). The results indicate that party members' monthly wages are 14% to 18% higher than non-party members', particularly in the private sector. However, due to the lack of detailed data on the CCP's recruitment process, the literature on this political capital theory may be vulnerable to selection bias. Moreover, prior literature cannot explain why party members are rewarded more in the private sector, which should be more likely than the public sector to reward productivity rather than political capital.

The selection theory argues that the party membership premium comes from the selection effect, whereby unobserved characteristics, such as personal ability, help people obtain party membership and also account for the wage premium (Li et al. 2007; Gu and Zheng 2018).⁴ However, a question arises from this selection theory. If the party membership premium can be attributed to the selection effect and the CCP does not provide sufficient privilege to its members, then why are the majority of young and well-educated Chinese people eager to join the Communist Party? This suggests that there may be other mechanisms at work.

By combining observational data from the CCSS and a field experiment, our study overcomes

³Details of the CCP recruitment process are provided in Section 2.

⁴Gerber (2000, 2001) also find evidence of the selection effect to explain the wage premium of communist party members in post-Soviet Russia.

the obstacles in prior research and discovers the interaction between grassroots political selection and the labor market. Following China’s marketization reforms, the CCP has gradually altered its recruitment preference to focus on young, well-educated individuals. As a result, the proportion of party members with college degrees has risen from 24.2% in 2002 to 52% in 2019. The recruitment process of the CCP places great emphasis on cognitive and noncognitive abilities. Through careful screening and supervision of applicants’ personality, moral standards, and behavior in daily life, the CCP seeks to ensure the quality of its party members, especially their noncognitive abilities. Similarly, firms also desire to attract talented individuals.⁵ However, identifying job applicants’ noncognitive abilities, such as personality and social skills, can be challenging during a short-term recruitment process. While cognitive abilities can be more easily identified through signals such as college reputation and GPA, noncognitive skills are more difficult to discern. The CCP’s selective screening process, therefore, enables party membership to serve as a reliable signal of an individual’s noncognitive abilities in the labor market.

Our first contribution in this study is to differentiate between self-selection and party-selection in the recruitment process.⁶ The CCSS data indicate that more than 65% of college students apply to join the CCP, and 28% of senior students are recruited before graduation. We find that significant self-selection and party-selection effects coexist in the recruitment process. More precisely, party members have significantly higher cognitive and noncognitive abilities than applicants who are not recruited. Additionally, we find that unrecruited applicants exhibit significantly higher noncognitive abilities than those who do not apply for party membership, which suggests that students’ self-selection behavior in applying for party membership could be attributed to their high noncognitive abilities. We provide evidence that an authoritarian political institution selects talents into its grassroots organizations. In particular, this selection process is effective at identifying noncognitive abilities, which are generally difficult to observe.

Our paper’s second contribution is analyzing how political selection can affect the labor market by identifying the signaling effect of party membership for college graduates. Using data from

⁵The importance of noncognitive abilities for the labor market has been addressed in a growing body of literature, including studies on personality and social skills (Almlund et al., 2011; Clark and Martorell, 2014; Deming, 2017; Heckman, Stixrud, and Urzua, 2006; Lindqvist and Vestman, 2011; Piopiunik et al., 2020; Weel, 2008).

⁶Xie and Zhang (2017) study determinants of party membership, such as family background, college reputation, and political attitude.

the CCSS, we find that party membership provides a significant advantage in the labor market for college graduates. Specifically, party members are 5.9 percentage points more likely to receive a job offer than non-party members, and on average, party members' starting salaries are 6.4% higher than those of non-party members. Notably, we find that the party membership advantage decreases when controlling for noncognitive abilities, but adding a cognitive ability measurement has no impact on this advantage.

Our empirical findings suggest that party membership can be used as a signal of high noncognitive abilities in the labor market. To identify this signaling effect, we conducted a field experiment from February to April in 2022. Following studies that use randomized resumes to examine discrimination (see Bertrand and Duflo 2017 for an overview),⁷ we submitted fictitious students' CVs to real online job postings on a leading recruiting website in China to apply for internships. We implemented a two-by-two (party member/not party member, noncognitive abilities signal/no noncognitive abilities signal) within-firm factorial design. Our results show that the party membership advantage is reduced by half when employers receive the signal of noncognitive abilities. This demonstrates the existence of the signaling effect of party membership because if party membership acted solely as political capital, sending the signal should not reduce the advantage.

In sum, our study provides evidence that the CCP's recruitment process is effective at selecting individuals with high noncognitive abilities. Moreover, party membership serves as a signal of these abilities to the labor market, which can lead to a significant advantage in job opportunities and starting salary. Our findings have implications for understanding the role of political selection in the labor market and the motivation behind individuals' decisions to join the CCP. Specifically, our results suggest that becoming a party member can be seen as a strategic move for college graduates seeking to signal their high noncognitive abilities to potential employers.

Our study offers a new perspective on understanding political selection in authoritarian regimes. Typically, to maintain a non-democratic regime, ruling parties or groups must recruit talented individuals into their political systems to improve governance and reduce potential threats (Bueno de Mesquita et al. 2005; Magaloni and Kricheli 2010; Svobik 2012; Han and Li 2021). However, this

⁷See, for example, Kline, Rose, and Walters (2022) for a recent experiment and Piopiunik et al. (2020) for an experimental evaluation of cognitive and noncognitive skills in the labor market.

recruitment process can be costly as the ruling party needs to allocate its resources or share its power to compensate these talents, such as by providing well-paid government positions or sharing the benefits of state-owned enterprises. Our findings suggest that the cost of recruiting talents can be alleviated and shared by the private sector under a market economy. The signaling effect of party membership not only provides a reliable signal of high noncognitive abilities in the labor market but also helps the CCP attract young talents.

The rest of the paper is structured as follows. Section 2 discusses the CCP’s recruitment strategy and procedure. Section 3 presents a simple model to guide the empirical analysis. Section 4 analyzes the CCP’s recruitment and college graduates’ labor market performance using CCSS data. Section 5 conducts a field experiment to identify the signaling effect of party membership in the labor market. Section 6 discusses alternative mechanisms that may explain the results. Finally, Section 7 concludes.

2 Recruitment by the CCP

2.1 Recruitment Criteria

The CCP was established in 1921 with only 53 members. As of December 2021, it boasted 96 million members and nearly 5 million local branches. The CCP’s recruitment strategy and criteria have evolved over time. As a communist party representing the proletariat, the CCP initially focused on recruiting workers, peasants, soldiers, and individuals with a proletariat family background dating back to the revolutionary era. Political loyalty was considered the most important criterion for selecting party members (Bian, Shu, and Logan 2001). However, since the start of the reform era in the 1980s, educational background and occupational competence have gradually become crucial factors in party recruitment (Bian, Shu, and Logan 2001; Hanley 2003).

In 2000, Jiang Zemin, the then general secretary of the CCP, revolutionized the party through his “Three Represents” theory. The theory states that the CCP should represent “the development trend of China’s advanced productive forces,” “the orientation of China’s advanced culture,” and “the fundamental interests of the overwhelming majority of the Chinese people.” This theory

shifted the CCP's recruitment from emphasizing a proletariat background to attracting talents from different fields, including businessmen, entrepreneurs, and intellectuals. Specifically, the CCP emphasized its aim to "intensify efforts to absorb advanced individuals among college students into the party and overall, to greatly raise the proportion of college party members to total college students."⁸ As a result, the proportion of party members with college degrees increased from 24.2% in 2002 to 52% in 2019.⁹

During this period, the requirements for recruiting party members with higher education placed a strong emphasis on not only ideology and political attitude, but also on a comprehensive evaluation of various abilities. In 1998, the CCP issued "Basic Standards of Party-Building Work in Colleges and Universities" as guidelines for the recruitment process. One guideline emphasizes that "[t]he party should prioritize the political standard and conduct investigations based on comprehensive qualities, including ideology, various abilities, moral character, and daily performance. . . check whether the potential party members have consistently gained excellent comments from people with daily connections and their role as pioneer models in study, social practice, and daily life." The guideline also stresses that "[a]void setting academic achievement as the decisive criterion in the recruitment process."¹⁰

2.2 Recruitment Procedure

Recruitment process is a lengthy and rigorous process, comprising four stages (Figure 1). First, an individual who is at least 18 years old voluntarily submits a written application to the local party branch. This branch interviews the applicant within one month of the application's submission. Some applicants are then selected as "party activists."

In the second stage, the local party branch assigns two party members as liaisons for each activist. The liaisons are responsible for providing party-related information to the activist and conducting investigations into their political attitudes, family background, moral character, daily

⁸See "Opinions on strengthening and improving party member development work among college students and the construction of party branches in universities" in Document No. [2005]14 by the General Office of the CPC Central Committee.

⁹<https://www.12371.cn/2021/06/30/ARTI1625021390886720.shtml>.

¹⁰Article 12 of the "Basic Standards of Party-Building Work in Colleges and Universities."

behaviors, and social relationships. The liaisons then submit their assessments to the party in a timely manner. During this stage, the activist is required to participate in party training events, voluntary activities, and community service organized by the party branch. Additionally, activists must regularly submit self-assessments to the party branch. Through this process, the local party branch obtains information about each activist’s daily activities, such as attendance in college classes and party training events. Qualified activists are then selected as “development targets.”

In the third stage, development targets are subjected to a comprehensive background check carried out by the upper-level party branch. They attend the party’s school to receive intensive training, which includes a mandatory exam. Afterward, the party selects those who have demonstrated exceptional qualities to become probationary party members. The second and third stages generally take one year to complete. Throughout this period, the local party branch not only evaluates the applicant’s performance but also solicits feedback from the applicant’s social connections, including classmates, teachers, and friends.

In the final stage, successful candidates begin a one-year probationary period. They are assigned to a local party branch and required to attend party events. The screening process in this stage is similar to the previous ones but with even greater stringency. After thoroughly reviewing the probationary member’s performance, as well as soliciting feedback from their close contacts, the party then determines whether to promote them to formal party members.¹¹

2.3 The Role of Noncognitive Abilities in the Recruitment Process

Through this lengthy and rigorous procedure, the CCP endeavors to recruit potential members based on a comprehensive evaluation of their qualifications. In addition to ideology and cognitive abilities, applicants’ noncognitive abilities are meticulously evaluated during the recruitment.

As a widely recognized personality measurement, the Big Five personality traits (BFPT) can be used to describe noncognitive abilities assessed during the party recruitment procedure.¹² For example, conscientiousness and emotional stability are crucial for candidates to pass the recruit-

¹¹<https://news.12371.cn/2014/06/10/ARTI1402408565380843.shtml>

¹²The BFPT include openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism\emotional stability.

ment process.¹³ Specifically, the local party branch maintains close contact with applicants and closely examines their ideologies, personalities, and behaviors in every aspect. As a result, applicants have to be disciplined, behave conscientiously, and remain emotionally stable throughout the long and rigorous screening process.

Extraversion and agreeableness, two other BFPT, are also stressed during recruitment. The CCP frequently communicates with the close contacts of applicants to gather feedback on their personalities, moral standards, and other daily behaviors. Negative comments from close contacts can result in an applicant's disqualification. The requirement that close contacts must have high regard for the applicant implies that party members should possess exceptional interpersonal skills and other qualities that elicit admiration.

3 A Simple Model and Empirical Hypotheses

Following Spence (1973, 1974), we use a simple screening model to show the signaling effect of party membership in the labor market. The model is highly abstracted from reality, as it serves only to guide our empirical analysis. We assume that a potential employee has a private type θ that characterizes a single dimensional ability, which is also used to proxy for the employee's productivity. The type can be either high ($\theta = H$) or low ($\theta = L$), with $H > L$. The common prior belief about the high type is π_H and the low type is $\pi_L = 1 - \pi_H$. We further assume that the firm is risk neutral and willing to hire any employee at a wage no more than the expected productivity (type) for the employee.¹⁴

In an ideal scenario where the firm can observe the employee's type, it would offer a wage of $w_H \equiv H$ to a high-type employee and $w_L \equiv L$ to a low-type employee. Now, supposing that the type cannot be observed, the firm offers a flat wage $\bar{w} = \pi_H H + \pi_L L$ to all employees.

Let's assume there is an optional signal (e), which is becoming a party member ($e = 1$). The signal comes with a cost of c_H for high-type employees and c_L for low-type employees before they enter the labor market. Given the lengthy and rigorous recruitment process, we assume that

¹³Emotional stability captures neuroticism in the standard BFPT.

