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The association between charitable giving and happiness: Evidence from the Chinese General Social Survey

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Abstract
Using the 2012 Chinese General Social Survey data set and the ratio of charitable giving at the community level as the instrumental variable, we investigated the non-instantaneous impacts of charitable giving on the donor's subjective well-being (SWB). The results indicate that charitable giving is positively correlated with SWB in the ordinary least squares regressions, ordered probit and 2SLS regressions. The above results are robust after eliminating students from the sample, using the propensity score matching method, or converting SWB to a dummy variable. There is no evidence that fundraising in state-owned enterprises will have a detrimental effect on the SWB of donors.

Keywords Charitable giving · Subjective well-being · CGSS · China

1 Introduction

According to the 2017 China charity donation report,[1] the average donation from individuals in China in 2017 was 107.90 yuan (about 15 US dollars), and the total amount of donations from individuals was 34.917 billion yuan (about 5 billion US dollars). This total accounts for 23.28% of all donations and 0.04% of the total GDP for China that year. Corporations are the primary source of charitable donations in China. In comparison, the total amount of US personal donations in 2017 was 286.65 billion US dollars, with donations from individuals accounting for 70% of the total and 1.47% of the total GDP.[2] The 2018 world giving index report (WGI)[3] published by the Charity Aid Foundation showed that

[1] http://www.gov.cn/xinwen/2018-09/21/content_5324340.htm
[2] https://givingusa.org/tag/giving-usa-2018/
[3] https://www.cafonline.org/docs/default-source/about-us-publications/caf_wgi2018_report_webnopw_2379a_261018.pdf

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China overall ranked 142th among the 145 countries surveyed globally, and ranked 113th in terms of donating money.[4]

Why does China fall so far behind other countries in charitable giving? Some scholars have proposed explanations such as individuals' attitudes towards charitable giving in China, the imperfect operation of charities, and the poor credibility of some charities (Deng 2007). Though Chinese citizens showed great enthusiasm for donations after Wenchuan Earthquake and other disasters, but the level of daily donations is rather low. One conjecture is that charity activities to provide disaster relief were organized and mobilized by governments or under the guidance of the governments. Donations in disasters cannot represent the participations of individuals in daily charity activities (Luo and Li 2010).

Huge international differences in charitable giving are observed in literature (Andreoni 2006; Stojcic, Lu & Ren 2016). List (2011) proposed several explanations, such as differences in tax policies, unmeasured direct giving, national income distribution, and national attitudes on whether the government or charities are responsible for satisfying social needs. Differences between Chinese and Western cultures can also lead to differences in charitable giving. For example, charitable giving is the key part of philanthropy which means to promote the welfare of others by generous donation of money. The Confucian idea of "love"(philanthropy) is graded love or differentiated love and it is correct to love one's family members or relatives more than others (Dubs 1951). The graded love implied by Confucianism is different from the Christianity universal love. For instance, Yang (2009) point out that philanthropy culture in U.S originated from Christianity, which implies that all people are inherently sinful and can atone for sins through acts of charity, while in traditional Chinese culture, a kind governor or government is responsible for satisfying social needs, and non-government philanthropy reflects unkindness of governor. The differences in philanthropy and political culture between U.S. and China lead to the disparity in charitable giving (Yang 2009). Therefore, how Chinese view the charitable giving might be quite different from western people. However, most of the empirical studies were conducted in western countries, such as the United States, followed by the United Kingdom, the Netherlands, and Canada (Bekkers and Wiepking 2011).

Though Confucianism had become closely interwoven with Chinese culture for more than 2000 years and played an important role in shaping the traditional ethics of philanthropy in China, other sources of philosophy of philanthropy are unneglectable. One of the greatest Chinese philosophers, MoZi held different view on philanthropy who advocate universal love or equal love to all regardless of social standing. Along with Confucianism, Mohism, Daoism (sometimes called "Taoism ") and Buddhism also are important sources of philosophy of philanthropy in China. Hence, whether charitable giving can bring happiness to donors from Chinese culture is still an open question and needs more empirical evidences.

One important motivation for charitable giving is that it can make people feel good about themselves, (i.e., giving provides a "warm glow" effect) (Andreoni 1990). A few studies have found positive correlations between prosocial behavior and subjective well-being (SWB) (Aknin et al. 2012, 2013; Dunn et al. 2008; Helliwell 2014; Yang and Kou 2015). Thereupon, begs the question about is charitable giving able to bring happiness to Chinese individuals?

[4] The CAF World Giving Index 2018 examined three specific giving behaviors: donating money, volunteering time, and helping a stranger.

Using data sets from the CGSS, we attempt to answer the above question. Using the OLS, Ordered Probit, and 2SLS methods, we estimated the impacts of charitable giving on one's SWB. In order to alleviate the potential endogeneity problem in the OLS regressions, we calculated the ratio of giving at community level as the instrument for individual giving in 2SLS models.

Overall, our 2SLS results indicate that the positive effect of charitable giving on donors' SWB is statistically significant, providing the evidences that in China, there is also a significant positive correlation between donation and happiness. We also did some robustness checks to confirm that our results were robust.

Government employees and other individuals working for state-owned enterprises (SOEs) in China are more likely to encounter fundraising that has been organized or mobilized by employers or governments. In such cases, people donate for reasons other than helping others. Fundraising in the in-SOE sample might overshadow the intrinsic motivation for charitable giving and reduce the happiness generated from charitable giving. We, therefore, divide the sample into two subsamples, an in-SOE sample and an out-SOE sample, according to the type of enterprises for which an individual was employed or affiliated. The results of the subsamples indicate that giving also has positive impacts on happiness in both the in-SOE sample and the out-SOE sample and we found no evidence that fundraising in SOEs will have a detrimental effect on the SWB of donors.

The remainder of the paper is structured as follows. Section 2 contains the literature review. Section 3 describes the data and variables. Section 4 presents the regression models and results. Section 5 concludes the paper.

2 Literature review

There are three strands of literature on charitable giving. The first addresses motivations for charitable giving. The second explores the factors affecting charitable giving. The third investigates the impacts of charitable giving. The first strand in the literature reveals that both altruistic and self-interested motivations drive giving to others (Andreoni 1990; Becker 1974). Becker proposed a purely altruistic model that assumes an individual's utility depends not only on his or her own consumption or monetary gains, but also on the utility of others—and that donating maximizes their utility by giving to others. However, this model does not adequately explain the increasing participation in charitable giving (Andreoni 1989), or why government expenditure does not completely crowd out individual donations. In contrast, the crowd-out effect of government spending on individual donations is quite small, and can even lead to increased donations from individuals (Clotfelter 1985). Andreoni (1990) proposed an impure altruistic model, which assumes that giving can make people feel happy—that is, the "warm glow" effect of charitable giving. Improved feelings toward oneself after giving can encourage more people to donate.

How charitable giving affects happiness is an important question in theory which related to the motives underlying charitable giving. Donors may receive gifts by donating (Andreoni and Petrie 2004), and charitable giving can be motived by reputation establishment (Harbaugh 1998a, 1998b), social approval (Hollander 1990), social status (Glazer and Konrad 1996), inequality aversion (Fehr and Schmidt 1999), social pressure (DellaVigna et al. 2012; Andreoni et al. 2017) or warm glow (Andreoni 1989, 1990). In addition,

charitable giving can improve a donor's self-esteem and help the donor maintain a positive social image (Harbaugh et al. 2007; Smith and McSweeney 2007). Among all the motives,[5] giving for warm-glow effect, can bring the joy or satisfaction of giving directly to the donors through giving itself instead of experiencing joy through improved welfare of the recipients of donations.

Many factors can affect happiness: economic factors, such as income, unemployment, and inflation; social demographic factors, such as health, age, education, marital status, and religion; institutional factors, such as legal institutions or degree of democracy; and environmental factors, such as air quality and pollution. Researchers have found charitable giving to be an important factor influencing happiness (Dunn et al. 2008; Ren and Ye 2017). In Andreoni's model (1990), charitable giving can improve individuals' sense of well-being and happiness, which is supported by recent neurophysiological studies. Making a donation activates brain regions involved in reward, including the orbital frontal cortex and ventral striatum (Harbaugh et al. 2007; Moll et al. 2006; Park et al. 2017; Tankersley et al. 2007). However, only the transient effect of giving on SWB is implied in both warm-glow effect theory and neuro studies.

