

The Impact of Education Systems on Chinese Students' Social Preference for Fairness and Altruism

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Abstract

Education development in China has been a topic of discussion for both professionals and the general public for decades. While the academic aspects of the two existing education systems in the country have been widely compared, there has been a lack of research on the social aspects. This paper aims to fill this gap by investigating whether the different education systems in China impact high school students' social preferences for altruism and fairness. The study's data concluded that education systems significantly impact a student's altruistic preferences, with public school students tending to be more altruistic. Interestingly, education systems do not have any apparent impact on social preference for fairness. These results provide a novel perspective on how different education methods and environments affect an adolescent's social preferences, which is significant in both pedagogics and psychology. The results were derived from analyzing the answers of 212 respondents collected in the form of an online questionnaire.

Keywords

Education Systems; Social Preference; Altruism; Fairness.

1. Introduction

Different countries have different approaches to education among adolescents. In China, specifically, two defining systems exist with different aims for students' futures and different educational environments. In the traditional public education system, Gaokao is the only and ultimate evaluation of high school students and the passing ticket for higher education. On the other hand, international schools prepare students for a different route in which they pursue higher education beyond national borders. International school students do not need to worry about Gaokao, as they are evaluated differently.

China remains one of the countries with most students pursuing universities abroad (Haynie, 2014). With the growing prominence of international education, many previous studies have investigated the differences in academic capital between the two systems, yet very rarely have the social factors of these differences been brought to the surface. School, being an essential environment within the early stages of a person's life, significantly affects their personal growth along with their cognitive abilities, which will move on to play a role in the person they become in the future. From a professional perspective, the investigation of how different schooling systems shape people's social preferences can bring valuable insight to both pedagogics and behavioral economics.

From a more practical perspective, many middle-class Chinese parents are faced with the decision of whether to enroll their child in the public or international system. This decision is often based on factors such as educational capital, the quality of teachers, and the reputation of the school. However, this paper provides an additional frame of reference for parents to consider-the social factors of each system. By understanding how different schooling systems shape students' social preferences, parents can make more informed decisions about their

children's education, empowering them to choose the system that best aligns with their values and goals.

This study examines whether the two education systems in China impact high school students' preferences for altruism and fairness. Both social preferences are correlated to how the individual views themselves in the context of others, making them good representatives of a person's social attitudes.

I present evidence regarding these social preferences through the investigation of how respondents reacted in a series of models such as the Dictator's Game and the Ultimatum Game. These games are commonly used in behavioral economics to study social preferences and decision-making. The experiment was conducted in China during July 2024. The structure of the paper is as follows: Section 2 reviews literature related to the area of research and presents the research hypothesis; Section 3 introduces the methodology and research design; Sections 4 and 5 summarize the results as well as implications; Section 6 is a general conclusion as well as the limitations of this study.

2. Literature Review

2.1. Background Information

The literature review section provides a comprehensive overview of the existing research on the formation of altruism and fairness, as well as the differences in education systems in China. This section serves as the foundation for the current study, helping to situate the research within the broader academic discourse.

Philosopher John Rawls stated that "the fundamental idea in the concept of justice is fairness" (Rawls, 1958). "Inequality aversion and rejection of unfairness are considered essential for maintaining cooperation and reducing opportunities for free riders (Kogut, 2012)". Research conducted on fairness preference has suggested that people feel better when they distribute their resources equally, even when no strategic considerations exist (Lowenstein et al., 1989).

It is worth noting that there is currently very little literature currently on how fairness preference is formed. This may be due to the complexity and nuances of the concept "fairness" being multi-dimensional, making it harder to measure—"It should be recognized that fairness is not a monolithic notion; rather, in its present form, it is a collection of (mostly independent) properties, which are dependent on the choice of the granularity level and strength required[...] (Kwiatkowska, 1989)." Furthering this, there had been claims that fairness is an "unworkable notion", as "no finite experiment can be set up to prove it or disprove it." (Dijkstra, 1988). As such, the failure of finite models to detect and measure fairness may be why the question of how the social preference is formed remains to be mostly unanswered.