¹⁴For simplicity, we assume the individual is willing to work at any wage and the firm has full bargaining power.

becoming a party member is costly and the cost of joining the CCP depends on the individual's ability. We assume that $c_H < c_L$, implying that individuals with lower ability have to put in more effort to join the CCP. In this situation, by observing the signal e , the maximum wage the firm is willing to offer is $w(e) = \beta(\theta|e)H + [1 - \beta(\theta|e)]L$, where $\beta(\theta|e)$ represents the firm's posterior belief that the employee's type is high.

We further assume incentive compatibility such that $c_H < H - L < c_L$. This assumption means that the cost difference of joining the CCP between high and low types of employees is large enough. As a result, only high type employees have an incentive to obtain the signal by becoming a party member. We focus on the separating perfect Bayesian equilibrium (PBE) and derive the following results.¹⁵

Proposition 1. *There exists a unique separating PBE such that*

1. *the firm offers the wage $w_H = H$ to the employee with the party membership, and $w_L = L$ to the employee without the party membership;*
2. *the high type employee joins the party and receives a net income $w_H - c_H$, while the low type employee does not join the party and receive an income w_L .*

The theoretical model provides a guideline for constructing tractable empirical tests. As discussed in the previous section, noncognitive abilities are carefully evaluated during the recruitment process. Therefore, we focus on testing the influence of noncognitive abilities on party member selection and the signaling role of party membership for noncognitive abilities in the labor market.

Part 1 of Proposition 1 states that college students with higher noncognitive abilities have an incentive to obtain party membership in the equilibrium, which is to distinguish themselves from others in the labor market. From here, we derive the first empirical hypothesis.

Hypothesis 1. [Self-selection] *Individuals with higher noncognitive abilities are more inclined to apply for party membership.*

The prediction of the model is based on the assumption that the party recruitment process can effectively identify individuals with high noncognitive abilities. This leads to our second hypothesis.

¹⁵A pooling equilibrium always exists in this model.

Hypothesis 2. [Party-selection] *For students applying to join the party, when all other factors are equal, applicants with higher noncognitive abilities are more likely to be recruited by the party.*

We predict that individuals who are party members have higher noncognitive abilities, which is attributed to both self-selection and party-selection.

Part 2 of Proposition 1 states that students with party membership receive higher wages in equilibrium.

Hypothesis 3. [Wage premium] *Party members on average obtain higher wages in the labor market than non-party members.*

However, observing a wage premium alone does not necessarily indicate a signaling effect of party membership in the labor market. The political privileges associated with party membership may also lead to higher wages, as suggested by the literature (Bian, Shu, and Logan, 2001; Dickson and Rublee, 2000). To test the signaling effect, we derive the last hypothesis.

Hypothesis 4. [Signaling effect] *The premium for party membership should be attenuated when an alternative signal of noncognitive abilities is available to potential employers in the labor market.*

Explicitly sending an alternative signal will not reduce the premium if it is solely driven by political privilege.

4 Empirical Analysis

In this section, we explore the CCSS and test Hypotheses 1 to 3. First, we describe the dataset, then we analyze who applies for and joins the party. After that we investigate the connection between party membership and labor market performance for college graduates. Finally, we discuss the limitations of the analysis based on the CCSS.

4.1 Data

To the best of our knowledge, the CCSS is the only nationally representative survey of Chinese college students. It was repeatedly cross-sectional, conducted annually from 2010 to 2015 by

the Institute of Education at Tsinghua University. In each round, 100 out of the total 2,305 colleges in China were selected using stratified random sampling, with college location and type as stratifying variables.¹⁶ Within each college, students were also randomly selected to guarantee the representativeness of the survey sample.

The CCSS comprises two questionnaires. The first was completed by students from all four-year cohorts and emphasized questions related to their self-evaluated attitudes and self-reported behaviors in college. This allows us to construct measures of noncognitive abilities, and to investigate the role of these abilities in party recruitment. We construct the in-school sample by including students who answered the first questionnaire. We use data from the 2011 and 2012 waves only, as the first questionnaire in other waves does not contain questions about the history of party membership application. We further restrict our in-school sample to students who completed questions related to noncognitive abilities. The in-school sample consists of 83,205 students with complete information for our analysis.

The second questionnaire was intended for students in their final semester only, and it emphasized questions related to their labor market performance, such as their job application status and starting salary. This allows us to investigate the relationship between party membership and labor market performance. Our graduate sample consists of students who completed the second questionnaire, and it spans all six waves from 2010 to 2015. We have excluded students who attended graduate school in China or abroad, as most of them did not report information on their job market performance. Our graduate sample comprises 13,435 students with complete information for the empirical analysis.

Both the in-school and graduate samples provide extensive information on students' characteristics, family background, academic performance, and extracurricular activities. Table 1 provides summary statistics for both samples. We now introduce the key variables used in our analysis.

History of party membership application and current membership status

¹⁶In the survey, China is divided into seven regions: Beijing, Shanghai, Tianjin, Northeastern China, Eastern China, Central China, and Western China. Colleges are divided into three tiers, with the first tier comprising the 39 colleges in Project 985, the second tier consisting of 61 colleges in Project 211 but not in Project 985, and the third tier including all other colleges. See Li (2004) for a description of the tiered tertiary education system in China.

Students in both in-school and graduate samples reported their history of party membership application and their membership status at the survey time. Table 1 shows that more than 65% of students in both samples had submitted an application. The share of party members is 12.0% and 27.9% in the in-school and graduate samples, respectively. The higher share of party members in the graduate sample is due to the fact that the recruitment process is lengthy and most party members in colleges are recruited in their senior years.¹⁷

Noncognitive Abilities

For the in-school sample, we use the BFPT to measure students’ noncognitive abilities. We construct the measures for the five traits by two steps. First, we collect a total of 28 questions from the comprehensive evaluation of students’ attitudes and behaviors in the first questionnaire of the CCSS. We then classify these questions into five domains, with each domain explicitly related to the definition of each of the five traits in psychology (Digman, 1990). For instance, questions such as “Volunteer to ask questions or participate in class discussions” and “Have a clear development plan” are, respectively, assigned to the domains of extraversion and conscientiousness. Appendix B Table B1 lists all questions in the five domains.

Second, we use factor analysis to generate one measure for each of the five traits based on students’ answers to questions in the corresponding domain. For each question, students answered how frequently they had a given experience (or whether they agreed with each of a set of statements) with a 1 *never* (1 *disagree*) to 4 *very often* (4 *strongly agree*) scale. Each measure has a mean 0 and standard deviation 1. Appendix B details the factor analysis.¹⁸ We also construct a single measure for noncognitive abilities by summing the values of the five measures for the five traits and then standardizing this measure.

The BFPT yields reasonable measures of noncognitive abilities in our study. As described in

¹⁷We are less concerned about reporting bias in our analysis for two reasons. First, the survey was carried out on campuses, and students’ basic information was cross-validated by the school administration. Second, the share of party members in our in-school sample is consistent with national statistics. Specifically, there were 23.1 million and 23.9 million college students in 2011 and 2012, respectively (National Bureau of Statistics, 2011, 2012). Of these, 2.8 million and 2.9 million were party members in 2011 and 2012, respectively (Organization Department of the CCP Central Committee, 2011, 2012). This indicates that in these two years, the share of college students who were party members was 12.1% at the national level.

¹⁸Alternatively, we generate the measures by simple summing the values of students’ answers to questions in each domain and then standardizing it. Our analysis results below remain robust.

Section 2, the party recruitment process emphasizes “comprehensive quality, ..., all kinds of abilities, and moral character” rather than any specific personality trait. Although the BFPT does not fully measure a student’s noncognitive abilities, it characterizes five important personality traits that are widely used in the literature of social science (Costa Jr and McCrae 1992; Borghans et al. 2008). Prior literature has demonstrated that these personality traits are important determinants of educational and labor market outcomes (Barrick and Mount 1993; Salgado 1997). Meanwhile, these traits are emphasized during the recruitment process (Section 2.3). Therefore, these measurements facilitate our analysis of the signalling effect of party membership in the labor market for noncognitive abilities.

The questionnaire for the graduate sample includes fewer questions for us to measure noncognitive abilities. Specifically, our factor analysis to generate a single measure of noncognitive abilities in this sample is based on three questions only: “Do you have a clear plan for the future?”; “How satisfied were you with your college life?”; and “How satisfied were you with your interpersonal relationships?” This measure may not fully reflect a graduate’s noncognitive abilities. We will discuss this limitation at the end of this section.

In Table 2, Panels A and B, respectively, describe the noncognitive abilities of party and non-party members in the in-school and graduate samples. In both panels, party members have higher noncognitive abilities. The differences are statistically significant.

Cognitive Abilities

We utilize the national college entrance exam (NCEE) score to measure students’ cognitive abilities in both the in-school and graduate samples. We chose this for three reasons. First, the NCEE is considered the most crucial examination in China; students’ scores are widely used to measure their cognitive abilities (e.g. Zhang and Watkins 2001). Second, the NCEE score is comparable across students, because the exam’s questions are identical for all students at the province–year–subject level.¹⁹ In contrast, comparing GPAs among students can be challenging due to the significant variations in grading systems used by different universities and departments. Third, almost all the students answering the CCSS provided their NCEE scores, whereas a substantial

¹⁹We standardize the NCEE score at the province–year–subject level.

number of students did not report their GPAs. This is because Chinese universities typically assess students' performance on a course-by-course basis using a 100-point scale, rather than computing a cumulative GPA. Panel A and B in Table 2, respectively, show that party members have significantly higher NCEE scores than non-party members for both the in-school and graduate samples.

Labor Market Performance

We use two variables to measure college graduates' labor market performance. One is an indicator for whether the graduate has ever received a job offer, and the other is the logarithm of the starting salary for the graduate's best job offer, conditional on that he or she has received at least one offer.²⁰ Panel B in Table 1 shows that approximately 77% of the graduates received at least one job offer, and the average starting salary for their best job offer was RMB 2,693 per month.²¹

Individual Characteristics and Family Background

Table 1 also reports summary statistics for individual characteristics and family background in both samples, including age, gender, ethnicity, *hukou* status, and maternal schooling years.²² On average, students in the graduate samples are two years older than those in the in-school sample. In addition to these variables, the survey includes information on students' high-school type and paternal occupation.²³

4.2 Selection in the Party Recruitment Process

In this section, we use the in-school sample to test Hypotheses 1 and 2 on self-selection and party-selection in the recruitment process.

Application for Party Membership

²⁰The "best job offer" was reported by the graduate.

²¹USD 1 $\approx$ RMB 6.82 in 2010.

²²Hukou is a system of household registration used in China to register and track the movements of its citizens. The hukou system classifies individuals into two categories: urban (or non-agricultural) and rural (agricultural), based on the registration location.

²³High schools are categorized into six types: magnet high schools at national, provincial, prefectural, and county levels, ordinary high schools, and vocational schools. Occupations are classified into 18 categories based on the Chinese Standard Classification of Occupations.

To test Hypothesis 1, we estimate the following equation:

$$Applicant_i = \alpha_0 + \alpha_1 NonCog_i + \alpha_2 Cog_i + X_i\alpha_3 + \lambda_t + \lambda_s + \lambda_p + \epsilon_i, \quad (1)$$

where the dependent variable $Applicant_i$ indicates whether individual i has ever submitted an application to join the party. $NonCog_i$ and Cog_i represent individual noncognitive and cognitive abilities, respectively, which are defined in Section 4.1. The vector, X_i , includes age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, and paternal occupation. We include survey year fixed effect (FE), λ_t , to account for any potential changes in recruitment details by the party from year to year; college FE, λ_s , to control for variations in recruitment details across different colleges; and home province FE, λ_p , to control for any cross-province heterogeneity in the tendency to apply to join the party. ϵ_i is the error term. Standard errors are clustered at the college level.

We are interested in the coefficient α_1 . Hypothesis 1 predicts that $\alpha_1 > 0$, i.e., *ceteris paribus*, students with higher noncognitive abilities are more likely to apply for party membership. Column (1) of Table 3 reports the estimated results for Eq. (1).²⁴ In Panel A, we use the single index of noncognitive abilities, which summarizes the five personality traits, as the independent variable. Consistent with Hypothesis 1, students with higher noncognitive abilities are more inclined to apply for party membership. Specifically, the probability of party membership application increases by 5.9 percentage points when the noncognitive-ability index increases by 1 standard deviation (SD), which translates to an 8.5% increase in application likelihood. The estimate is statistically significant at the 1% level. The result shows that students with higher cognitive abilities are also more likely to apply for party membership.