A few experimental studies have investigated the impact of prosocial behavior on SWB (Aknin et al. 2012, 2013; Dunn et al. 2008; Surana and Lomas 2014). Psychologists have found a significant positive correlation between prosocial behavior and happiness. For instance, after controlling for income levels, Dunn et al. (2008) found that individuals who spent more money on prosocial spending, including charitable giving, were happier than those who spent more money on themselves. Aknin et al. (2012) conducted the same experiment as Dunn, and participants who recalled the experience of prosocial expenditures had higher SWB. Aknin (2013) found in two other experiments that prosocial spending can enhance a person's well-being, although it does not help to build or strengthen social relationships. Surana and Lomas (2014) found that giving significantly enhanced donors' life satisfaction and self-esteem. However, these experimental designs could only estimate the very short-term impact of donating on SWB.

Most empirical studies focus on the impact of volunteering on SWB (Binder 2015; Binder and Freytag 2013; Borgonovi 2008; Magnani and Zhu 2018; Meier and Stutzer 2008; Musick and Wilson 2003; Thoits and Hewitt 2001; Tiefenbach and Kohlbacher 2015; Wu et al. 2005, 2012), with a few finding positive correlations between giving and SWB (Kaya et al. 2020; Helliwell et al. 2014; Sibley and Bulbulia 2015; Tiefenbach and Kohlbacher 2015). Kaya et al (2020) demonstrated that in the religious field, people who donate in pursuit of inner peace and comfort have higher level of life satisfaction. Helliwell et al. (2014) found that people in communities with greater social engagement are happier than those in otherwise equivalent communities. Sibley and Bulbulia (2015) found that religious people report greater life satisfaction because they also tend to give more to charities. However, using Japan's 2011 National Survey on Lifestyle Preferences, Tiefenbach and Kohlbacher (2015) found that donation behavior was positively correlated with a 0.15 points rise in happiness—but only at the 10% level of statistical significance. Among the above studies, only Ren and Ye (2017) focused on identifying the causal effect of donation

[5] Andreoni (2006), Andreoni and Payne(2013) and Zheng and Qian(2014) present detailed literature reviews on charitable giving. Bekkers and Wiepking (2011) reviewed studies from different disciplines and categorized all motives into eight mechanisms as the most important forces that drive charitable giving: (a) awareness of need; (b) solicitation; (c) costs and benefits; (d) altruism;(e) reputation; (f) psychological benefits; (g) values; (h) efficacy.

on SWB in China and attempt to address endogenous issues. They found that both donation for victims of the Wenchuan earthquake and for general purposes have a significantly positive effect on happiness.

SWB consists of affective (emotional) and cognitive components (Diener 1984). Affective well-being refers to the intensity and frequency of emotions experienced (e.g., more positive emotion and less negative emotion), and cognitive well-being refers to satisfaction in a specific area (e.g., marital satisfaction) or a comprehensive assessment of life (e.g., life satisfaction) (Luhmann et al. 2012). In most experimental studies (Aknin et al. 2012; Bjälkebring et al. 2016; Dunn et al. 2008; Surana and Lomas 2014), subjects were asked about their SWB shortly after they made a donation decision or after they recalled the experience of prosocial spending. Researchers can only draw conclusions on whether giving has a direct and immediate effect on affective well-being or emotional well-being.

Whether giving has a non-instantaneous effect on the SWB measured by a comprehensive assessment of life remains unclear. Some scholars have proposed that downward social comparisons and a rise in self-esteem may be the mechanism through which giving affects life satisfaction in the long run (Huang 2016; Surana and Lomas 2014). However, Huang (2016) asked subjects to recall the donation in the past month, just like the gallup world poll (Aknin et al. 2013). Surana and Lomas (2014) used a pretest–posttest design. In fact, the above studies estimated the effects of recent donations on transient happiness and did not control for many confounding socioeconomic variables.

According to the 2010 CFPS, 71.02% of households that have donated something donated only one or two times per year. In other words, for most Chinese people, giving is an occasional rather than a frequent gesture. The 2012 CGSS surveyed the giving behaviors of Chinese for 2011, conducting the survey from June to December 2012, which means that the donating experience of the respondents was at least half a year prior. The respondents were asked about their donation details after they answered the SWB questions. Hence, the 2012 CGSS is more fit for investigating the non-instantaneous effect of giving on SWB.

In conclusion, researches on charitable motivations and factors affecting charitable giving are emerging at an increasingly faster pace (Dolan et al. 2008; Zheng and Qian 2014). Experimental and empirical studies on charitable giving and SWB have focused primarily on individuals in developed countries or western countries.[6] To the best of our knowledge, this paper is one among the few to explore the impact of charitable giving on SWB in China using survey data. Moreover, we used individual donations rather than household donations and controlled for more confounding factors such as household income, depression, and inequality of local income distribution. As such, this paper reached some different conclusions from previous studies; that is, that occasionally occurring giving behavior can also improve the non-instantaneous assessment of life satisfaction of Chinese people and the effect is larger than that in Ren and Ye (2017).

3 Data

3.1 Data

The data set for this research came from the 2012 CGSS, the earliest national, representative, and continuous survey project run by an academic institution in mainland China since

[6] See Bekkers and Wiepking (2011) and Table 11 for details.

2003. The 2012 CGSS included a social welfare and charity module; however, only 5,819 individuals were surveyed with this module. Due to missing observations for some variables, the number of observations includes 4640 respondents in this study.

3.2 Variables

The dependent variable is SWB. The 2012 CGSS questionnaire includes a question to measure the SWB of an individual: "In general, how happy are you with your life?" There are five options for answering this question, ranging from 1 (very unhappy) to 5 (very happy). The question measures one's satisfaction with his/her own life in general. The key independent variables is "Giving." In the 2012 CGSS, the question of whether an individual donated was: "In 2011, did you donate to society in terms of cash, a gift in kind, or property ownership? Here, 'donate' means that you made a voluntary donation to an individual or charity without expecting any return from this donation." "Yes" answers were assigned a value of 1 and "no" was assigned a value of 0. In order to test the robustness of our results, using donations in the field of poverty alleviation and disaster relief only as a new measure of individual donations, we generated another variable "Giving2."[7]

In order to examine the impact of donation behavior on donors' SWB, it is necessary to control for other confounding factors that may affect individual SWB. According to the literature, individual characteristics affecting personal SWB mainly include: gender, age, age squared, nationality, educational attainment, household registration, the degree of urbanization in the area where he/she lives, Chinese Communist Party membership, religion, and marital status.

Studies have shown that there are differences in happiness between men and women (Hori and Kamo 2018; Mencarini and Sironi 2012; Zweig 2015). The variable "gender" was assigned a value of 1 if the individual was male and 0 if female. A non-linear relationship exists between age and well-being (Blanchflower and Osward 2004; Xing and Huang 2014), so age and age squared are controlled for in the regressions. Better-educated individuals are typically happier (Cuñado and Gracia 2012; Ilies et al. 2019; Nikolaev 2018). In the 2012 CGSS, education attainment includes thirteen categories: no education, old-style private school, elementary school, junior middle school, vocational high school, academic high school, technical secondary school, technical school, 3 year college (part-time), 3 year college (full-time), 4 year college (part-time), 4 year college (full-time), and postgraduate and above. We converted this measure of education attainment into a continuous variable "edu," according to the standard length of completing each education category. "Did not attain any education" was assigned a value of 0; "old-style private school" and "elementary schools" were assigned a value of 6; "junior middle school" was assigned a value of 9; "academic high school," "vocational high school," "technical secondary school," and "technical school" were all assigned a value of 12; "3 year college" was assigned a value of 15; "4 year college" was assigned a value of 16; and " postgraduate and above" was assigned a value of 19.