Altruism is "an ethical doctrine that holds that the moral value of an individual's actions depends solely on the impact of other individuals, regardless of the consequences of the individual itself." (Atabaeva, 2019). The term was derived from the Latin "alteri huic," meaning "to this other." Auguste Comte, the French founder of positivism, coined the term in the mid-19th century. The critical concept of altruism centers around the moral value of serving others rather than oneself.

Many theories explain the motives of altruism and how it is formed. Predominantly the psychological (social exchange) and the social (social norms). The former surrounds the theory that the essence of altruism is social exchange, in which I.V Mangutova stated that: "While the cognitive component of altruistic motivation is determined by the understanding of social and moral norms, the formation of moral consciousness, its motivational component is determined by the social interest and social orientation of the individual." (Atabaeva 2019)

Another study conducted in 1994 on the impact of physical education on kids' social preference concluded that cooperative social organization learning is more productive in social skills than competitive or individualistic situations in various contexts [including PE]. (Johnson, Bjorkland & Krotee, 1994; Kahila, 1993))

The social norm theory of altruism argues that the motives for altruism can be divided into "the norm of interdependence" and "the norm of social responsibility (Atabaeva, 2019). One of the explanations of altruistic behavior is that people subconsciously expect a return for their altruistic actions, such as the sentence "good people are rewarded," which is now commonly used in everyday life. The exception to this logic is when people who help people not interested in their personal lives, under a sense of social responsibility, which is the case where people help others because they feel a sense of duty and responsibility. Social responsibility, specifically, is high in countries with a strong community culture (Scotland I Stebins, 1983).

When it comes to the differences between schooling systems in China, studies have summarized that comparatively, international schools pay attention to critical thinking ability as they attach significance to the dominant position of students, encouraging them to think and act independently and to explore bravely (Wang 2020). International schools give students more space to act as they wish, as without the countdown of Gaokao, they have more freedom to explore other aspects besides studying textbook information.

In comparison, most public schools have stricter rules and less freedom among students. Since Gaokao is one test that decides the future, the regulations and methods used to administer students are much tighter and vastly different from those of international schools. Test scores and individual and class rankings are often announced publicly and seen as significant among both teachers and students.

2.2. Hypothesis

From 2.1, it can effectively be concluded from the two theories of altruism that an environment that encourages social exchange and one that emphasizes social responsibility and community culture would encourage the development of altruistic preferences. So, the question lies in which education system more closely matches this description.

It is worth noting here that there is a key difference between public and international schools when it comes to the development of social preferences: the existence of mandatory moral education classes in Chinese public schools.

The Chinese education system has a long history of manually shaping moral attitudes. Mingyuan Gu explained in 2014 how the essence of education in the Chinese context is "shaping the character." "The schooling process in the education system is tantamount to shaping a person's character, which constitutes a kind of planned, intentional 'mind programming' (through the system)." The specific morals taught in these classes are based on "developing a sense of belonging, cultivating the collectivist values and learning to obey the rules." (Mankowska 2019) As pupils age, there is also content devoted to patriotism, as moral education includes "developing great virtue," which translates to "[cultivation passion] to serve the motherland and the people." (Yue 2022).

Under this context and considering the differences in education systems stated in 2.1, it seems that public schools match the environment needed to develop altruistic preference more. With more systematic rules encouraging collaborative working, rankings as a class, as well as prominent moral education nourishing collectivist and patriotic values, public schools fit both the theory of social exchange and social norms (responsibility.) Thus, this paper hypothesizes that public school students' preference for fairness and altruism are higher compared to that of private school students.

3. Methodology

3.1. Dataset

Data was collected through an online survey over around two weeks. There was a total of 395 respondents, of which around 70% currently studied in a public school. Due to the 7:3 ratio of public-school students to international school students potentially bringing misleading results, I processed the data and ended up with 212 final available samples, 106 respondents from each education system. Out of these respondents, 95 were males, 111 were females, and six stated a nonbinary gender. The ratio of male to female to nonbinary was around the same for the samples of both education systems.