We then proceed to run five regressions using the five measures of personality traits as $NonCog_i$ one by one. Each coefficient estimate reported in Panel B of Table 3 is based on one regression. We find that students with higher values for the five personality traits are more likely to be applicants. Taking *Conscientiousness* as an example, the probability of being an applicant increases by 6.1 percentage points as the measure increases by 1 SD, which translates to a 9% increase in application

²⁴The estimated coefficients for all independent variables are reported in Table C1 Appendix C.

likelihood. All five estimates in Panel B are statistically significant at the 1% level.

Party Selection

To test Hypothesis 2, we re-estimate Eq. (1) with two changes. First, we replace the dependent variable with an indicator for being a party member. Second, we restrict the sample to students who are applicants for party membership to directly compare those who pass the screening process and those who fail. In other words, we empirically examine whether the party recruitment procedure can successfully distinguish these applicants' abilities. Hypothesis 2 predicts that α_1 is positive in this case.

Column (2) of Table 3 reports the results. Consistent with Hypothesis 2, the estimates in Panel A show that applicants with higher noncognitive abilities are more likely to be recruited by the party. Specifically, the probability of being a party member increases by 3.5 percentage points when the noncognitive abilities index increases by 1 SD, which translates to a 20.1% increase in the likelihood of being recruited by the party. The estimate is statistically significant at the 1% level. The party also selects the students with higher cognitive ability; the probability of being a party member increases by 1.4 percentage points when the NCEE score increases by 1 SD. The estimates in Panel B indicate that applicants with higher scores on the five personality traits have greater probabilities of being recruited.

Supplemental Analysis

We estimate Eq. (1) using the indicator for being an applicant as the dependent variable, but restrict the sample to non-party members (including non-applicants and applicants who failed in the recruitment process). The estimation results in Column (3) indicate that students who applied for party membership but failed still have higher noncognitive abilities than those who never applied. Combined with the results in Column (2), which compare applicants who succeeded with applicants who failed, we conclude that party members have the highest noncognitive abilities, followed by applicants who failed to be recruited by the party, while non-applicants rank last in terms of noncognitive abilities.

Discussion

The literature on noncognitive abilities and labor market performance finds that conscientiousness

and extraversion are important predictors of job performance (Barrick and Mount 1993; Salgado 1997; De Fruyt and Mervielde 1999; Tokar and Subich 1997; Eid, Schneider, and Schwenkmezger 1999; and Vinchur et al. 1998). Interestingly, our results consistently show that the estimated coefficients on these two traits are larger than those on other traits across the three columns in Panel B of Table 3. This coincidence implies that in the labor market, party membership can serve as a valid signal of noncognitive abilities.

We conduct a robustness check by replicating Table 3 but using third- and fourth-year students only. This is because college students in their first and second years who were not party members at the survey time still had the chance to join the party. Our results remain robust in this check (Table C2 in Appendix C).

4.3 Party Membership, Noncognitive Abilities, and Labor Market Performance

In this section, we focus on college graduates' labor market performance. To test Hypothesis 3, we estimate the following equation using our graduate sample:

$$Y_i = \beta_0 + \beta_1 P_i + \beta_3 Cog_i + X_i \beta_4 + \lambda_t + \lambda_s + \lambda_p + e_i, \quad (2)$$

where the dependent variable, Y_i , denotes measures for individual i 's labor market outcomes, as described in Section 4.1. P_i indicates the individual's party membership status, and e_i is the error term. All other variables are defined the same as in Eq. (1). We cluster standard errors at the college level.

Hypothesis 3 predicts that $\beta_1 > 0$, i.e., party members perform better in the labor market than other graduates. While the CCP aims to attract talented individuals, firms also share this objective. Employers can easily evaluate students' cognitive abilities based on signals such as academic performance and college reputation. However, identifying noncognitive abilities that are also crucial to job performance is more challenging for employers. Although job interviews and internships can provide some insight into these abilities, employers cannot invest in a recruitment

process as lengthy and extensive as the party's. Since its recruitment standards and process are public information in China, using party membership as a signal of high noncognitive abilities could be a reasonable choice for potential employers. Consequently, we expect to observe that party members have better labor market outcomes, such as a higher probability of receiving job offers or earning higher salaries.

Table 4 reports the estimated results for Equation (2), using the graduate sample. Columns (1)–(3) report the OLS estimates with the dependent variable of a dummy for whether the graduate receives any job offer. Column (1) shows that party members are more likely to receive a job offer than non-party members without controlling for cognitive and noncognitive abilities. The estimated coefficient remains almost unchanged after adding NCEE scores to the regression (Column (2)). However, after adding the index of noncognitive abilities to the regression, Column (3) shows that the coefficient of party membership decreases from 0.059 to 0.048. This suggests that 18.6% of the party membership advantage in job hunting can be attributed to the correlation between party membership and noncognitive abilities.

In the heterogeneous analysis, we run multinomial logistic regressions (Columns (4)–(6) of Table 4). The dependent variable is categorical; it equals 0 if the graduate received no job offer, 1 if the best job offer is from the public sector, and 2 if the best job offer is from the private sector. Based on these multinomial logistic regressions, Panels A and B, respectively, show the estimated odds ratio of receiving the best job offer from the public sector and the private sector, compared with no offer. The results indicate that party members have a significant advantage over non-party members in receiving job offers from both the public and private sectors.

In Table 5, a similar pattern is observed when we use the log wage of the best job offer as the dependent variable, based on the sample of graduates who received at least one job offer. Specifically, being a party member increases the monthly wage by 6.4% (Column (1)), and the premium decreases to 5.6% after we control for noncognitive abilities (Column (3)). Columns (4)–(6) show a significant positive wage premium for party membership in the public sector, and this premium slightly decreases from 3.7% to 3.3% after controlling for noncognitive abilities. The corresponding results for the private sector indicate that the wage premium drops from 7.8% to

6.7% after adding the noncognitive abilities measure (Columns (7)-(9)).

Interestingly, compared to the public sector, party members enjoy a smaller advantage in finding a job in the private sector (Panel A versus Panel B in Columns (4)–(6) of Table 4); however, they receive higher wage premiums when offered a job in the private sector (Columns (4)–(6) versus (7)–(8) of Table 5). Party members’ greater advantage in finding a job in the public sector may be associated with the government’s emphasis on loyalty and ideology. However, they still have a large and statistically significant advantage in finding a job in the private sector, consistent with party membership having a signaling effect for noncognitive abilities in the labor market. Compared with the public sector, the higher wage premium reflects that the wage structure is more flexible in the private sector, where workers’ wages are more likely to approximate their marginal productivity.

In sum, our estimation result is consistent with Hypothesis 3. Party members are more likely to find a job in both the public and private sectors, and they also enjoy a wage premium, especially in the private sector. All of these party membership advantages are reduced after controlling for noncognitive abilities.

4.4 Limitations of the Analysis Based on the CCSS

Our analysis based on the CCSS is subject to at least three limitations. First, the estimates of β_1 in Eq. (2) do not necessarily reflect the causal effect of party membership on graduates’ labor market performance. For instance, students’ political preference, which is unobserved in the data, may simultaneously correlate with their party membership status and labor market outcomes (Pan and Zhang 2023)

Second, there is room for improvement in measuring noncognitive abilities. Although the first questionnaire for all students include questions for a comprehensive evaluation of their attitudes and behaviors in college, these questions are not in the standard scale for measuring personality traits. Therefore, our measures may not evaluate each personality trait accurately or may reflect a composite of different traits. Moreover, the second questionnaire for graduates contains only a small number of questions regarding noncognitive abilities.

Third, we are unable to directly test Hypothesis 4 based on the signaling effect. Tables 4

and 5 show that the advantage of party membership decreases when the measure of noncognitive abilities is added to the regression. This result is consistent with the signaling story but does not demonstrate it.

5 Experimental Analysis

We conducted an experimental analysis to address these three limitations. First, we randomly disclosed information regarding party membership status when sending fictitious job applications to potential employers in the labor market. This enabled us to identify the causal impact of party membership on labor market outcomes. Second, we used the results of a standardized BFPT test as a measure for noncognitive abilities. Third, independent of the random allocation of party membership status, we further randomly disclosed information on noncognitive abilities when sending fictitious job applications. This setting allowed us to implement a two-by-two design (party member/not party member, noncognitive abilities signal/no noncognitive abilities signal), which provided us with a clean setting to explicitly test Hypothesis 4. That is, we simply assessed the labor market advantage of party membership by comparing responses to applications without the signal of noncognitive abilities and responses to those with the signal.

5.1 Experimental Design

We conducted the experiment in Beijing from February to April 2022.²⁵ In the experiment, we submitted fictitious curriculum vitae (CVs) for real online job postings on “shixiseng.com,” a leading recruiting website for internship applications in China.²⁶

We chose internship applications instead of formal job applications for two reasons. First, in China, college graduates seek jobs mainly through campus job fairs, school recommendations, and online recruitment. The enterprises that can participate in campus job fairs or recruit through school recommendations are selected by colleges, which generally favor large, well-known enterprises. Therefore, there is strong selection bias among employers that recruit fresh graduates

²⁵Due to the COVID-19 lockdown, we hired research assistants and conducted the field work in Beijing only.

²⁶According to its website, shixiseng.com had over 17 million registered job applicants and more than 1.9 million job postings by 2020. The site ranks first among all job boards that focus on campus recruitment.

through online recruitment platforms. Second, in recent years, large enterprises prefer to set up their own specialized recruitment portals to recruit college graduates. These portals require an official identity verification procedure, preventing us from using such portals for the experiment.

Using applications for internships is the best alternative to investigate the recruiting procedure for college graduates. Enterprises' demand for interns is much more flexible in terms of both time and quantity. To reduce the recruitment cost, most enterprises still rely on general online recruitment platforms to select interns. Notably, internship experiences are important for college graduates' employment; 68% of students in the CCSS graduate sample had internship experience. Based on the CCSS data, our regression analysis suggests that having internship experience increases the chance of getting a job offer by 10% (Table C3 in Appendix C)

On shixiseng.com, applicants must complete a standard CV template, which collects required information such as name, gender, age, and educational background. Optional information includes student organization experience, honors and awards, skills and languages, and a self-assessment. This setting allows us to implement a two-by-two (party member/not party member, noncognitive abilities signal/no noncognitive abilities signal) within-firm factorial design. For simplicity, we use P and S to denote party membership and noncognitive abilities signal, respectively. We exploit two sections in the CV template—*Student Associations and Organizations* and *Self-assessment*—to design four types of CVs: party member with noncognitive abilities signal ($P = 1, S = 1$); party member without noncognitive abilities signal ($P = 1, S = 0$); non-party member with noncognitive abilities signal ($P = 0, S = 1$); and non-party member without noncognitive abilities signal ($P = 0, S = 0$).

We randomized party membership status in the *Student Associations and Organizations* section of the CV template. In this section, applicants are allowed to enter information about their status in multiple organizations. Only CVs of types ($P = 1, S = 1$) or ($P = 1, S = 0$) state that the applicant is a party member. We assume that applicants are not party members if they submit CVs of types ($P = 0, S = 1$) or ($P = 0, S = 0$).²⁷ In addition, CVs of all four types stated that the applicant was a member of one of four randomly selected common student organizations:

²⁷This assumption is plausible in the Chinese context. We interviewed 56 graduates in two universities, among whom 30 were party members. All 30 said that they stated their party membership in their CV when applying for jobs. Of the other students, none of them explicitly stated in their CVs that they were *not* party members.

“Student Union” at the department level, “Student Union” at the college level, “Career Development Association,” and “Class Committee.”²⁸

We randomized the signal of noncognitive abilities in the *Self-assessment* section of the CV template. First, we asked our research assistants to take a formal and widely used personality test²⁹—the NEO Personality Inventory Revised (NEO-PI-R) (Costa & McCrae, 1992)—which is designed based on the Big Five personality traits.³⁰ Then, in this self-assessment section, we attached a summary of a standard BFPT test result to CVs of types ($P = 0, S = 1$) or ($P = 1, S = 1$) (See one example in Appendix D). In addition, CVs of all four types included information on the applicant’s hobbies and interests to make the fictitious applications appear authentic.³¹

A methodological issue with the audit study is that if characteristics being studied are uncommon on CVs, employers may realize they are being tested and behave differently (Balfe et al., 2021). Fortunately, our objects of interest—party membership and noncognitive abilities signal—often appear on real job applications.