The public services system in China is divided into two parts, rural and urban, according to one's "household registration" status or "户口"(Hukou) in Chinese. Different "Hukou"

[7] There is a question in the CGSS 2012 that "In 2011, did you donate to the following specific charity sectors respectively? How much is the donation to each sector respectively in RMB? 1. Religious;2. Poverty Alleviation and Disaster Relief; 3. Health and Medical; 4. Education; 5. Environment and Animal Protection; 6. Culture and Art Protection; 7. Neighborhood and Community service;8. Comprehensive; 9. Others".

holders have access to different public services, such as public education or social securities, which might also affect their SWB (Tani 2017; Wen and Zheng 2019). "Hukou" was defined as 0 if an individual held an agricultural "household registration" or 1 if an individual held a non-agricultural "Hukou." A small number of observations were dropped due to a few non-ordinary household registration statuses: "household registration with bluestamp," military servants, unregistered individuals, and other unusual household registration statuses.

The degree of urbanization of the area in which one lives may affect SWB; the variable "urban" denotes the degree of urbanization, ranging from 1 (rural area) to 5 (downtown). Marriage has a significant positive impact on SWB (Grover and Helliwell 2019; Næss et al. 2015; Tao 2019); as such, we controlled for marriage in our study using the variable "married." Individuals with a spouse were assigned a value of 1 and others (including the unmarried, cohabiting, separated, divorced, divorced, and widowed) were assigned a value of 0. Religious belief played an important role in SWB (Aghababaei 2014; Ngamaba and Soni 2018; Sander 2017; Sillick and Cathcart 2013). We controlled for religious belief with the variable "religion," which was assigned a value of 1 if an individual held some kind of religious belief and 0 otherwise. Family size was found to have a significant impact on subjective well-being (Luo 2009; Magnani and Zhu 2018; Ren et al. 2018), and was also controlled for in our regressions.

Household or family income has some impact on people's SWB (Zheng et al. 2010). This study measured household income using the answer to "What is total income of your family for the whole year of 2011?" Some studies have shown that both absolute income and relative income matters in SWB. People tend to compare their income with their neighbors, and people's SWB will be affected in communities of different affluence (Firebaugh and Schroeder 2009; Hagerty 2000; Oshio et al. 2011). In order to control for the relative income effect, we ranked all households' income, categorized them into four quarters, and generated the variable "household income rank." The bottom quartile, the second quartile, the third quartile, and the top quartile were assigned integers from 1 to 4, respectively. We also included "car" and "house" as additional control variables (Cheng et al. 2016; Hu and Ye 2019; Li et al. 2015), which represent whether the respondents or her/his family have a car or a house (apartment), respectively.

Membership in the Communist Party of China (CPC) may have a positive effect on SWB (Appleton and Song 2008; Lu et al. 2016). Therefore, "party member" was controlled for; CPC members were assigned a value of 1, and 0 otherwise. An individual's working status and employer's type also affect SWB (Jin and Zhang 2011; Wang and VanderWeele 2011; Susanlı 2018). Therefore, we included two variables "working" and "SOEs." According to the answer to the question "What is your current work experience and status?", "working" was defined as 1 if an individual is working, and 0 otherwise. If an individual was employed by an SOE, then "SOEs" was assigned a value of 1, and 0 otherwise. Using self-evaluated social status in the 2012 CGSS survey,[8] we generated a binary variable "Social status", that equals to 1 if the rating is 6–10 and 0 otherwise.

Healthier people tend to be happier (Oswald and Powdthavee 2008; Kööts-Ausmees and Realo 2015; Steptoe et al. 2015). We generated a binary variable "Health", that was defined as 1 if self-reported health is very good or good, and 0 otherwise. Responses with

[8] The corresponding question is: ''In our society, some people are in the upper classes of society, while some people are in the lower classes of society. Which level do you think you are in?'' The question displays a scale of answer options range from 1 to 10 and a higher number indicates higher social status.

respect to happiness might be affected by individuals' recent mood (Schwarz and Clore 1983; Wang et al. 2018). Therefore, we generated a binary variable "Depression" that was assigned a value of 1 if respondents always or often felt depressed in the past four weeks, and 0 otherwise, which measures how often respondents felt depressed in the prior four weeks. Some important life events might also affect an individual's SWB. We controlled for "dropout" variable, which was assigned a value of 1 if one experienced school dropout in his/her life and 0 if not.

Income inequality in a region might also affect residents' happiness (Huang 2019; Knight et al. 2009; Wang et al. 2015). We calculated the "Gini coefficient" at the county level to control for income inequality. Perceived social fairness and social trust have important impacts on life satisfaction (Abbott et al. 2016; Di Martino and Prilleltensky 2020; Habibov and Afandi 2015; Mikucka et al. 2017; Sun and Xiao 2012). Using answers to the question "In general, do you think that today's society is unfair?", we constructed a binary variable "Social fairness" that was assigned a value of 1 if self-evaluated social fairness is complete fair or fair, and 0 otherwise. Using answers to the question "In general, do you agree with 'in this society, the vast majority of people can be trusted'?", we generated a binary variable "Social trust" that was assigned a value of 1 if the answer is strongly agree or partly agree, and 0 otherwise.

Gaining access to social and commercial insurance might have an impact on the SWB of individuals (Fang and Sakellariou 2016; Keng and Wu 2014; Yang and Zhang 2016). According to answers to the question "Are you enrolled in the following social insurance programs?", four dummy variables were generated: "social medical insurance," "social pension insurance," "commercial medical insurance," and "commercial pension insurance." If an individual was enrolled in any one of the above insurances, the respective dummy variable was assigned a value of 1, 0 if not.

In order to alleviate the potentialendogeneity problem, we generate an instrumental variable—"ratio of giving" that is the percentage of donors to all who live in the same community, and donations of respondents per se are excluded from the calculation of instruments.[9] Community in this paper refers to the neighborhoods under a same community residents committee or village residents committee. Ren and Ye (2017) have argued that "ratio of giving" at the community level is an instrumental variable that satisfies the two requirements for instruments, relevance and exogeneity. In line with their research, we used "ratio of giving" at the community level as the instrumental variable to the variable "giving".

3.3 Descriptive Statistics

Descriptive statistics are reported in Tables 1 and 4 (in the appendix). The frequency histogram of the age distribution is shown in Fig. 1.

As shown in Table 4, about 33.6% of the 4640 respondents donated something in 2011 (1560 out of 4640), which indicates that the participation rate of the Chinese in charitable giving is not low. On average, donors reported a higher level of SWB and a lower level of depression than those who did not donate. Donors were younger, better educated, more likely to have non-agricultural "Hukou," higher household income, a bigger family, and

[9] "ratio of giving" equals to the total number of donors in a community divided by the total number of respondents in a same community. If the respondent is a donor, the corresponding "ratio of giving" is the total number of donors minus 1 divided the total number of respondents in a community.

Table 1 Summary statistics (1)

Variable	Observations	Mean	SD	Min	Max
SWB	4640	3.850	0.841	1	5
Giving	4640	0.336	0.472	0	1
Giving2	4640	0.287	0.452	0	1
Ratio of giving	4640	0.327	0.233	0	1
Ratio of giving2	4640	0.279	0.220	0	1
Gender	4640	0.518	0.500	0	1
Age	4640	49.27	15.72	17	94
Agesq	4640	2674	1610	289	8836
Han	4640	0.911	0.285	0	1
Edu	4640	8.834	4.525	0	19
Hukou	4640	0.478	0.500	0	1
Urban	4640	2.995	1.788	1	5
Religion	4640	0.135	0.342	0	1
Married	4640	0.818	0.386	0	1
Family size	4640	3.037	1.394	1	14
Log (household income)	4640	10.30	1.079	4.615	13.91
Household income rank	4640	2.390	1.113	1	4
Car	4640	0.141	0.348	0	1
House	4640	0.523	0.500	0	1
Party member	4640	0.126	0.331	0	1
Work	4640	0.665	0.472	0	1
SOEs	4640	0.0511	0.220	0	1
Social status	4640	0.160	0.367	0	1
Health	4640	0.555	0.497	0	1
Depression	4640	0.102	0.303	0	1
Dropout	4640	0.136	0.343	0	1
Gini coefficient	4640	0.450	0.0739	0.181	0.633
Social fairness	4640	0.452	0.498	0	1
Social trust	4640	0.659	0.474	0	1
Social medical insurance	4640	0.907	0.290	0	1
Social pension insurance	4640	0.663	0.473	0	1
Commercial medical insurance	4640	0.0881	0.284	0	1
Commercial pension insurance	4640	0.0621	0.241	0	1

religious beliefs. Donors also had better self-reported health and higher self-evaluated social status. Donors lived in more urbanized areas and in communities with less income inequality, and were more likely to be party members and work for SOEs.