Participants were asked about their grades, ranging from seven to twelve, considering the sample aimed to analyze students currently attending secondary education. Notably, while the number of students from each grade was mostly around the same for seventh, eighth, eleventh, and twelfth grade, there is a significant clutter in ninth and tenth graders, with the number being 60 and 44, respectively.

Another variable that the participants were required to fill out was family income, indicating their general wealth level. It can be observed from this section that international school students had a slight wealth advantage over public school students, with 54 (52%) coming from families that earn more than 500 thousand RMB a year, compared to the 35 (33%) of public school students. Most [47 (44%)] public-school students documented their families to earn between 120 thousand to 500 thousand a year. This may be due to the fees of international schools being higher than that of public schools. The number of students from lower income levels was around the same for both control groups.

3.2. Method and Research Design

After collecting participants' basic information, the questionnaire presents two models that directly measure their altruistic and fairness preferences.

Respondents were asked to play a game in which they distributed 100 RMB between themselves and another student. Participants are informed that they are not to see the person during the distribution process; the person on the other side is randomized, and the identities will not be exchanged after the game ends. After they propose a distribution plan, it will be carried out immediately without any other conditions or negotiations. This model is known as the Dictator's Game, which measures a person's altruistic preference. Under the rational expectations model, rational persons are expected to distribute all 100 RMB to themselves to maximize profit. The dictator's game highlights the nuance of real-life scenarios, as people tend to distribute at least some amount to the other person. Subsequently, the higher they distribute to the other person, the higher their altruistic preference.

To further examine participants' preferences for altruism, they are asked to rank the satisfaction they gain from helping others on a list of 1-5, 5 being very satisfied and 1 being very dissatisfied.

The Ultimatum Game Model is used as a measure of fairness preference, being an extended version of the Dictators Game. On the basis of the last model, participants are told that now their distribution plan will be revealed to the other person, and the other person has the power to refuse the distribution. If they choose to refuse, neither side will receive the distributed money. These added boundaries set up the subsequent question: "If you are the other person (the one being distributed to) in this scenario, What is the minimum amount of money you would accept to accept the distribution?" Theoretically, if the deal is refused, no money will be received, so the higher the number the respondents fill in, the more it indicates that they pursue fairness.

Other miscellaneous questions that measure the characteristics of education systems and the students that come out of each system follow, such as “In your studies, which study and evaluation method suits you the most (between individual projects and group projects)?” “Does your school have more work/tests that evaluate personal or group performance?” and “Please rank the helpfulness level of your classmates and students on a 1-9 scale.” These questions aim to characterize the main differences between how public and international schools operate and how the students perceive each other.

This survey was conducted digitally due to the real-life limitations of collecting information from different schools offline. After the data was collected, linear regressions were applied to look for trends and correlations.

4. Results

4.1. Altruism Test Results

Table 1. Impact of Variables on Amount of Money Distributed to Other Person in the Dictator’s Game

VARIABLES	(1) altruism
currenteducationsystem	-7.758** (3.768)
lengthofpublic	-0.642 (0.500)
suitablestudymethod	5.426* (3.137)
helpingotherssatisfaction	1.913 (1.726)
helpfulness	0.331 (1.063)
gender	2.756 (2.744)
grade	0.595 (1.020)
familyincome	-0.655 (1.274)
Constant	23.29* (12.87)
Observations	212
R-squared	0.061

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression tests were conducted on the data from the Dictator’s Game. The variable “altruism” in Table 1 measures how much respondents distributed to the other person, subsequently showing their altruistic preference. Considering the possibility that the education system may not be the affecting factor alone, other factors are considered, such as the length of time respondents spent in public school, the study method they stated suited them most, the

satisfaction level they gained from helping others, how helpful they ranked their classmates to be, as well as their gender, grade, and family income. The data concludes that the current education system significantly impacts people's altruistic preferences.

In the data set analyzed, "0" was used to represent public schools, and "1" was used to represent international schools. The negative correlation coefficient between the education system and altruistic preference indicated that international school students were likely to distribute less money to other people than public school students. Thus, it can be concluded that public school students are relatively more altruistic.