The CV template on shixiseng.com includes other sections, such as age, gender, college, major, awards, skills, and languages. Since the party recruitment process also selects students with high cognitive abilities, to control for cognitive abilities in the experiment, we used three local mid-ranked public universities as the graduating colleges and randomly assigned them across the four type CVs. In addition, we selected the GPA level as “above average” for all types of CVs. For other sections, we designed a bank of items that borrowed from real CVs. We randomly drew items from these banks when filling in these sections, to ensure these contents were comparable across the four types of CVs (Appendix D lists the items in each section’s bank). All applicants in all CVs were aged 21 years, because most positions on shixiseng.com require applicants to work at least four days a week. Therefore, our fictitious applicants were described as third-year college students

²⁸We added a common organization membership to all CVs to minimize the possibility that differential responses to these two types of applications were caused by the completeness of the CV. Potential employers might think applicants were lazy if they left such an important section empty.

²⁹http://www.apesk.com/bigfive/index_m.asp

³⁰We include the summary of the test result in which the test result shows an above-average performance on all the five traits. We opt for this particular test result because, naturally, applicants are unlikely to include any negative information in their resumes.

³¹Shixiseng.com provides a pool of tags used to describe common interests. It includes six keywords: reading, writing, singing, swimming, cycling, and badminton. We randomly selected two keywords as common interests for inclusion in the self-assessment section.

aged 21 years to ensure they would have sufficient time to meet this requirement.³²

We submitted CVs to jobs posted on shixiseng.com from February to April. We applied four criteria for choosing the job posts. First, the job location was in Beijing. Second, the job post targeted undergraduates. Third, we chose one job post when the firm posted many jobs. Fourth, the job post occupations were human resources, sales, and administrative assistance, which have been used in previous audit studies (e.g., Bertrand and Mullainathan 2004).

Overall, we sent out 2,296 fictitious CVs to 574 job posts. For each post, in random order, we submitted four CVs every other day over eight consecutive days. These four CVs represented four applicants who differed in party membership and noncognitive abilities signal but otherwise had comparable characteristics. We also collected information on each job post, such as the name, ownership, industry, and size of the firm posting the job, and the occupation being advertised.

Following the literature (He, Li, and Han, 2023; He, Neumark, and Weng, 2021), we define a successful job application as the receipt of a favorable response from prospective employers through telephone, text message, email, or application chat, within a period of two weeks following submission.³³ Our research assistants responded to the callbacks and informed the employers that the (fictitious) applicants were no longer available. The overall callback rate for our experiment was 18.42%.

5.2 Regression Specification

To test Hypotheses 3 and 4, we estimate the following equation:

$$Callback_{ij} = \theta_0 + \theta_1 P_i + \theta_2 S_i + \theta_3 (P_i * S_i) + \theta_4 X_{ij} + \lambda_j + \mu_{ij}, \quad (3)$$

where $Callback_{ij}$ indicates (fictitious) applicant i receives a callback from job post j . P_i and S_i indicate that the CV states the applicant is a party member and includes the information on noncognitive abilities, respectively. The vector, X_{ij} , includes applicant characteristics, such as gender, college, major, etc. λ_j is the job post FE. μ_{ij} is the error term. Standard errors are

³²For most colleges in China, students cover the curriculum in the first two and a half years, allowing them to accept an internship in their senior years.

³³More than 95% of all callbacks were received within two weeks in our pilot study.

clustered at firm level.

Hypothesis 3 predicts that $\theta_1 > 0$. As party membership status is randomized across the four types of CVs, θ_1 measures the causal impact of party membership on the callback.

Hypothesis 4 predicts that $\theta_3 < 0$. That is, the advantage of being a party member decreases when potential employers receive information on the applicant’s noncognitive abilities: $E(\text{Callback}_{ij}|P = 1, S = 1) - E(\text{Callback}_{ij}|P = 0, S = 1) < E(\text{Callback}_{ij}|P = 1, S = 0) - E(\text{Callback}_{ij}|P = 0, S = 0)$.

5.3 Estimation Results

Table 6 reports the estimates of Equation (3). Column (1) shows that being a party member increases the probability of receiving a callback by 6.4 percentage points for applications without information on the BFPT test result. This is consistent with Hypothesis 3. Noticeably, the estimated coefficient on the interaction term is negative and statistically significant. The size of this estimate suggests that more than half of the party membership effect on the callback can be attributed to the signaling role for noncognitive abilities. This result is consistent with Hypothesis 4. The estimates experience little change when consecutively controlling for the applicant’s characteristics in Column (2) and application-round FE in Column (3).

Concerning the effect of the noncognitive abilities signal, Column (1) shows that for applicants without party membership, the BFPT test report increases the callback probability by 4 percentage points. The magnitude of this coefficient is comparable to that of the coefficient on the interaction term in terms of absolute values. This implies that party membership alone could sufficiently signal one’s noncognitive abilities.

We conduct a heterogeneous analysis by sector of the firm who posted the job. Columns (4) and (5) of Table 6 show that being a party member significantly increases the probability of callback in both the public and private sectors. Moreover, the impact of party membership is marginally larger in the public sector than in the private sector, which is consistent with the estimated results using the CCSS data. Concerning the interaction term, estimates for both the public and private

sectors are similar to the estimate for the full sample.³⁴ Combining the estimates of θ_1 and θ_3 , we suggest that the signaling role of party membership for noncognitive abilities is more salient in the private sector.

In sum, our experiment yields consistent evidence on the signaling role of party membership for noncognitive abilities in the labor market. Following Balfe et al. (2021), we address potential detection risks by restricting the estimation sample to the first applications for job postings. Table C4 in Appendix C shows that our results are robust.

6 Mechanisms

This section provides additional evidence on the signaling mechanism and examines alternative mechanisms that may explain our results.

6.1 More Supporting Evidence for the Signaling Mechanism

If students regard party membership as a credible signal in the labor market that they possess high noncognitive abilities, it stands to reason that students in majors that demand higher noncognitive abilities for employment would be more inclined to seek party membership.³⁵ For instance, students majoring in business are more likely to secure a managerial position requiring strong noncognitive abilities than engineering majors are. Consequently, business students have a greater incentive to obtain party membership before entering the labor market.

Using the CCSS graduate survey, Figure 2 plots the proportion of students who applied to join the party against the employment requirement for noncognitive abilities (r_i) by college major (i). We calculate r_i as follows,

$$r_i = \sum_{o=1}^N r_o * s_{io}, \quad (4)$$

where s_{io} is the share of graduates in major i who find a job in occupation o with $\sum_{o=1}^N s_{io} = 1$;

³⁴While the magnitude of the estimate is similar for the full sample and the public sector, the estimate for the public sector is statistically insignificant. This insignificance can be attributed to the small sample size of only 58 firms in the public sector.

³⁵In China, students select their college major at the time of submitting their college applications, which means they choose their major before enrolling in college.

and r_o is an indicator that occupation o requires high noncognitive abilities. We measure the requirement for noncognitive abilities across occupations based on the Occupational Information Network (O*NET).³⁶ Specifically, following Deming (2017), the noncognitive abilities requirement for a given occupation is measured by the average score of six items in the O*NET: coordination, negotiation, persuasion, service orientation, social perceptiveness, and time management.³⁷ $r_o = 1$ if the score places it in the top 30 occupations; otherwise, it equals 0.

Consistent with our prediction, students are more likely to apply for party membership when studying for majors that place higher employment demands on noncognitive abilities. We exercise caution in interpreting the result, as students from pursuing different majors may differ in unobserved ways.

6.2 Cultivation Effect

In the party recruitment process, both self-selection and party-selection effects are observed. However, it is important to note that this observation does not rule out the possibility that becoming a party member may increase a student’s abilities through regular attendance at party events and training. To investigate this possibility, we compare the effect of party membership on labor market performance across different membership tenures in the year of graduation. If party membership has a cultivation effect that enhances members’ abilities, then an individual’s job market performance is expected to improve as their tenure in the party increases.

The CCSS graduate survey records the history of the student’s application for party membership, including the year the student was officially recruited into the party, based on which we construct two dummy variables. One is an indicator of senior party membership, for students who have been party members for at least two years when they graduate (PS_i); the other is an indicator of junior party membership, for students who have been party members for less than two years

³⁶O*NET is a survey administered by the U.S. Department of Labor to a random sample of U.S. workers in each occupation. The survey asks many different questions about the abilities, skills, knowledge, and work activities required in a given occupation.

³⁷The study by Deming (2017) used only coordination, negotiation, persuasion, and social perceptiveness to measure social skills, but the current analysis covers more aspects of noncognitive abilities corresponding to the BFPT by adding service orientation, which corresponds to agreeableness, and time management, which corresponds to conscientiousness.

(PJ_i) .

We re-estimate Eq. (2) by replacing party membership P_i with PL_i and PS_i . Tables C5 and C6 in Appendix C show that the estimates of PL_i and PS_i are statistically significant and similar in magnitude. The result of the F -test indicates that the difference between the two estimates is statistically insignificant. That is, students' job market performance does not differ across their tenure in the party. These results suggest that party membership does not exhibit a cultivation effect on noncognitive abilities in the short term for college graduates.

We are further interested in understanding the long-term impact of party membership on noncognitive abilities. To investigate this impact, we analyze a unique twin dataset, the Chinese Adult Twins Survey (CATS), which includes monozygotic (MZ) twins with an average age of 38. In brief, our analysis shows that there is a positive and statistically significant correlation between party membership and noncognitive abilities when using OLS regression. This estimate could reflect either selection effects, cultivation effects, or both. To eliminate the selection effect, we perform a within-MZ-twin fixed-effect estimation. The estimate becomes small in size and statistically insignificant, suggesting that there is no evidence for a cultivation effect on noncognitive abilities in the long run.³⁸ Details are provided in Appendix E.

6.3 Political Capital

Given that the CCP is the dominant political power in China, party membership reflects an important political affiliation, or political capital. Our experimental analysis shows that approximately half of the party membership advantage can be explained by the signaling effect. This finding suggests that we cannot rule out the possibility that party membership also serves as a form of political capital in the labor market. From an employer's perspective, private firms may prefer to hire party members in order to establish connections with the CCP (Li et al., 2008). State-owned enterprises, which are fully controlled by the CCP, may be encouraged to hire more party members as well. From an employee's perspective, the motivation for joining the party may vary with the college student's career goals. For example, obtaining party membership is a necessary condition

³⁸In Appendix E, we present a new method that relaxes the strong assumption of the within-MZ-twin method in the literature, which assumes that identical twins share the same unobserved characteristics.

for students who aspire to pursue a political career in China.

Due to data limitations, we cannot exhaust all scenarios of the political capital theory. However, we can test one possibility with our survey data: Whether the superior job market performance of party members is a result of preferential treatment in their colleges during job searching. If so, students may prefer to join the party to gain this advantage. Using the CCSS graduate sample, we constructed a measure of political capital based on the survey question that asks whether the respondent has ever received any job information from their universities or professors/teachers. We re-estimated Eq. (2) conditional on this measure of political capital. Results are shown in Tables C7 and C8 in Appendix C, and estimates of party membership in all specifications remain almost unchanged. Meanwhile, the estimates of political capital are statistically insignificant and close to zero. These results suggest that party membership, as a form of political capital, does not confer an information advantage in the labor market.

Although we cannot completely reject the political capital theory, our empirical and experimental results suggest that party membership plays a role beyond just serving as political capital. If party membership only acted as political capital, we would not observe a signaling effect in the labor market, which is implied by Hypothesis 4.

7 Conclusion

In this paper, we have analyzed how political selection in China affects the labor market, and we offer a new explanation for why college students are still interested in joining the CCP during the country’s transition to a market economy. The CCP’s rigorous recruitment process allows it to recruit college students with high noncognitive abilities, which are valued but difficult for potential employers to identify in the labor market. As a result, party membership provides a reliable signal of these abilities. Using the CCSS dataset, we examine the CCP’s recruitment process and found both self-selection and party-selection effects. In the labor market, party members are 5.9 percentage points more likely to receive a job offer and to earn a starting wage 6.4% higher than non-party members. To identify the signaling effect of party membership, we conducted a field experiment in which we submitted fictitious CVs to potential employers. The findings

suggest that the value of party membership in the labor market diminishes significantly when employers are informed about the applicant's noncognitive abilities, especially in the private sector, where information on noncognitive abilities can account for more than half of party membership advantage.