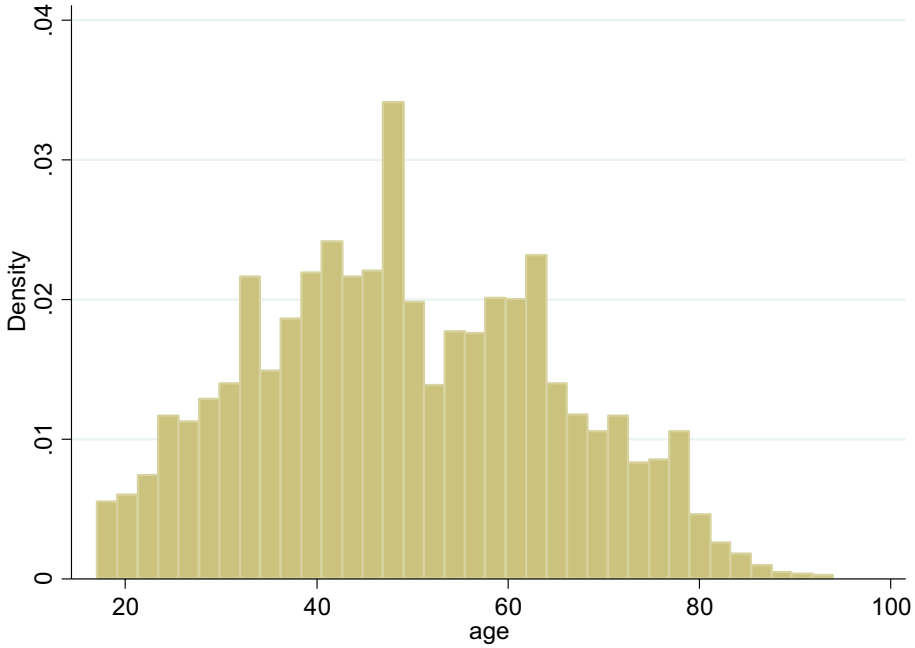

Fig. 1 Frequency histogram of age distribution

4 Relationship between charitable donation and SWB

4.1 Model setting and measurement method

We assume that SWB can be described by the following models.

The OLS models are as follows:

$$SWB_i = \beta Giving_i + \sum_{j=1}^{n} \omega_j X_{ij} + e_i \tag{1}$$

The ordered probit models are as follows:

$$SWB_i = \mathrm{F}\left(\beta Giving_i + \sum_{j=1}^{n} \omega_j X_{ij} + e_i \right),$$

F() is a non-linear function, and its concrete form is:

$$F(SWB_i^*) = \begin{cases} 1, \ \mathrm{SWB} * \leq K_1 \\ 2, < \mathrm{SWB} * \leq K_2 \\ 3, < \mathrm{SWB} * \leq K_3 \\ 4, < \mathrm{SWB} * \leq K_2 \\ 5, < \mathrm{SWB} * \end{cases}$$

Table 2 Charitable behavior and SWB

Variables	(1) OLS	(2) OLS	(3) OPROBIT	(4) OPROBIT	(5) 2SLS	(6) 2SLS
Giving	0.124***	0.124***	0.207***	0.220***	0.383*	0.473***
	(0.0257)	(0.0461)	(0.0430)	(0.0758)	(0.219)	(0.241)
Gender	−0.0235	−0.0494	−0.0378	−0.0731	−0.0129	−0.0807*
	(0.0270)	(0.0300)	(0.0423)	(0.0449)	(0.0274)	(0.0540)
Work	−0.0431	−0.0285	−0.0858*	−0.0601	−0.0435	0.0486
	(0.0338)	(0.0447)	(0.0504)	(0.0650)	(0.0332)	(0.0713)
SOEs	0.0208	0.106	0.0192	0.134	−0.0447	−0.000999
	(0.0473)	(0.0662)	(0.0769)	(0.112)	(0.0703)	(0.205)
Gender*giving		0.0788*		0.112*		0.223
		(0.0425)		(0.0675)		(0.155)
Work*giving		−0.0534		−0.0949		−0.316
		(0.0589)		(0.0905)		(0.200)
SOEs*giving		−0.109		−0.143		0.00273
		(0.0900)		(0.154)		(0.329)
Constant	2.182***	2.185***			2.173***	2.155***
	(0.352)	(0.350)			(0.354)	(0.355)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4,640	4,640
R − squared	0.234	0.235			0.217	0.214

First stage regression results

Variable	(1) Giving	(2) Giving
Ratio of giving	0.318***	0.318**
	(0.083)	(0.129)
F-statistic for instruments	14.89	14.09

Note: Robust standard errors clustered at the prefecture city level in parentheses. The results of the control variables are shown in Table 5.

*$p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

$K_1 < K_2 < K_3 < K_4$ are unknown tangents, and they are all parameters to be estimated. SWB* is a latent variable, and it satisfies the following equation:

$$SWB_i^* = \beta Giving_i + \sum_{j=1}^{n} \omega_j X_{ij} + e_i \tag{2}$$

Within these models, SWB is subjective well-being; the subscript i of the variable represents the individual i; and $Giving_i$ represents whether the individual i donated or not. X_{ij} represents the j_{th} control variable of individual i, with n control variables: "gender," "age," "agesq," "Han," "edu," "Hukou," "urban," "religion," "married," "family size," "log (household income)," "household income rank," "car," "house," "party member," "work," "SOEs," "social status," "health," "depression," "dropout," "Gini coefficient," "social fairness," "social trust," "social medical insurance," "social pension insurance," "commercial medical insurance," and "commercial pension insurance." The residual is represented by e_i.

The CGSS surveyed donation behavior in 2012 only. We used clustered robust standard errors to account for possible heteroscedasticity problems in cross-section data. In order to alleviate potential endogenous problems, we also reported the 2SLS estimates.

4.2 Baseline results

The OLS and Ordered Probit regressions estimations are both reported in Table 2. There may be a reverse causal relationship between giving and SWB (Boenigk and Mayr 2016) (i.e., happier people may be more willing to engage in philanthropy). OLS and Ordered Probit regression estimations might suffer from endogeneity problem of giving, and hence are biased. In order to alleviate the potential endogeneity problems, we used the ratio of community residents participating in charitable giving as the instrument for "giving". The baseline regression results are shown in Table 2. Compared to column (1), (3) and (5), three interaction terms with giving (Gender*giving,Work*giving, and SOEs*giving) are added in regressions in column (2), (4) and (6). Three interaction terms are insignificant or marginally significant and the estimates of coefficient of giving are robust to the three interaction terms.

The OLS estimation of coefficient of "giving" is significantly positive, which indicates giving is positively correlated to SWB (Column (1) and (2) in Table 2). The coefficient of "giving" is 0.124, very close to the estimations in Dunn et al. (2008) and Tiefenbach and Kohlbacher (2015), which are 0.10 and 0.155 respectively. Chinese can obtain comparable happiness from giving as Americans or Japanese. The Ordered Probit and 2SLS estimates of coefficient of "giving" are also significantly positive (Column (3)–(6) in Table 2). The marginal effects of Ordered Probit estimations are in Table 9 in the Appendix. It is noteworthy that, the coefficients of "giving" are much bigger than estimates reported in Ren and Ye (2017). It is probably because they used family donations as an independent variable, which underestimated the impacts of donor's donations on his/her own happiness. Upon above results, charitable giving can bring happiness to Chinese individuals. Tables 6–8 report the results of OLS, Ordered Probit and 2SLS resgressions respectively when the control variables are added step by step into the regressions. The estimates of coefficient of "giving" are quite close and statistically significantly positive in all regressions which indicate that the baseline results are robust to changes in control variables.

The first stage regression results in Table 2 show the F-statistics are 14.89 and 14.09 respectively, indicating that our IV is not weak. Considering that the dependent variable (SWB) is discrete, we also report the results of IV ordered probit regressions (Table 10 of the Appendix) which confirm that there is a significant positive correlation between charitable giving and SWB. As shown in Table 10, For a person whose other control variables are at an average level, giving increases his/her probability of choosing "very happy" and "happy", and reduces his/her probability of choosing the other three unhappy options.