Notably, suitable study method also had some degree of impact on altruistic preference. In the data set, "1" referred to respondents who preferred individual tests as a means of evaluation, while "2" referred to respondents who preferred group projects. The positive coefficient signifies that people who prefer group projects are more likely to be altruistic.

Table 2. Impact of Variables on Satisfaction Gained from Helping Others

VARIABLES	(1) helpingotherssatisfaction
currenteducationsystem	-0.457*** (0.149)
lengthofpublic	-0.004 (0.020)
suitablestudymethod	0.438*** (0.123)
helpfulness	-0.002 (0.043)
gender	-0.030 (0.111)
grade	0.073* (0.041)
familyincome	0.101* (0.051)
Constant	2.929*** (0.480)
Observations	212
R-squared	0.132

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

With other determinants kept the same, a regression test was run on the variable measuring how much satisfaction respondents claimed to gain from helping others as an alternative measure of altruistic preference [shown in Table 2]. As shown in the table, the impact that the education system has is incredibly significant, and the coefficient is also negative. This result matches the previous one, indicating that international school students gain less satisfaction from helping others, and it can be concluded that they are comparatively more egoistic.

Suitable study method still played a decently relevant role, indicating that people who preferred group evaluations tend to gain more satisfaction from helping others.

4.2. Fairness Test Results

Table 3. Impact of Variables on Refuse Condition in the Ultimatum's Game

VARIABLES	(1) refuse condition
currenteducationsystem	0.471 (3.370)
lengthofpublic	-0.404 (0.447)
suitablestudymethod	-0.136 (2.806)
helpingotherssatisfaction	-1.953 (1.544)
helpfulness	-1.730* (0.950)
gender	2.349 (2.455)
grade	-0.497 (0.912)
family income	-0.400 (1.139)
Constant	62.090*** (11.508)
Observations	212
R-squared	0.043

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3 presents the results of the regression test run on the variable "refuse condition," which measures the minimum amount of money respondents would accept in order to accept the distribution plan. The $P > |t|$ value of 0.471 shows that education system has no significant impact on this amount, indicating no strong correlation between education systems and preferences for fairness.

The determinant "helpfulness," which stores how helpful respondents ranked their classmates to be, seemed to have an impact on the refuse condition, though no noticeable. The more helpful their environment is, the smaller their refuse condition is. This does not seem to indicate fairness, but rather the opposite.

5. Discussion

The hypothesis regarding altruistic preference was supported, as public-school students were inclined to distribute more to others in the Dictator's Game and experience more satisfaction from helping others. This result demonstrates that the moral education classes required by the public-school curriculum play an important part in characterizing high school students' social preferences, specifically altruism. It highlights the social norm theory regarding the formation of altruism within humans to be successful as the conveyance of the idea of "social responsibility" to students seemed to indeed enhance their altruistic preferences.

International school students' being relatively less altruistic may be due to the environment nurturing their independence and self-care. In addition, the general income levels of international students are slightly higher than those of public-school students, giving them more freedom and wealth power to focus on themselves.

The apparent lack of a significant correlation between education systems and fairness preferences is currently a myth. It could be due to a general lack of understanding about the formation of fairness, as well as the complexities of the fairness concepts discussed in 2.1. It is encouraging that future research could delve deeper into the concept of fairness and its formation, providing a more comprehensive understanding.

6. Conclusion

The results showed a significant relevance between education systems and altruistic preference, where public high school students are comparatively more altruistic than international high school students. A person's preferred study method also significantly influences their preference for altruism. Regarding fairness preference, there is no apparent impact from education systems.

These results are limited due to the data collection method being an online survey. Differences between how people claim they act and how they actually act may exist. In addition, there are regional limits, as most of the 212 sampled answers came from the Beijing region.

Field studies and offline research could be conducted for more accurate and conclusive data. Further work can also be done by incorporating more participants from different regions. This paper is a preliminary investigation into this field; there is much potential to develop, such as investigating more social preferences that could potentially be impacted by educational differences or collecting data from people who have already entered the workforce and beyond to examine how these preferences have played out in their future.

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