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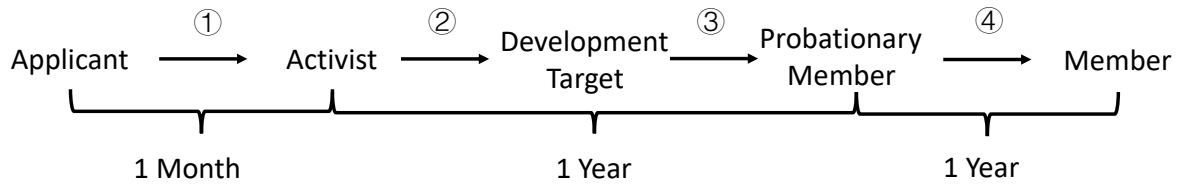
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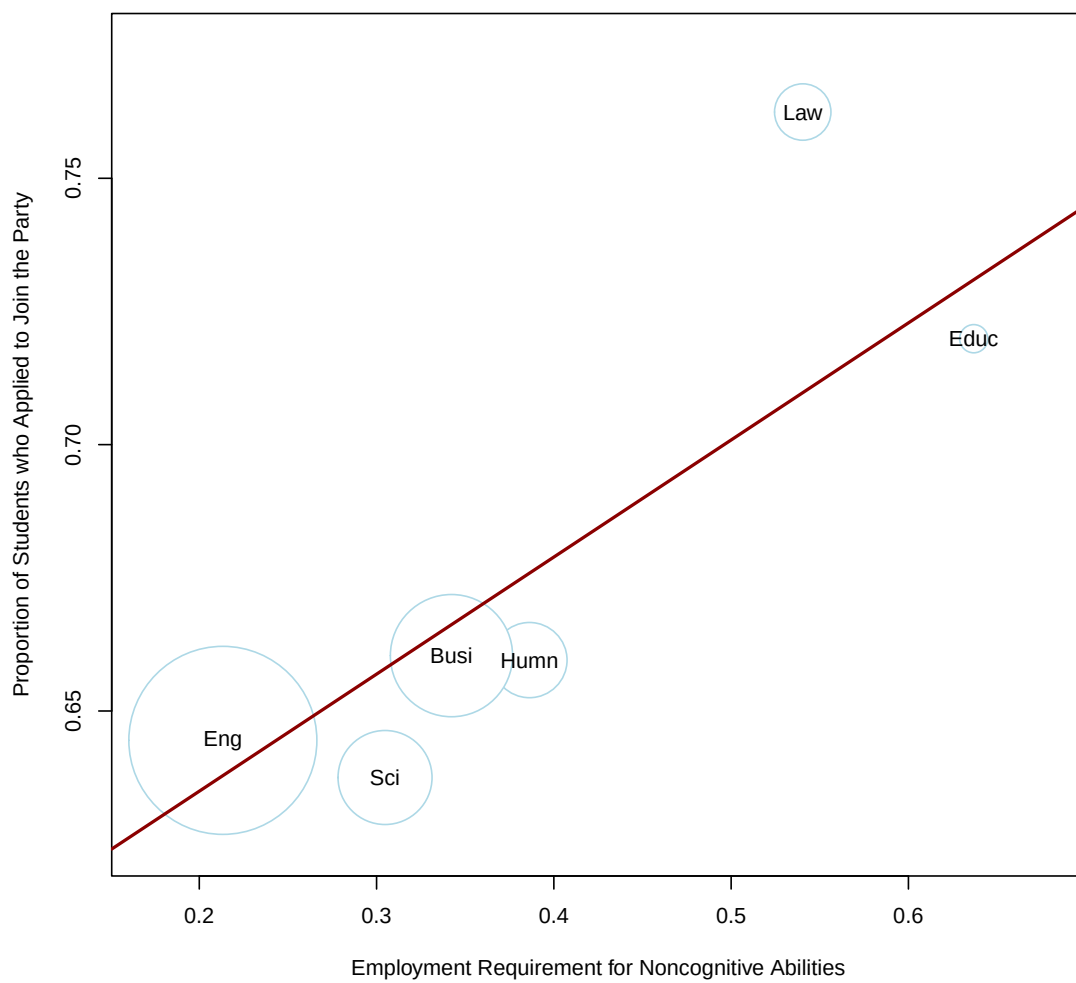
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Figure 1: Recruitment Procedure



Notes: This figure details the timeline for party recruitment.

Figure 2: Proportion of Students Who Applied to Join the Party and Employment Requirement for Noncognitive Abilities



Notes: Data sources: the CCSS graduate sample. This figure plots the proportion of students who applied to join the party against the employment requirement for noncognitive abilities by college major. Circles represent college majors. The area of the circle represents the sample size. The red line is the fitted line from a linear regression.

Table 1: Summary Statistics for the CCSS In-school and Graduate Samples

Variable	Mean	Std. Dev.	Obs.
	(1)	(2)	(3)
Panel A. In-school sample			
Party member	0.120	0.325	83,205
Party applicant	0.679	0.467	83,205
Male	0.538	0.498	83,205
Ethnicity (Han=1)	0.914	0.280	83,205
<i>Hukou</i> (rural=1)	0.508	0.500	83,205
Age	21.06	1.432	83,205
Maternal schooling years	10.126	4.055	83,205
Panel B. Graduate sample			
Party member	0.279	0.449	11,466
Party applicant	0.651	0.477	11,466
Receive at least one job offer	0.769	0.422	11,466
Monthly wage (RMB)	2,692.91	1,272.10	8,486
Ln(monthly wage)	7.777	0.612	8,486
Male	0.551	0.497	11,466
Ethnicity (Han=1)	0.915	0.279	11,466
<i>Hukou</i> (rural=1)	0.583	0.493	11,466
Age	22.966	1.074	11,466
Maternal schooling years	9.450	3.018	11,466

Notes: Data source: CCSS in-school and graduate samples.

Table 2: Summary Statistics for the Noncognitive and Cognitive Abilities in the CCSS

Variable	Party member		Non-party member		Difference
	Mean	SD	Mean	SD	
	(1)	(2)	(3)	(4)	
Panel A. In-school sample					
Extraversion	0.286	0.981	-0.038	0.996	0.325***
Agreeableness	0.112	1.012	-0.015	0.997	0.127***
Conscientiousness	0.441	0.990	-0.059	0.986	0.500***
Openness	0.321	1.121	-0.043	0.975	0.364***
Emotion Stability	0.156	0.961	-0.021	1.003	0.177***
Noncognitive abilities index	0.422	1.004	-0.057	0.986	0.479***
NCEE score	0.237	0.977	-0.032	0.998	0.268***
Panel B. Graduate sample					
Noncognitive abilities index	0.174	0.994	-0.078	1.014	0.252***
NCEE Score	0.174	0.903	-0.081	1.028	0.255***

Notes: Data sources: the CCSS in-school and graduate samples. CCSS in-school survey contains a comprehensive evaluation of students' attitudes and behaviors, which enables us to construct separate measures for the five traits of BFPT. Appendix B details the questions used for constructing measures of each trait, as well as the procedure for variable construction using factor analysis. We also create a single index for noncognitive abilities by summing the values of the five measures for the five traits. Due to the limited number of questions in the CCSS graduate survey pertaining to noncognitive abilities, we utilize factor analysis on the responses to three questions to construct one index of noncognitive abilities. "NECC Score" is the score for national college entrance exam, which is considered the most crucial examination in China. All the variables are standardized with mean 0 and standard deviation 1.

Table 3: The Self- and Party-selection Effects in the Party Recruitment by Noncognitive and Cognitive Abilities

	Party applicant	Party member		Party applicant
	(1)	(2)	(3)	(3)
Panel A				
Noncognitive abilities index	0.058*** (0.002)	0.035*** (0.002)	0.055*** (0.002)	0.055*** (0.002)
NCEE score	0.006*** (0.002)	0.014*** (0.002)	0.002 (0.003)	0.002 (0.003)
Panel B				
Extraversion	0.040*** (0.002)	0.030*** (0.002)	0.036*** (0.002)	0.036*** (0.002)
Agreeableness	0.020*** (0.002)	0.011*** (0.001)	0.019*** (0.002)	0.019*** (0.002)
Conscientiousness	0.061*** (0.002)	0.034*** (0.002)	0.058*** (0.002)	0.058*** (0.002)
Openness	0.024*** (0.002)	0.021*** (0.002)	0.021*** (0.002)	0.021*** (0.002)
Emotion stability	0.022*** (0.002)	0.013*** (0.001)	0.021*** (0.002)	0.021*** (0.002)
Mean of dep. var.	0.679	0.174	0.637	0.637
# Obs.	83,205	56,465	73,218	73,218

Notes: Data source: the CCSS in-school sample. The dependent variables are an indicator for party applicant in Columns (1) and (3) and an indicator for party member in Column (2). The estimation sample includes all students in Column (1), all applicants in Column (2), and non-party members (including non-applicants and applicants who failed in the recruitment process) in Column (3). In Panel A, estimates in each column come from the regression of the dependent variable on the index of noncognitive abilities and NCEE score, controlling for other variables. In Panel B, the estimate in each cell comes from the regression of the dependent variable on the measure for each trait of BFPT, controlling for NCEE score and other variables. We control for the individual's gender, ethnicity, age, high school type, *hukou* status, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, and home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 4: Effects of Party Membership on College Graduates' Job Offer

	OLS Regression			Multinomial Logistic Regression		
	0: no offer; 1: receive any offer			0: no offer; 1: public-sector offer; 2: private-sector offer		
	(1)	(2)	(3)	(4)	(5)	(6)
Party member	0.059*** (0.010)	0.058*** (0.010)	0.048*** (0.010)	Panel A: public-sector offer vs no offer 0.540*** (0.086)	0.534*** (0.087)	0.470*** (0.084)
NCEE score		0.032*** (0.007)	0.032*** (0.007)		0.211*** (0.053)	0.217*** (0.054)
Noncognitive abilities index			0.031*** (0.005)			0.221*** (0.031)
Party member				Panel B: private-sector offer vs no offer 0.295*** (0.081)	0.289*** (0.081)	0.241*** (0.079)
NCEE score					0.166*** (0.042)	0.171*** (0.042)
Noncognitive abilities index						0.169*** (0.034)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dep. var.	0.769	0.769	0.769	–	–	–
# Obs.	11,466	11,466	11,466	11,466	11,466	11,466
R-squared	0.101	0.104	0.109	0.103	0.105	0.107

Notes: Data source: the CCSS graduate sample. Columns (1)–(3) report OLS estimates of Eq. (2) using an indicator for receiving at least one offer as the dependent variable. Columns (4)–(6) report multinomial logistic estimates of Eq. (2). The dependent variable is categorical; it equals 0 if the graduate received no job offer, 1 if the best job offer is from the public sector, and 2 if the best job offer is from the private sector. Using the group who do not receive any offer as the baseline, Panels A and B report the estimates for the group whose best offer is from the public sector and the group whose best offer is from the private sector, respectively. We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, and home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 5: Effects of Party Membership on College Graduates' Starting Salary

	Whole Sample			Public Sector			Private Sector		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Party member	0.064*** (0.015)	0.063*** (0.015)	0.056*** (0.015)	0.037* (0.020)	0.037* (0.020)	0.033* (0.020)	0.078*** (0.015)	0.077*** (0.015)	0.067*** (0.015)
NCEE score		0.024** (0.011)	0.024** (0.010)		0.023 (0.015)	0.023 (0.015)		0.023 (0.015)	0.024 (0.015)
Noncognitive abilities index			0.026*** (0.008)			0.018 (0.012)			0.034*** (0.009)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dep. var.	7.777	7.777	7.777	7.779	7.779	7.779	7.776	7.776	7.776
# Obs.	8,486	8,486	8,486	3,584	3,584	3,584	4,786	4,786	4,786
R-squared	0.220	0.220	0.222	0.225	0.226	0.226	0.285	0.285	0.288

Notes: Data source: the CCSS graduate sample. This table reports the estimated results of Eq. (2), using the logarithm of the monthly wage of the best job offer as the dependent variable. The estimation sample includes all graduates who have received at least one offer in Columns (1)–(3), and graduates whose best offer is from the public (private) sector in Columns (4)–(6) (Columns (7)–(9)). We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 6: Regression Analysis Results on the Signaling Effect of Party Membership Based on the Experiment