4.3 Heterogeneity analysis

4.3.1 Workers vs non-workers

Workplace giving enjoys widespread popularity in both private and public sector organizations globally (Rimes et al. 2019). Compared to those of non-workers, employed workers' donation behaviors are greatly influenced by the characteristics of the workplace. For example, the donation of working people is more likely to donate under the social pressures from colleagues and bosses. Therefore, charitable giving of the working people is

Table 3 Giving and SWB (In-SOE vs Out-SOE)

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Out-SOEs			In-SOEs		
	OPROBIT	2SLS	2SLS	OPROBIT	2SLS	2SLS
Giving	0.213***	0.334	0.381	0.300	0.524	0.184
	(0.0618)	(0.370)	(0.355)	(0.261)	(0.328)	(0.332)
Work hours			−0.00173*			−0.00857**
			(0.00102)			(0.00389)
Constant		2.071***	2.067***		7.372***	6.667***
		(0.475)	(0.495)		(2.140)	(2.050)
Observations	2849	2849	2724	237	237	214
R-squared		0.237	0.232		0.435	0.501

First stage regression results

	(1)	(2)	(3)	(4)
Variable	Out-SOEs		In-SOEs	
	Giving	Giving	Giving	Giving
Ratio of giving	0.281***	0.303***	0.764***	0.811***
	(0.079)	(0.079)	(0.274)	(0.295)
F-statistic for instruments	12.65	14.88	7.81	7.55

Note: Control variables include those used in column (1) in Table 2, except for "work" and "SOEs." Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$.

less likely voluntary and brings less happiness to them or even reduces their subjective well-being. We divided the whole sample into two subsamples, a workers subsample and a non-workers subsample. The regression results of subsamples are shown in Table 12.

The OLS and ordered probit results of Table 12 confirm that 'giving' has a significant positive impact on SWB. The 2SLS results of Table 12 show that "giving" is still positively correlated to SWB, but statistically insignificant at the 10% level. In addition, the F-statistic from the first stage regression in column 1 of Table 1 is 4.76, which is less than 10, suggesting that our IV is weak. This is probably because the sample size of column (3) in Table 12 is much smaller than that in Table 2.

4.3.2 In-SOE verses Out-SOE

Autonomy plays an important role in the impact of prosocial behavior on happiness (Yang and Kou 2015). As discussed in the introduction, workers employed by SOEs are more likely to encounter fundraising that has been organized or mobilized by employers. Such fundraising may crowd out the intrinsic motivation for charitable giving and reduce the happiness generated from charitable giving. In order to better understand the impact of giving in SOEs on SWB, we divided the workers' sample into an in-SOE subsample and an out-SOE subsample, and controlled for the working hours of a typical week. The regression results of subsamples are shown in Table 3.

The 2SLS results in Table 3 indicate that giving had a positive but statistically insignificant effect on donors' SWB. Columns 4, 5 and 6 in Table 3 report the results that giving also has a positive relationship with SWB for in-SOEs sample, though the

relationship is insignificant. Thus, there is no evidence that fundraising in state-owned enterprises (SOEs) will have a detrimental effect on the SWB of donors.

4.3.3 Female verses male

Gender differences in donation behavior (Andreoni et al. 2003) may lead to differences in the degree of happiness that donations bring to them. We divided the whole sample into a male subsample and a female subsample. The regression results of subsamples are shown in Table 13, below.

Table 13 shows that giving had a greater impact on SWB for men than for women, and the impact on men's SWB is significant in all the estimates.

4.4 Robustness checks

4.4.1 Replace household income with personal income

Household income—not merely personal income—plays an important role in charitable giving and also has an impact on SWB. We used personal income as the proxy of household income to check the robustness of results in baseline regression. The length of working time affects life satisfaction (Valente and Berry 2016). The impact of personal income on happiness may be underestimated if work hours are not taken into account (Pouwels et al. 2008). Therefore, we also included the variable "working hours" into the regressions in Table 14.

Comparing results in Tables 2 and 14, we find that coefficients on the variable "Giving" were smaller when controlling for household income rather than personal income. The effect of household income on SWB was captured by "Giving" if household income was not controlled for. Moreover, our 2SLS results (column 5 of Table 2 and column 5 of Table 14) show that regardless of whether "household income" or "personal income" is controlled for, the coefficients of "Giving" are still statistically significant at the 10% level. As we expected, when working hours are included in the regression, the impact of personal income on happiness increases. In sum, baseline results are robust to various measures of income.

4.4.2 Excluding student samples

Most students have no personal income, and their donation behaviors can be influenced by schools, teachers, and peers. We dropped student sample, and the regression results are shown in Table 15.

The results in Table 15 are quite the same as baseline results and confirm that our findings are robust.

4.4.3 Poverty alleviation and disaster relief donations

The number of donors and the average amount of a donation to poverty alleviation and disaster relief are the highest among all donations. We investigated the donations to poverty alleviation and disaster relief only as another robustness check. These results are shown in Table 16.

The results in Table 16 are also qualitatively similar to those in Table 2. It is noteworthy that, in the 2SLS estimates, the coefficient of the variable "giving2" is approximately equal to that of Ren and Ye (2017) (column 2, Table 2). Nevertheless, our 2SLS result is statistically insignificant at the 10% level.

4.4.4 Propensity score matching (PSM)

Many unobservable differences may exist between donors and non-donors. To check the robustness of above results, we employed the propensity score matching method for regressions in Table 17. The matching covariates include control variables used in Table 2. The number of matches per observation is one.

As expected, the PSM results are almost the same as those in Table 2. The coefficients of "Giving" are significantly positive in all models. In sum, donating behavior presents a notable positive correlation with SWB.

4.4.5 Converting SWB to a dummy variable

We changed the SWB to a dummy variable that is assigned a value of 1 if self-assessed happiness is very happy or happy, and 0 otherwise. Then we employed Probit model to test the relationship between giving and happiness in Table 18.

The results of Table 18 are consist with the baseline results that donation behavior and donors' SWB have a significant positive correlation.

5 Conclusion

Using the data set from the 2012 CGSS, this paper estimated the impact of charitable giving on individual SWB. Using the ratio of giving at community level as the instrumental variable for giving, we found that charitable giving was able to significantly enhance the non-instantaneous SWB of donors—data that were still valid after eliminating students from the sample, using the PSM method, or converting SWB to a dummy variable.

Fundraising organized or mobilized by SOEs (all public sectors included) raises some concerns, as it may have a detrimental effect on the happiness one can derive from donating. We divided the sample into two subsamples, an in-SOE sample and an out-SOE sample, and found that giving positively correlated with SWB for both subsamples, but that the impact of giving on SWB were both insignificant at the 10% level. We did not find evidence that fundraising in SOEs would have a detrimental effect on the SWB of donors.

This paper contributes to the literature in four ways. First, we found that the positive effect of giving on donors' SWB was statistically significant when the endogeneity problem was addressed. Second, to the best of our knowledge, this paper is one of the few investigations of the impact of individual charitable giving on individual SWB in China using large survey data. Third, this paper provides evidence of the non-instantaneous effect of donation behavior on donors' SWB, which cannot be provided by experimental papers using a pretest–posttest design. Fourth, we found that fundraising in SOEs had no detrimental effect on the SWB of donors.

The present study used similar instrumental variable as Ren and Ye (2017) but drew upon a different data set—and reached a similar conclusion. We found that charitable

giving was significantly positively related to SWB. Ren and Ye (2017) estimated the effect of household donations on individuals' happiness since the data set they used (CFPS 2010) had information about household donations only. It is unclear why the donation of other household members would have an impact on one's SWB. Ren and Ye (2017) also missed a key variable, household income, which affects not only household or individual donation behavior, but also individual SWB. We also find the impact of household income is captured by household donation when it is not controlled for. For those not-working individuals, household income—rather than individual income—has even greater impact on one's SWB. Therefore, our study contributes to the literature by estimating the impact of donating with a more direct measure of individual donations in a developing country and by controlling for more confounding variables.

Charity giving can bring happiness to Chinese donors and the magnitude is comparable to that of other countries. The conjecture that "charity giving cannot bring happiness to Chinese" cannot explain the low level of Chinese participation in charity giving. It is more likely that quite a few people have no experience of donating, so they have no chance to experience the joy of giving. Many people will be more willing to donate if they recognize that charitable giving will bring them happiness and satisfaction. Therefore, governments and charities should get more people involved in charity events and encourage more people to give by making charitable giving cheaper, easier and more convenient. For example, governments and charities should encourage the development of the donation-based crowdfunding platforms, so that individuals can easily launch fundraising campaigns or donate to the needed on these online platforms. Secondly, governments and charities should also organize more charity events in addition to disaster relief fundraising campaigns. Charities can promote more offline charity events to attract more people to take part in and experience the joy of donating.

This paper still has some limitations. First, the instrumental variables selected for the study are far from perfect because they were limited by the available data. Second, only one wave of the CGSS surveyed individual charitable behaviors. It is impossible to control for charitable giving preference and track donors' donation history. Third, this paper did not empirically examine the mechanisms by which donation behavior affects individual SWB, which is a direction of our future research.

Appendix

See Tables 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18.

Table 4 Summary statistics (2)

Variable	Did not donate		Donated		Two-Sample *T*-test *p*-value	Wilcoxon Rank-Sum test *p*-value
	Mean	SD	Mean	SD		
SWB	3.781	0.856	3.988	0.795	0.000	0.000
Gender	0.526	0.499	0.503	0.500	0.137	0.137
Age	51.149	15.689	45.546	15.107	0.000	0.000
Han	0.918	0.275	0.897	0.304	0.017	0.017
Education	7.914	4.423	10.652	4.159	0.000	0.000
Hukou	0.409	0.492	0.616	0.487	0.000	0.000
Urban	2.736	1.776	3.508	1.700	0.000	0.000
Religion	0.123	0.328	0.159	0.366	0.001	0.001
Married	0.811	0.391	0.831	0.375	0.106	0.106
Family size	2.996	1.410	3.118	1.356	0.005	0.000
Log(household income)	10.106	1.102	10.673	0.924	0.000	0.000
Household income rank	2.3	1.101	2.567	1.116	0.000	0.000
Car	0.107	0.309	0.207	0.405	0.000	0.000
House	0.525	0.499	0.518	0.500	0.650	0.650
Party member	0.093	0.290	0.191	0.393	0.000	0.000
Work	0.650	0.477	0.696	0.460	0.000	0.000
SOEs	0.043	0.203	0.168	0.374	0.000	0.000
Social status	0.136	0343	0.207	0.405	0.000	0.000
Health	0.527	0.499	0.609	0.488	0.000	0.000
Depression	0.108	0.310	0.091	0.288	0.075	0.075
Dropout	0.157	0.364	0.094	0.292	0.000	0.000
Gini coefficient	0.453	0.076	0.446	0.070	0.002	0.002
Social fairness	0.460	0.498	0.438	0.496	0.157	0.157
Social trust	0.667	0.471	0.673	0.479	0.104	0.104
Social medical insurance	0.901	0.298	0.919	0.274	0.055	0.055
Social pension insurance	0.645	0.478	0.699	0.459	0.000	0.000
Commercial medical insurance	0.062	0.241	0.140	0.347	0.000	0.000
Commercial pension insurance	0.048	0.213	0.090	0.287	0.000	0.000
Observations	3080		1560			

Note: Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 5 Charitable behavior and SWB

Variables	(1) OLS SWB	(2) OLS SWB	(3) OPROBIT SWB	(4) OPROBIT SWB	(5) 2SLS SWB	(6) 2SLS SWB
Giving	0.124***	0.124***	0.207***	0.220***	0.383*	0.473**
	(0.0257)	(0.0461)	(0.0430)	(0.0758)	(0.219)	(0.241)
Gender	−0.0235	−0.0494	−0.0378	−0.0731	−0.0129	−0.0807
	(0.0270)	(0.0300)	(0.0423)	(0.0449)	(0.0274)	(0.0540)
Age	−0.0222***	−0.0219***	−0.0331***	−0.0327***	−0.0215***	−0.0206***
	(0.00513)	(0.00516)	(0.00793)	(0.00795)	(0.00511)	(0.00524)
Agesq/100	0.0266***	0.0264***	0.0399***	0.0396***	0.0265***	0.0258***
	(0.00507)	(0.00510)	(0.00768)	(0.00770)	(0.00515)	(0.00530)
Han	0.0112	0.0110	0.00835	0.00774	0.0129	0.0144
	(0.0615)	(0.0619)	(0.0978)	(0.0981)	(0.0617)	(0.0624)
Edu	0.00215	0.00254	0.000361	0.000894	−0.000741	0.000258
	(0.00391)	(0.00391)	(0.00610)	(0.00609)	(0.00450)	(0.00471)
Hukou	−0.0505	−0.0518	−0.0775	−0.0790	−0.0538	−0.0561*
	(0.0344)	(0.0344)	(0.0550)	(0.0551)	(0.0333)	(0.0339)
Urban=2	0.0522	0.0548	0.0741	0.0782	0.0477	0.0592
	(0.0548)	(0.0541)	(0.0880)	(0.0869)	(0.0526)	(0.0517)
Urban=3	−0.0559	−0.0577	−0.0538	−0.0555	−0.0687	−0.0699
	(0.0457)	(0.0455)	(0.0683)	(0.0680)	(0.0454)	(0.0454)
Urban=4	0.0129	0.0108	0.0544	0.0518	0.000909	0.00119
	(0.0504)	(0.0499)	(0.0767)	(0.0761)	(0.0489)	(0.0493)
Urban=5	0.0153	0.0150	0.0679	0.0676	0.0125	0.0180
	(0.0477)	(0.0475)	(0.0753)	(0.0749)	(0.0481)	(0.0462)
Religion	0.0655	0.0639	0.135*	0.132*	0.0459	0.0412
	(0.0471)	(0.0474)	(0.0736)	(0.0741)	(0.0491)	(0.0503)
Married	0.154***	0.154***	0.232***	0.232***	0.150***	0.147***
	(0.0345)	(0.0347)	(0.0509)	(0.0512)	(0.0332)	(0.0336)
Famsize	−0.00121	−0.00136	−0.000244	−0.000329	−0.00217	−0.00167
	(0.00945)	(0.00948)	(0.0134)	(0.0135)	(0.00945)	(0.00970)

Table 5 (continued)

Variables	(1) OLS SWB	(2) OLS SWB	(3) OPROBIT SWB	(4) OPROBIT SWB	(5) 2SLS SWB	(6) 2SLS SWB
Log(household income)	0.127***	0.127***	0.186***	0.185***	0.118***	0.114***
	(0.0284)	(0.0284)	(0.0401)	(0.0400)	(0.0289)	(0.0288)
Household income rank = 2	0.0638*	0.0651*	0.0904*	0.0923*	0.0656*	0.0713**
	(0.0363)	(0.0363)	(0.0543)	(0.0543)	(0.0360)	(0.0359)
Household income rank = 3	0.00603	0.00662	−0.0139	−0.0129	0.0214	0.0243
	(0.0442)	(0.0443)	(0.0646)	(0.0646)	(0.0462)	(0.0466)
household income rank = 4	−0.00939	−0.00771	0.00818	0.0114	−0.00396	0.00846
	(0.0579)	(0.0580)	(0.0866)	(0.0866)	(0.0576)	(0.0575)
Car	0.147***	0.150***	0.263***	0.267***	0.142***	0.150***
	(0.0258)	(0.0259)	(0.0433)	(0.0434)	(0.0262)	(0.0255)
House	−0.0479**	−0.0488**	−0.0722*	−0.0738*	−0.0555**	−0.0605**
	(0.0237)	(0.0239)	(0.0377)	(0.0381)	(0.0243)	(0.0249)
Party member	0.0215	0.0194	0.0338	0.0311	−0.00557	−0.0110
	(0.0338)	(0.0338)	(0.0550)	(0.0550)	(0.0399)	(0.0404)
Work	−0.0431	−0.0285	−0.0858*	−0.0601	−0.0435	0.0486
	(0.0338)	(0.0447)	(0.0504)	(0.0650)	(0.0332)	(0.0713)
SOEs	0.0208	0.106	0.0192	0.134	−0.0447	−0.000999
	(0.0473)	(0.0662)	(0.0769)	(0.112)	(0.0703)	(0.205)
Rank	0.196***	0.196***	0.362***	0.363***	0.186***	0.188***
	(0.0254)	(0.0254)	(0.0471)	(0.0469)	(0.0278)	(0.0276)
Health	0.183***	0.184***	0.297***	0.297***	0.184***	0.186***
	(0.0258)	(0.0257)	(0.0413)	(0.0411)	(0.0258)	(0.0261)
Depression	−0.475***	−0.476***	−0.621***	−0.623***	−0.481***	−0.483***
	(0.0534)	(0.0533)	(0.0703)	(0.0702)	(0.0516)	(0.0513)
Dropout	−0.0420	−0.0428	−0.0647	−0.0660	−0.0325	−0.0380
	(0.0417)	(0.0418)	(0.0594)	(0.0596)	(0.0417)	(0.0418)
Gini coefficient	−0.0284	−0.0398	−0.112	−0.126	−0.0717	−0.130
	(0.306)	(0.307)	(0.517)	(0.517)	(0.297)	(0.302)