	Whole Sample			Public Sector		Private Sector	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Party	0.064*** (0.014)	0.067*** (0.015)	0.067*** (0.014)	0.078* (0.045)	0.065*** (0.015)		
Noncog.	0.040*** (0.014)	0.037*** (0.014)	0.036*** (0.015)	0.051 (0.046)	0.034*** (0.016)		
Party $\times$ Noncog.	-0.037* (0.020)	-0.037* (0.020)	-0.037* (0.020)	-0.037 (0.067)	-0.037* (0.021)		
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes		
Applicants' Characteristics	No	Yes	Yes	Yes	Yes		
Round Fixed Effects	No	No	Yes	Yes	Yes		
Mean of dep. var.	0.184	0.184	0.184	0.138	0.189		
# Obs.	2,296	2,296	2,296	232	2,064		
R-Squared	0.700	0.700	0.703	0.620	0.711		

Notes: Data source: the audit experiment conducted in Beijing from February to April in 2022. This table reports the estimates of Eq.(3), using a dummy for whether a callback is received as the dependent variable. The estimation sample includes all the fictitious applicants in Columns (1)–(3), and fictitious applicants submitting CVs to firms in the public sector (private sector) in Columns (4) (Columns (5)). Standard errors are clustered at the firm level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Appendices

A Wage Premium of Party Membership

In this appendix, we present stylized facts regarding the wage premium for party membership. We provide novel estimates based on the three most recent nationally representative household survey datasets and conduct heterogeneous analyses across public and private sectors. The three nationally representative survey datasets are as follows: (1) the China Family Panel Studies (CFPS), conducted biennially from 2010 to 2020; (2) the Chinese General Social Survey (CGSS), conducted in 2010, 2012, 2013, 2015, 2017, and 2018; and (3) the Chinese Household Income Project (CHIP), conducted in 2013 and 2018. These surveys cover comprehensive demographic and socioeconomic information, such as party membership, employment, education, and income. Our sample comprises 49,941 observations of urban adults aged between 20 and 65 years who are currently employed in the labor market.³⁹ Summary statistics of the primary variables (see Table A1) reveal that around 17.6% of individuals in the sample are party members. On average, individuals in the sample are approximately 39 years old, have 12 years of schooling, and earn an average monthly wage of 3,841 yuan.

We conducted OLS regressions of the natural logarithm of monthly wage on party membership while controlling for individuals' age, age squared, gender, years of schooling, and prefecture and survey year fixed effects. Panel A of Table A2 demonstrates that party members receive a wage premium of 14.1% to 18.5% compared to non-party members across the three datasets. Comparing Panels B and C, we observe that the wage premium for party membership is 3.2% to 7.1% higher in the private sector than in the public sector across the three datasets.

In summary, our findings suggest that party membership yields a significant positive wage premium in the Chinese market economy, with the premium being more significant in the private sector than in the public sector. These results imply that political capital may not be the only factor behind the wage premium for party membership.

³⁹We exclude the majority of rural adults from our sample since their incomes primarily stem from agricultural activities.

Table A1: Summary Statistics for Samples from the Nationally Representative Surveys

Variable	Obs.	Mean	Std. Dev.
	(1)	(2)	(3)
Panel A. Pooled Sample			
Dependent Variable			
Monthly wage (RMB)	49,941	3,840.9	4,156.1
Ln (monthly wage)	49,941	7.915	0.886
Independent Variable			
Party member	49,941	0.176	0.381
Age	49,941	39.145	10.467
Male	49,941	0.558	0.505
Schooling years	49,941	11.966	3.585
Panel B. CFPS Sample			
Dependent Variable			
Monthly wage (RMB)	16,392	3,115.9	3,009.5
Ln (monthly wage)	16,392	7.685	0.960
Independent Variable			
Party member	16,392	0.155	0.362
Age	16,392	38.180	10.855
Male	16,392	0.558	0.523
Schooling years	16,392	11.512	3.810
Panel C. CGSS Sample			
Dependent Variable			
Monthly wage (RMB)	12,020	4,167.2	4,382.5
Ln (monthly wage)	13,799	7.970	0.857
Independent Variable			
Party member	12,020	0.169	0.374
Age	12,020	39.276	10.470
Male	12,020	0.551	0.497
Schooling years	12,020	12.570	3.559
Panel C. CHIP Sample			
Dependent Variable			
Monthly wage (RMB)	21,529	4,210.7	4,676.9
Ln (monthly wage)	21,529	8.059	0.804
Independent Variable			
Party member	21,529	0.197	0.398
Age	21,529	39.807	10.105
Male	21,529	0.562	0.496
Schooling years	21,529	11.975	3.367

Notes: Data sources: (1) the CFPS 2010, 2012, 2014, 2016, 2018, and 2020; (2) the CGSS 2010, 2012, 2013, 2015, 2017, and 2018; and (3) the CHIP 2013 and 2018. The differences of the average monthly wage among samples from CFPS, CGSS, and CHIP are due to the different proportions of people with agricultural *hukou* in the three samples.

Table A2: Party Membership Premium in Nationally Representative Surveys

	CFPS	CGSS	CHIP	Pooled
	(1)	(2)	(3)	(4)
Panel A. Whole Sample				
Party Member	0.185*** (0.020)	0.141*** (0.019)	0.154*** (0.013)	0.158*** (0.009)
Mean (Monthly wage)	3,115.9	4,167.2	4,210.7	3,840.9
Mean (Ln(monthly wage))	7.685	7.970	8.059	7.915
# Obs.	16,392	12,020	21,529	49,941
R-squared	0.262	0.458	0.309	0.355
Panel B. Public Sector				
Party Member	0.120*** (0.024)	0.128*** (0.023)	0.104*** (0.015)	0.112*** (0.011)
Mean (Monthly wage)	3,344.7	4,221.0	4,680.8	4,171.1
Mean (Ln(monthly wage))	7.803	8.040	8.175	8.031
# Obs.	6,263	5,546	9,611	21,420
R-squared	0.348	0.444	0.320	0.381
Panel C. Private Sector				
Party Member	0.191*** (0.038)	0.171*** (0.036)	0.136*** (0.027)	0.160*** (0.018)
Mean (Monthly wage)	2,974.4	4,121.1	3,831.6	3,592.9.1
Mean (Ln(monthly wage))	7.612	7.910	7.964	7.827
# Obs.	10,129	6,474	11,918	28,521
R-squared	0.233	0.472	0.319	0.338

Notes: Data sources: the CFPS, the CGSS, and the CHIP. The dependent variable is the logarithm of the monthly wages. The estimation sample includes all the individuals being employed in Panel A, and individuals being employed in the public sector (private sector) in Panel B (C). We control for the individual's age, age square, gender, ethnicity, schooling years, *hukou* type, as well as fixed effects for prefecture and survey year across all columns. Standard errors are clustered at the prefecture level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

B Constructing noncognitive ability Indexes

In this appendix, we provide details on the construction of noncognitive ability measures based on the BFPT. First, we selected a total of 28 questions from the first questionnaire of the CCSS, which comprehensively evaluates students' attitudes and behaviors. For each question, students responded to how frequently they had a given experience, or whether they agreed with a set of statements, using a scale of 1 for "never" (or "disagree") to 4 for "very often" (or "strongly agree").

Next, we categorized these questions into five domains (as shown in Table B1), with each domain explicitly related to the definition of one of the five traits in psychology (Digman, 1990).

Third, we conducted a preliminary factor analysis on students' responses for each set of questions. We used the Kaiser-Meyer-Olkin (KMO) measure to verify the sampling adequacy for all five question sets, and all KMO values were above 0.8. Additionally, Bartlett's test of sphericity showed a significant value for all the question sets, indicating that factor analysis was appropriate for our study. Both the minimum average partial correlation criterion proposed by Velicer (1976) and the eigenvalue rule suggested by Kaiser (1960) indicated that one component should be retained for each question set. For each of the five personality traits, we standardized its measure to have a mean of 0 and a standard deviation of 1.

Finally, we constructed a single measure for noncognitive abilities by summing the values of the five measures for the five traits and then standardizing this measure to have a mean of 0 and a standard deviation of 1.

Table B1: Questions of CCSS In-school Survey Used to Construct Noncognitive Abilities Indexes

Extraversion	Being proactive in asking questions or participating in discussions in class Collaborating with classmates to complete assignments given by the teacher during class Discussing viewpoints and problems with friends who are not in the same class after class Discussing your outlook on life and values with your course teacher Discussing your outlook on life and values with your supervisor
Agreeableness	I have never hated anyone. I have never felt annoyed when others express opinions that are completely different from mine. I am always polite, even to people difficult to get along with. I don't find it particularly difficult to deal with people who are obnoxious and talkative. I have hardly ever felt the need to reprimand others. I always readily put aside my own affairs to help those in need.
Conscientiousness	Being actively engaged in answering questions or thinking about questions that don't have a predetermined answer in class Preparing elaborately to present in class on a research topic Completing required readings or assignments before class Concentrating during class and actively listening to the teacher's lectures Being proactive in discussing course or reading-related questions with the course instructor after class The motivation to learn mainly comes from self-improvement. Having a clear development plan I always keep my word.
Openness	Attending lectures or presentations on topics of interest Conducting research with your teacher beyond course requirements Visiting exhibitions, watching plays, dance performances, etc. Challenging your existing beliefs about an issue Having in-depth communication with students with different <i>Hukou</i> types and ethnic backgrounds Having in-depth communication with students who have very different political views or outlook on life The motivation to learn mainly comes from the interest in exploring new things.
Emotional Stability	I always find a way to overcome difficulties. I know exactly the meaning of life for myself.

C Supplement Empirical Results

Table C1: The Self- and Party-selection Effects in the Party Recruitment by Noncognitive and Cognitive with Coefficients of Control Variables

	Party applicant (1)	Party member (2)	Party applicant (3)
Noncognitive abilities index	0.058*** (0.002)	0.035*** (0.002)	0.055*** (0.002)
NCEE score	0.006*** (0.002)	0.014*** (0.002)	0.002 (0.003)
Male	-0.112*** (0.003)	-0.018*** (0.003)	-0.118*** (0.004)
Ethnicity (Han=1)	0.020*** (0.006)	-0.002 (0.006)	0.023*** (0.007)
<i>Hukou</i> (rural=1)	0.008* (0.004)	-0.011*** (0.004)	0.012** (0.005)
Student cadre in high school	0.066*** (0.004)	0.032*** (0.004)	0.061*** (0.004)
Maternal schooling years	-0.021*** (0.004)	0.003 (0.004)	-0.025*** (0.005)
Grade 2	0.065*** (0.004)	0.042*** (0.004)	0.059*** (0.004)
Grade 3	0.079*** (0.004)	0.205*** (0.004)	0.039*** (0.004)
Grade 4	0.060*** (0.005)	0.402*** (0.005)	-0.049*** (0.007)
Magnet high school at province level	0.009 (0.008)	0.008 (0.007)	0.006 (0.009)
Magnet high school at prefectural level	0.000 (0.008)	-0.007 (0.008)	-0.001 (0.009)
Magnet high school at county level	0.006 (0.009)	-0.005 (0.008)	0.006 (0.010)
Ordinary high school	-0.007 (0.009)	-0.005 (0.009)	-0.008 (0.010)
Vocational high school	-0.031 (0.026)	-0.035 (0.025)	-0.028 (0.028)
Others	0.001 (0.058)	-0.042 (0.057)	0.007 (0.062)
Private middle school	-0.019*** (0.005)	-0.017*** (0.005)	-0.016*** (0.006)
Private high school	-0.016** (0.007)	-0.004 (0.007)	-0.015* (0.008)
# Obs.	83,205	56,465	73,218
R-squared	0.092	0.193	0.087

Notes: Data source: the CCSS in-school sample. This table reports the estimated results of Eq. (1), using the index of noncognitive abilities to measure *Noncogi*. The dependent variables are an indicator for party applicant in Columns (1) and (3) and an indicator for party member in Column (2). The estimation sample includes all students in Column (1), all applicants in Column (2), and non-party members (including non-applicants and applicants who failed in the recruitment process) in Column (3). We control for the individual's gender, ethnicity, age, high school type, *hukou* status, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, and home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C2: The Self- and Party-selection Effects in the Party Recruitment by Noncognitive and Cognitive Abilities, for the third- and fourth-year Students

	Party applicant	Party member	Party applicant
	(1)	(2)	(3)
Panel A			
Noncognitive abilities index	0.052*** (0.002)	0.057*** (0.003)	0.044*** (0.003)
NCEE score	0.005 (0.004)	0.028*** (0.004)	-0.003 (0.004)
Panel B			
Extraversion	0.040*** (0.002)	0.053*** (0.003)	0.030*** (0.003)
Agreeableness	0.015*** (0.002)	0.015*** (0.003)	0.014*** (0.003)
Conscientiousness	0.055*** (0.002)	0.057*** (0.003)	0.048*** (0.003)
Openness	0.021*** (0.002)	0.029*** (0.003)	0.016*** (0.003)
Emotion stability	0.024*** (0.002)	0.027*** (0.003)	0.020*** (0.003)
Mean of dep. var.	0.716	0.323	0.633
# Obs.	33,001	23,614	25,261

Notes: Data source: the CCSS in-school sample. We restrict the in-school sample to the third- and fourth-year students. The dependent variables are an indicator for party applicant in Columns (1) and (3) and an indicator for party member in Column (2). The estimation sample includes all students in Column (1), all applicants in Column (2), and non-party members (including non-applicants and applicants who failed in the recruitment process) in Column (3). In Panel A, estimates in each column come from the regression of the dependent variable on the index of noncognitive abilities and NCEE score, controlling for other variables. In Panel B, the estimate in each cell comes from the regression of the dependent variable on the measure for each trait of BFPT, controlling for NCEE score and other variables. We control for the individual's gender, ethnicity, age, high school type, *hukou* status, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, and home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C3: Effects of Internship on College Graduates' Job Offer

	OLS Regression			Multinomial Logistic Regression		
	0: no offer; 1: receive any offer			0: no offer; 1: public-sector offer; 2: private-sector offer		
	(1)	(2)	(3)	(4)	(5)	(6)
Internship	0.083*** (0.010)	0.083*** (0.010)	0.080*** (0.010)	0.389*** (0.088)	0.391*** (0.088)	0.371*** (0.088)
NCEE score		0.032*** (0.007)	0.033*** (0.007)		0.213*** (0.053)	0.219*** (0.053)
Noncognitive abilities index			0.029*** (0.005)			0.213*** (0.031)
Internship				Panel A: private-sector offer vs. no offer		
NCEE score				0.590*** (0.060)	0.592*** (0.060)	0.578*** (0.059)
Noncognitive abilities index					0.170*** (0.041)	0.174*** (0.041)
Controls	Yes	Yes	Yes	Panel B: private-sector offer vs. no offer		
Mean of dep. var.	0.769	0.769	0.769	0.590*** (0.060)	0.592*** (0.060)	0.578*** (0.059)
# Obs.	11,466	11,466	11,466			
R-squared	0.109	0.111	0.115	0.107	0.109	0.111

Notes: Data source: the CCSS graduate sample. This table reports the estimated results of Eq. (2), adding a dummy for internship in the regressions. Columns (1)–(3) report OLS estimates of Eq. (2) using an indicator for receiving at least one offer as the dependent variable. Columns (4)–(6) report multinomial logistic estimates of Eq. (2). The dependent variable is categorical; it equals 0 if the graduate received no job offer, 1 if the best job offer is from the public sector, and 2 if the best job offer is from the private sector. Using the group who do not receive any offer as the baseline, Panels A and B report the estimates for the group whose best offer is from the public sector and the group whose best offer is from the private sector, respectively. We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C4: Robustness Analysis to the Possibility that Employers Detect Our Experiment

	(1)	(2)
Party	0.107** (0.048)	0.121** (0.050)
Noncog.	0.079* (0.048)	0.085* (0.049)
Party $\times$ Noncog.	-0.081 (0.067)	-0.089 (0.068)
Applicants' Characteristics	Yes	Yes
Firms' Characteristics	No	Yes
Mean of dep. var.	0.209	0.209
# Obs.	574	574
R-Squared	0.011	0.060

Notes: Data source: the audit experiment conducted in Beijing from February to April 2022. This table reports the estimates of Eq.(3), using a dummy for whether a callback is received as the dependent variable. The estimation sample includes the first-round fictitious applicants in Columns (1) and (2). Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C5: Effects of Party Membership Tenure on College Graduates' Job Offer

	OLS Regression			Multinomial Logistic Regression		
	0: no offer; 1: receive any offer			0: no offer; 1: public-sector offer; 2: private-sector offer		
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term party member	0.065*** (0.013)	0.065*** (0.013)	0.056*** (0.013)	Panel A: public-sector offer vs no offer 0.562*** (0.118)	0.558*** (0.119)	0.499*** (0.119)
Short-term party member	0.062*** (0.011)	0.061*** (0.011)	0.050*** (0.011)	0.560*** (0.090)	0.554*** (0.090)	0.485*** (0.087)
NCEE score		0.032*** (0.007)	0.033*** (0.007)		0.212*** (0.053)	0.218*** (0.054)
Noncognitive abilities index			0.031*** (0.005)		0.220*** (0.031)	0.220*** (0.031)
Long-term party member				Panel B: private-sector offer vs no offer 0.369*** (0.110)	0.365*** (0.110)	0.320*** (0.110)
Short-term party member				0.290*** (0.088)	0.285*** (0.088)	0.233*** (0.086)
NCEE score					0.166*** (0.042)	0.171*** (0.042)
Noncognitive abilities index					0.168*** (0.034)	0.168*** (0.034)
<i>F</i> -test for <i>PL</i> and <i>PS</i>	0.817	0.774	0.662	0.988 (0.479)	0.971 (0.470)	0.902 (0.432)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# Obs.	11,466	11,466	11,466	11,466	11,466	11,466

Notes: Data source: the CCSS graduate sample. This table reports the estimated results of Eq. (2), using “Long-term party member” and “Short-term party member” to denote party membership. Columns (1)–(3) report OLS estimates of Eq. (2) using an indicator for receiving at least one offer as the dependent variable. Columns (4)–(6) report multinomial logistic estimates of Eq. (2). The dependent variable is categorical; it equals 0 if the graduate received no job offer, 1 if the best job offer is from the public sector, and 2 if the best job offer is from the private sector. Using the group who do not receive any offer as the baseline, Panels A and B report the estimates for the group whose best offer is from the public sector and the group whose best offer is from the private sector, respectively. We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C6: Effects of Party Membership Tenure on College Graduates' Starting Salary

	Whole Sample			Public Sector			Private Sector		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Long-term party member	0.062*** (0.017)	0.062*** (0.017)	0.055*** (0.017)	0.033 (0.031)	0.033 (0.031)	0.029 (0.031)	0.081*** (0.018)	0.080*** (0.018)	0.072*** (0.018)
Short-term party member	0.061*** (0.019)	0.060*** (0.019)	0.052*** (0.019)	0.033 (0.032)	0.032 (0.032)	0.027 (0.032)	0.074*** (0.021)	0.073*** (0.021)	0.062*** (0.021)
NCEE Score		0.024** (0.011)	0.024** (0.010)		0.023 (0.015)	0.023 (0.015)		0.024 (0.015)	0.024 (0.015)
Noncognitive abilities index			0.027*** (0.009)			0.019 (0.012)		0.034*** (0.009)	
<i>F</i> -test for <i>PL</i> and <i>PS</i>	0.962	0.947	0.859	0.997	0.982	0.955	0.773	0.771	0.670
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs.	8,486	8,486	8,486	3,584	3,584	3,584	4,786	4,786	4,786

Notes: Data source: the CCSS graduate sample. This table reports the estimated results of Eq. (2), using “Long-term party member” and “Short-term party member” to denote party membership. The dependent variable is the logarithm of the monthly wage of the best job offer. The estimation sample includes all graduates who have received at least one offer in Columns (1)–(3), and graduates whose best offer is from the public (private) sector in Columns (4)–(6) (Columns (7)–(9)). We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C7: Effects of Party Membership on College Graduates' Job Offer Conditional on the Measure of Political Capital

	OLS Regression			Multinomial Logistic Regression		
	0: no offer; 1: receive any offer			0: no offer; 1: public-sector offer; 2: private-sector offer		
	(1)	(2)	(3)	(4)	(5)	(6)
Party member	0.059*** (0.010)	0.059*** (0.010)	0.049*** (0.010)	0.545*** (0.087)	0.539*** (0.088)	0.476*** (0.085)
Receiving job info. from colleges	-0.002 (0.006)	-0.002 (0.006)	-0.002 (0.006)	-0.025 (0.038)	-0.026 (0.038)	-0.030 (0.038)
NCEE score		0.032*** (0.007)	0.032*** (0.007)		0.214*** (0.054)	0.220*** (0.054)
Noncognitive abilities index			0.031*** (0.005)			0.219*** (0.031)
Party member				Panel B: private-sector offer vs no offer		
Receiving job info. from colleges				0.295*** (0.081)	0.290*** (0.082)	0.242*** (0.080)
NCEE score				-0.003 (0.035)	-0.005 (0.035)	-0.008 (0.035)
Noncognitive abilities index					0.164*** (0.043)	0.169*** (0.043)
Controls						0.168*** (0.034)
# Obs.	Yes 11,421	Yes 11,421	Yes 11,421	Yes 11,421	Yes 11,421	Yes 11,421

Notes: Data source: the CCSS graduate sample. This table reports the estimated results of Eq. (2), adding the measure of political capital based on whether the respondent has ever received any job information from their universities or professors/teachers. Columns (1)–(3) report OLS estimates of Eq. (2) using an indicator for receiving at least one offer as the dependent variable. Columns (4)–(6) report multinomial logistic estimates of Eq. (2). The dependent variable is categorical; it equals 0 if the graduate received no job offer, 1 if the best job offer is from the public sector, and 2 if the best job offer is from the private sector. Using the group who do not receive any offer as the baseline, Panels A and B report the estimates for the group whose best offer is from the private sector and the group whose best offer is from the public sector, respectively. We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table C8: Effects of Party Membership on College Graduates' Starting Salary Conditional on the Measure of Political Capital

	Whole Sample			Public Sector			Private Sector		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Party member	0.063*** (0.015)	0.063*** (0.015)	0.055*** (0.015)	0.037 (0.026)	0.037 (0.026)	0.032 (0.026)	0.078*** (0.015)	0.078*** (0.015)	0.068*** (0.015)
Receiving job info. from colleges	0.002 (0.006)	0.002 (0.006)	0.002 (0.006)	0.006 (0.010)	0.006 (0.010)	0.006 (0.010)	-0.011 (0.008)	-0.011 (0.008)	-0.011 (0.008)
NCEE score		0.024** (0.011)	0.025** (0.010)		0.022 (0.016)	0.023 (0.016)	0.023 (0.015)	0.023 (0.015)	0.024 (0.015)
Noncognitive abilities index			0.027*** (0.008)			0.018 (0.012)			0.034*** (0.009)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs.	8,469	8,469	8,469	3,574	3,574	3,574	4,781	4,781	4,781

Notes: Data source: the CCSS graduate sample. This table reports the estimated results of Eq. (2), adding the measure of political capital based on whether the respondent has ever received any job information from their universities or professors/teachers. The dependent variable is the logarithm of the monthly wage of the best job offer. The estimation sample includes all graduates who have received at least one offer in Columns (1)–(3), and graduates whose best offer is from the public (private) sector in Columns (4)–(6) (Columns (7)–(9)). We control for the individual's age, gender, ethnicity, *hukou* status, high school type, subject in high school, maternal schooling years, paternal occupation, as well as fixed effects for survey year, college, home province across all columns. Standard errors are clustered at the college level. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

D Details of the Experimental Design

In this appendix, we provide details of our experimental design. On shixisheng.com, applicants are required to complete a standard CV template that collects basic information such as name, gender, age, and educational background. Optional information includes student organization experience, honors and awards, skills and languages, and a self-assessment (see Figure D1 for the English translation of the CV template, and Figure D2-D4 for the actual template on shixisheng.com).

We randomized the party membership status in the *Student Associations and Organizations* section. In this section, applicants are allowed to enter information about their membership in multiple organizations. Only CVs of types $(P = 1, S = 1)$ or $(P = 1, S = 0)$ state that the applicant is a party member.

We also randomized the signal of noncognitive abilities in the *Self-assessment* section. First, we asked our research assistants to take a formal and widely used personality test, the NEO Personality Inventory Revised (NEO-PI-R) (Costa Jr and McCrae 1992), which is designed based on the Big Five personality traits. Then, in this self-assessment section, we attached a summary of a standard BFPT test result to CVs of types $(P = 0, S = 1)$ or $(P = 1, S = 1)$. One example of this summary is listed below:

“I took a professional Big-Five Personality Test. The test results indicated that I have high levels of extraversion. I am enthusiastic and confident, and have strong communication skills with a positive personality. I also have high levels of conscientiousness and can plan well. The test results further show that I am self-disciplined, rigorous, meticulous, and have a strong sense of responsibility and ambition. I received a high agreeableness score, indicating that I am friendly, empathetic, and can quickly integrate into a team. My score is also above average in terms of openness. I am open-minded, welcome new ideas, and strive to improve my abilities. In the area of neuroticism, I received a low score, which indicates that I rarely become emotional and have strong emotional regulation and the ability to cope with external pressure effectively.”