Table 5 (continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	OPROBIT	OPROBIT	2SLS	2SLS
	SWB	SWB	SWB	SWB	SWB	SWB
Social fairness	0.331***	0.330***	0.525***	0.524***	0.324***	0.321***
	(0.0219)	(0.0218)	(0.0354)	(0.0352)	(0.0228)	(0.0230)
Social trust	0.135***	0.134***	0.206***	0.206***	0.132***	0.130***
	(0.0259)	(0.0258)	(0.0394)	(0.0393)	(0.0257)	(0.0256)
Social medical insurance	0.0922**	0.0930**	0.135**	0.136**	0.0838*	0.0896**
	(0.0427)	(0.0429)	(0.0632)	(0.0637)	(0.0445)	(0.0448)
Social pension insurance	0.000739	0.000700	−0.00826	−0.00838	0.00311	0.00433
	(0.0236)	(0.0237)	(0.0365)	(0.0366)	(0.0234)	(0.0237)
Commercial medical insurance	0.0402	0.0431	0.0448	0.0492	0.0190	0.0297
	(0.0403)	(0.0403)	(0.0696)	(0.0697)	(0.0460)	(0.0480)
Commercial pension insurance	0.0652	0.0641	0.101	0.100	0.0732	0.0705
	(0.0451)	(0.0453)	(0.0786)	(0.0789)	(0.0454)	(0.0459)
Gender*giving		0.0788*		0.112*		0.223
		(0.0425)		(0.0675)		(0.155)
Work*giving		−0.0534		−0.0949		−0.316
		(0.0589)		(0.0905)		(0.200)
SOEs*giving		−0.109		−0.143		0.00273
		(0.0900)		(0.154)		(0.329)
Constant	2.182***	2.185***			2.173***	2.155***
	(0.352)	(0.350)			(0.354)	(0.355)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4,640	4,640
R-squared	0.234	0.235			0.217	0.214

Note: Robust standard errors clustered at the prefecture city level in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 6 Giving and SWB (OLS)

Variables	(1) Demo SWB	(2) Income SWB	(3) Social status SWB	(4) Health/exp SWB	(5) inequality SWB	(6) insurance SWB
Giving	0.175*** (0.0257)	0.148*** (0.0252)	0.134*** (0.0251)	0.140*** (0.0260)	0.126*** (0.0252)	0.124*** (0.0257)
Constant	3.937*** (0.150)	2.257*** (0.351)	2.364*** (0.344)	2.377*** (0.338)	2.217*** (0.347)	2.182*** (0.352)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4640	4640
R-squared	0.091	0.126	0.139	0.187	0.233	0.234

Note: Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$. In this table, control variables are added step by step. In column (1), demographic factors are controlled for, which include gender, age, agesq/100, Han, edu, hukou, urban, religion, married and famsize. In column (2), in addition to demographic factors, income measures are controlled for, which include log (household income), household income rank, car and house. In column (3), in addition to control variables in column (2), social status measures are controlled for, which include party, work, SOEs and rank. In column (4), health and experience measures, which include health, depression and dropout, are controlled for in addition to control variables in column (4). In column (5), inequality measures, which include Gini coefficient, social fairness, and social trust, are controlled for in addition to control variables in column (4). In column (6), in addition to control variables in column (5), insurance measures, which include social medical insurance, commercial medical insurance, social pension insurance and commercial pension insurance, are conolled for.

Table 7 Giving and SWB (OPROBIT)

Variables	(1) Demo SWB	(2) Income SWB	(3) Social status SWB	(4) Health/exp SWB	(5) Inequality SWB	(6) Insurance SWB
Giving	0.260*** (0.0394)	0.226*** (0.0390)	0.208*** (0.0391)	0.222*** (0.0423)	0.210*** (0.0424)	0.207*** (0.0430)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4640	4640

Note: Control variables in this table are the same as those in Table 6. Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 8 Giving and SWB (2SLS)

Variables	(1) Demo SWB	(2) Income SWB	(3) Social status SWB	(4) Health/exp SWB	(5) Inequality SWB	(6) Insurance SWB
Giving	0.398*	0.328	0.319	0.380*	0.385*	0.383*
	(0.205)	(0.204)	(0.220)	(0.213)	(0.217)	(0.219)
Constant	3.842***	2.249***	2.336***	2.341***	2.201***	2.173***
	(0.159)	(0.345)	(0.336)	(0.330)	(0.349)	(0.354)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4,640	4,640
R-squared	0.078	0.118	0.131	0.173	0.216	0.217
First stage regression results						
Variable	(1) Giving	(2) Giving	(3) Giving	(4) Giving	(5) Giving	(6) Giving
Ratio of giving	0.354***	0.352***	0.324***	0.322***	0.322***	0.318***
	(0.088)	(0.089)	(0.086)	(0.086)	(0.083)	(0.083)
F-statistic for instruments	16.13	15.54	14.32	13.98	15.17	14.89

Note: Control variables in this table are the same as those in Table 6. Robust standard errors clustered at the prefecture city level in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 9 Charitable behavior and SWB (Ordered Probit)

Variables	Coeff	Pr(SWB = 1)	Pr(SWB = 2)	Pr(SWB = 3)	Pr(SWB = 4)	Pr(SWB = 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Giving	0.207***	−0.0068***	−0.0195***	−0.0261***	0.0075***	0.0449***
	(0.0430)	(0.0016)	(0.0040)	(0.0054)	(0.0016)	(0.0091)
Gender	−0.0378	0.0012	0.0035	0.0047	−0.0013	−0.0082
	(0.0423)	(0.0013)	(0.0039)	(0.0053)	(0.0015)	(0.0091)
Age	−0.0331***	0.0010***	0.0031***	0.0041***	−0.0012***	−0.0072***
	(0.00793)	(0.0002)	(0.0007)	(0.0010)	(0.0003)	(0.0017)
Agesq/100	0.0399***	−0.0013***	−0.0037***	−0.0050***	0.0014***	0.0086***
	(0.00768)	(0.0002)	(0.0007)	(0.0098)	(0.0003)	(0.0016)
Han	0.00835	−0.0002	−0.0007	−0.0010	0.0003	0.0018
	(0.0978)	(0.0032)	(0.0092)	(0.0123)	(0.0035)	(0.0212)
Edu	0.000361	−0.00001	−0.00003	−0.00004	0.00001	0.00007
	(0.00610)	(0.0002)	(0.0005)	(0.0007)	(0.0002)	(0.0013)
Hukou	−0.0775	0.0025	0.0073	0.0098	−0.0028	−0.0168
	(0.0550)	(0.0018)	(0.0051)	(0.0070)	(0.0020)	(0.0119)
Urban = 2	0.0741	−0.0024	−0.0069	−0.0093	0.0025	0.0162
	(0.0880)	(0.0027)	(0.0080)	(0.0111)	(0.0026)	(0.0195)
Urban = 3	−0.0538	0.0019	0.0053	0.0068	−0.0029	−0.0111
	(0.0683)	(0.0024)	(0.0068)	(0.0086)	(0.0038)	(0.0141)
Urban = 4	0.0544	−0.0018	−0.0051	−0.0069	0.0020	0.0118
	(0.0767)	(0.0025)	(0.0072)	(0.0097)	(0.0027)	(0.0167)
Urban = 5	0.0679	−0.0022	−0.0063	−0.0086	0.0023	0.0148
	(0.0753)	(0.0025)	(0.0070)	(0.0095)	(0.0027)	(0.0164)
Religion	0.135*	−0.0045*	−0.0127*	−0.0170*	0.0049*	0.0049*
	(0.0736)	(0.0024)	(0.0068)	(0.0095)	(0.0027)	(0.0027)
Married	0.232***	−0.0076***	−0.0219***	−0.0293***	0.0084***	0.0505***
	(0.0509)	(0.0019)	(0.0048)	(0.0066)	(0.0020)	(0.0110)
Famsize	−0.000244	8.06e−06	0.00002	0.00003	−8.91e-06	−0.00005
	(0.0134)	(0.0004)	(0.0012)	(0.0016)	(0.0004)	(0.0029)