For other information, we used three local mid-ranked public universities as the graduating colleges and randomly assigned them across the four types of CVs. In addition, we selected the

GPA level as “above average” for all types of CVs. All applicants in all CVs were described as third-year college students who were 21 years old. Besides party membership and the noncognitive abilities signal, we designed some banks of other items borrowed from real CVs. We randomly drew information from these banks across the four types of CVs. These banks are listed as follows:

Student Associations and Organizations:

- Member, Organization Department of Student Union
- Member, Communication Department of Student Union
- Member, Career Development Association
- Class Commissary in charge of Organization

Honors and Awards:

- Excellent volunteer in community service
- First Class Award, Dormitory Design
- Excellent Award, Youth League
- Award for Outstanding Voluntary Service

Skills and Languages:

- Advanced skills in MS Excel, passed CET-6 English test
- Advanced skills in MS Word
- Advanced skills in MS PowerPoint

Self-assessment:

- My interests and hobbies are extensive; I especially like reading and cycling
- My interests and hobbies are extensive; I like writing and badminton
- My interests and hobbies are extensive; I like writing and reading

- My interests and hobbies are extensive, I like swimming and writing

We submitted CVs to jobs posted on shixiseng.com from February to April 2022. Overall, we sent out 2,296 fictitious CVs to 574 job posts. For each post, in random order, we submitted four CVs every other day over eight consecutive days. These four CVs represented four applicants who differed in party membership and noncognitive abilities signal but otherwise had comparable characteristics.

Figure D1: shixiseng.com CV Template

Name		
Age:	Tel:	Email
<u>Education:</u>		
<u>Occupation Preference:</u>		
<u>Student Associations and Organizations:</u>		
<u>Internship Experience:</u>		
<u>Academic Experience:</u>		
<u>Honors and Awards:</u>		
<u>Skills and Languages:</u>		
<u>Projects:</u>		
<u>Hobbys and Interests:</u>		
<u>Self-assessment:</u>		

Figure D2: shixiseng.com Resume Template(1)

完成率: 86%,可投递简历要求为“中文”的职位

生成附件简历

下载



于宛晴

21 | 全国 | +86 15801317290 | yuwanqing_wq@163.com

教育经历

添加

北京科技大学

2019/09-2023/07

工商管理 | 本科

成绩排名: 中等

求职偏好

行政,人力资源

期望行业: 不限 | 期望城市: 北京

求职性质: 实习和校招 | 3-6个月 | 5天/周 | 2周内到岗

社团和组织经历

添加

院团委

2019/11-2022/04

外联部干事

负责学院活动的赞助拉取,制作活动赞助方案,并上门拜访企业,建立良好的合作关系。根据活动类型,策划与商户高匹配度的广告植入。联系往届外联部的师兄师姐,建立长期联络,组织交流会向他们学习相关经验。

Figure D3: shixiseng.com Resume Template(2)

社团和组织经历

添加

院团委

2019/11-2022/04

外联部干事

负责学院活动的赞助拉取，制作活动赞助方案，并上门拜访企业，建立良好的合作关系。根据活动类型，策划与商户高匹配度的广告植入。联系往届外联部的师兄师姐，建立长期联络，组织交流会向他们学习相关经验。

院党支部

2021/05-2022/04

删除

编辑

党员

实习经历

添加

学术经历

添加

获奖经历

添加

优秀共青团员

2020/09

技能/语言

添加

英语

CET-6

MS Excel:

熟练

Figure D4: shixiseng.com Resume Template(3)

技能/语言

添加

MS Excel：熟练

MS Powerpoint：精通

删除

编辑

MS WORD：精通

作品展示

添加

兴趣/特长

写作

羽毛球

个人总结

专业的五型人格测试表明：

E Selection vs Cultivation in the Long Run: The Twin Experiment

This appendix examines the long-term impact of party membership on noncognitive abilities. We analyze a unique twin dataset, the Chinese Adult Twins Survey (CATS), and develop a new method that relaxes the strong assumption of the within-MZ-twin method in the literature, which assumes that identical twins share the same unobserved characteristics.

E.1 Data

The CATS was conducted by the National Bureau of Statistics in June and July 2002 in five cities in China: Chengdu, Chongqing, Haerbin, Hefei, and Wuhan. The dataset contains information on 2990 twins, of which 919 pairs are monozygotic (MZ) twins, and 576 pairs are dizygotic (DZ) twins. We restrict the estimation sample to MZ twins to remove the confounds of unobserved abilities. Table E1 shows the summary statistics for the sample. A total of 18.1% of the MZ twins are party members. These MZ twins are around 38 years old on average and have average schooling of 11.3 years.

CATS asks the respondent to report whether he/she is a party member, using which we can construct our key independent variable, party membership. For the measure of noncognitive abilities, we use the survey questions about emotional experiences in CATS to construct three variables to measure twins' noncognitive abilities: emotion perception, emotion stability, and emotion control. Specifically, the index of emotion perception is calculated from the survey question "Do you ever experience the following emotions (sad, fear, depression, and disgust)? Rating using a 1 (very often) to 4 (never) scale for each emotion." Using the method of factor analysis, we combine the information from the answers for the four emotions to calculate an index for emotion perception. Similarly, the indexes of emotion stability and emotion control are calculated from the following survey questions, respectively, "If you ever had the following emotions, can you successfully hide it and not let others notice your emotion (sad, fear, depression, and disgust), rating using a 1 (very often) to 4 (never) scale." and "If you experience the following emotions, can

you successfully control it at the proper level (sad, fear, depression, and disgust), rating using a 1 (very often) to 4 (never) scale.”

Table E1: Summary Statistics for the CATS Sample

Variable	Mean	Std. Dev	Obs.
Key Independent Variable			
Party member	0.181	0.385	1,582
Individual Characteristics			
Age	38.204	8.695	1,582
Male	0.555	0.497	1,582
Ethnicity (Han=1)	0.990	0.100	1,582
Schooling years	11.299	2.953	1,582

Notes: Data source: the CATS. This table covers the sample of MZ twins in the CATS.

E.2 Twin Method and Empirical Result

We start with modeling whether party membership has a cultivation effect on noncognitive abilities *at the survey time*:

$$y_{ij} = \pi_0 + \pi_1 P_{ij} + \pi_2 a_{ij} + \tau_{ij}, \quad (5)$$

where y_{ij} measures the noncognitive skills of twin i ($i = 1, 2$) in pair j at the survey time; P_{ij} is an indicator for party membership; a_{ij} is the unobserved noncognitive-ability endowments before party membership recruitment, including genetic endowments, family background, and other related factors, which by definition is positively correlated with the ability y_{ij} at the survey time, such that $\pi_2 > 0$. The standard deviation of a_{ij} is δ_a . Conditional on the unobserved a_{ij} , we assume that the error term τ_{ij} is *i.i.d.*, with a standard deviation of δ_τ . We are interested in the coefficient π_1 , which measures the cultivation effect of party membership on the noncognitive abilities at the survey time.⁴⁰

In Equation (5), party membership is not exogenous, and depends on the unobserved ability-related endowments a_{ij} . We model the selection of party membership as follows:

$$P_{ij} = \phi_0 + \phi_1 a_{ij} + v_{ij}, \quad (6)$$

⁴⁰Without loss of generality, covariates are excluded in Eq. (5) for simplicity.

where ϕ_1 measures the impact of noncognitive-ability endowments on party membership. The error term v_{ij} is again *i.i.d* conditional on a_{ij} , with a standard deviation of δ_v .

The empirical challenge concerns the unobservability of a_{ij} . The OLS estimate of π_1 in Eq. (5) is generally biased if the individual heterogeneity of a_{ij} is ignored, such that,

$$plim(\hat{\pi}_1^{OLS} - \pi_1) = \frac{Cov(P_{ij}, a_{ij})}{Var(P_{ij})} = \pi_2 \frac{\phi_1 \delta_a^2}{\phi_1^2 \delta_a^2 + \delta_v^2} \quad (7)$$

Our twin-based data enable us to perform better estimation. We take the within-MZ-twin difference of Eq. (5) as follows,

$$\Delta y_j = \pi_1 \Delta P_j + \pi_2 \Delta a_j + \Delta \tau_j, \quad (8)$$

where Δ is an operator of the within-MZ-twin difference. Because Δa_j is still unobserved, the within-MZ-twin FE estimate of π_1 may still be biased, such that,

$$plim(\hat{\pi}_1^{MZFE} - \pi_1) = \pi_2 \frac{Cov(\Delta P_j, \Delta a_j)}{Var(\Delta P_j)} = \pi_2 \frac{\phi_1 (1 - \rho) \delta_a^2}{\phi_1^2 (1 - \rho) \delta_a^2 + \delta_v^2}, \quad (9)$$

where ρ is the correlation coefficient of a between twins ($Cov(a_{1j}, a_{2j}) = \rho \delta_a^2$). The literature always assume that MZ twins share the same unobserved characteristics, that is, $\rho = 1$. If this is the case, we have $plim(\hat{\pi}_1^{MZFE}) = \pi_1$. We relax the assumption of the traditional twin method and only assume $0 < \rho < 1$, which is plausibly true.

We can then compare the biases of $\hat{\pi}_1^{OLS}$ and $\hat{\pi}_1^{MZFE}$. Since $0 < \rho < 1$ and $\pi_2 > 0$, we have $plim(\hat{\pi}_1^{OLS} - \pi_1) > plim(\hat{\pi}_1^{MZFE} - \pi_1)$ if $\phi_1 > 0$, or $plim(\hat{\pi}_1^{OLS} - \pi_1) < plim(\hat{\pi}_1^{MZFE} - \pi_1)$ if $\phi_1 < 0$. The FE estimate $\hat{\pi}_1^{MZFE}$ can tighten the upper bound of π_1 in terms of absolute value, and help identify the sign of ϕ_1 . Specifically, if the OLS and FE estimates are significantly positive and the magnitude of the former is larger, then a positive selection effect is present, and the cultivation effect may also exist bounded by the FE estimate. If we detect a significantly positive OLS estimate and an insignificant FE estimate, then a positive selection effect is present, but no evidence exists for the cultivation effect.

Panels A and B of Table E2 present the OLS estimates and within-MZ-twin FE estimates, respectively. The OLS estimation results suggest that being a party member is positively associated with all the three measures of noncognitive abilities. All estimates are statistically significant at least at the 10% level. However, the FE estimates are all insignificant and the magnitudes are close to zero. We may draw three conclusions by comparing the results of the OLS and within-twin FE estimation. First, individuals with better cognitive and noncognitive abilities are more likely to be chosen to join the party. This finding is consistent with our empirical results using the CCSS in-school-student sample that positive selection on ability exists for party membership recruitment. Second, no evidence exists for the cultivation effect on noncognitive abilities in the long run, which is also consistent with our previous analysis that party members' high value of noncognitive abilities is mainly due to the positive selection rather than cultivation.

Table E2: OLS and Within-MZ-Twin FE Estimates of the Effects of Being a Party Member on Noncognitive Abilities

	Emotional Perception		Emotional Stability		Emotional Control	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. OLS Regression						
Party member	0.088*	0.066	0.213***	0.217***	0.134**	0.120*
	(0.051)	(0.053)	(0.066)	(0.067)	(0.068)	(0.069)
Schooling years	No	Yes	No	Yes	No	Yes
Panel B. Within-MZ-twin Fixed Effects Regression						
Party member	0.049	0.023	0.071	0.076	0.025	0.039
	(0.063)	(0.063)	(0.082)	(0.083)	(0.094)	(0.094)
Schooling years	No	Yes	No	Yes	No	Yes
# Twin Paris		684		545		416

Notes: Data Source: the CATS. The dependent variables are an index for emotional perception in Columns (1) and (2), an index for emotional stability in Columns (3) and (4), and an index for emotional control in Columns (5) and (6). Panels A and B show the estimation results for the OLS estimation on Eq. (5) and the within-MZ-twin FE estimation on Eq. (8), respectively. In the OLS estimation, all regressions control for twins' age and city fixed effects. Robust standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.