Table 9 (continued)

Variables	Coeff	Pr(SWB = 1)	Pr(SWB = 2)	Pr(SWB = 3)	Pr(SWB = 4)	Pr(SWB = 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Log(household income)	0.186***	−0.0061***	−0.0175***	−0.0236***	0.0068***	0.0405***
	(0.0401)	(0.0016)	(0.0038)	(0.0050)	(0.0014)	(0.0089)
Household income rank = 2	0.0904*	−0.0028	−0.0083*	−0.0114	0.0025	0.0200
	(0.0543)	(0.0017)	(0.0049)	(0.0070)	(0.0020)	(0.0118)
Household income rank = 3	−0.0139	0.0004	0.0013	0.0017	−0.0006	−0.0029
	(0.0646)	(0.0022)	(0.0062)	(0.0081)	(0.0029)	(0.0137)
Household income rank = 4	0.00818	−0.0002	−0.0007	−0.0010	0.0003	0.0017
	(0.0866)	(0.0029)	(0.0083)	(0.0109)	(0.0036)	(0.0185)
Car	0.263***	−0.0086***	−0.0247***	−0.0332***	0.0095***	0.0571***
	(0.0433)	(0.0015)	(0.0042)	(0.0058)	(0.0019)	(0.0092)
House	−0.0722*	0.0023*	0.0068*	0.0091*	−0.0026*	−0.0157*
	(0.0377)	(0.0012)	(0.0036)	(0.0047)	(0.0013)	(0.0082)
Party member	0.0338	−0.0011	−0.0031	−0.0042	0.0012	0.0073
	(0.0550)	(0.0018)	(0.0051)	(0.0070)	(0.0020)	(0.0119)
Work	−0.0858*	0.0028	0.0080*	0.0108*	−0.0031*	−0.0186*
	(0.0504)	(0.0017)	(0.0047)	(0.0064)	(0.0018)	(0.0109)
SOEs	0.0192	−0.0006	−0.0018	−0.0024	0.0007	0.0041
	(0.0769)	(0.0025)	(0.0072)	(0.0097)	(0.0028)	(0.0167)
Rank	0.362***	−0.0119***	−0.0341***	−0.0458***	0.0132***	0.0787***
	(0.0471)	(0.0018)	(0.0045)	(0.0065)	(0.0021)	(0.0098)
Health	0.297***	−0.0098***	−0.0280***	−0.0376***	0.0108***	0.0646***
	(0.0413)	(0.0017)	(0.0039)	(0.0055)	(0.0017)	(0.0088)
Depression	−0.621***	0.0205***	0.0585***	0.0786***	−0.0226***	−0.1350***
	(0.0703)	(0.0031)	(0.0070)	(0.0091)	(0.0027)	(0.0147)
Dropout	−0.0647	0.0021	0.0061	0.0082	−0.0023	−0.0140
	(0.0594)	(0.0019)	(0.0055)	(0.0076)	(0.0022)	(0.0129)

Table 9 (continued)

Variables	Coeff	Pr(SWB = 1)	Pr(SWB = 2)	Pr(SWB = 3)	Pr(SWB = 4)	Pr(SWB = 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Gini coefficient	−0.112	0.0037	0.0105	0.0142	−0.0040	−0.0243
	(0.517)	(0.0171)	(0.0489)	(0.0654)	(0.0188)	(0.1126)
Social fairness	0.525***	−0.0173***	−0.0495***	−0.0665***	0.0191***	0.1142***
	(0.0354)	(0.0022)	(0.0040)	(0.0055)	(0.0020)	(0.0075)
Social trust	0.206***	−0.0068***	−0.0194***	−0.0261***	0.0075***	0.0448***
	(0.0394)	(0.0015)	(0.0037)	(0.0052)	(0.0014)	(0.0087)
Social medical insurance	0.135**	−0.0044**	−0.0127**	−0.0170**	0.0049**	0.0292**
	(0.0632)	(0.0021)	(0.0060)	(0.0079)	(0.0022)	(0.0137)
Social pension insurance	−0.00826	0.0002	0.0007	0.0010	−0.0003	−0.0017
	(0.0365)	(0.0012)	(0.0034)	(0.0046)	(0.0013)	(0.0079)
Commercial medical insurance	0.0448	−0.0014	−0.0042	−0.0056	0.0016	0.0097
	(0.0696)	(0.0023)	(0.0065)	(0.0088)	(0.0025)	(0.0151)
Commercial pension insurance	0.101	−0.0033	−0.0095	−0.0128	0.0037	0.0220
	(0.0786)	(0.0026)	(0.0075)	(0.0100)	(0.0028)	(0.0172)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4,640	4,640

Note: Robust standard errors clustered at the prefecture city level in parentheses. Column 1–6 report the ordered probit results, with the coefficients in column 1 and marginal effects on the probabilities at each outcome of SWB in columns 2–6.* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 10 Charitable behavior and SWB (IV-ordered probit)

Variables	Coeff	Pr (SWB = 1)	Pr (SWB = 2)	Pr (SWB = 3)	Pr (SWB = 4)	Pr (SWB = 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Giving	0.6435**	−0.0243	−0.0621*	−0.0777*	0.0230**	0.1412**
	(0.3104)	(0.0161)	(0.0319)	(0.0333)	(0.0108)	(0.0702)
Gender	−0.0189	0.0007	0.0018	0.0022	−0.0006	−0.0041
	(0.0428)	(0.0015)	(0.0041)	(0.0052)	(0.0015)	(0.0093)
Age	−0.0313***	0.0011***	0.0030***	0.0037***	−0.0011***	−0.0068***
	(0.0079)	(0.0003)	(0.0007)	(0.0010)	(0.0003)	(0.0017)
Agesq/100	0.0390***	−0.0014***	−0.0037***	−0.0047***	0.0014***	0.0085***
	(0.0077)	(0.0004)	(0.0007)	(0.0009)	(0.0003)	(0.0017)
Han	0.0109	−0.0004	−0.0010	−0.0013	0.0003	0.0024
	(0.0983)	(0.0037)	(0.0095)	(0.0118)	(0.0035)	(0.0215)
Edu	0.0045	0.0001	0.0004	−0.0005	−0.0001	−0.0010
	(0.0069)	(0.0002)	(0.0006)	(0.0008)	(0.0002)	(0.0015)
Hukou	−0.0815	0.0030	0.0078	0.0098	−0.0029	−0.0179
	(0.0527)	(0.0020)	(0.0050)	(0.0065)	(0.0019)	(0.0115)
Urban = 2	0.0649	−0.0024	−0.0062	−0.0078	0.0021	0.0143
	(0.0835)	(0.0031)	(0.0079)	(0.0100)	(0.0024)	(0.0186)
Urban = 3	−0.0745	0.0031	0.0075	0.009	−0.0040	−0.0156
	(0.0665)	(0.0029)	(0.0068)	(0.0079)	(0.0036)	(0.0140)
Urban = 4	0.0333	−0.0012	−0.0032	−0.0040	0.0012	0.0072
	(0.0752)	(0.0028)	(0.0072)	(0.0091)	(0.0027)	(0.0164)
Urban = 5	0.0618	−0.0023	−0.0059	−0.0074	0.0020	0.0136
	(0.0769)	(0.0028)	(0.0073)	(0.0094)	(0.0026)	(0.0169)
Religion	0.0992	−0.0037	−0.0095	−0.0119	0.0035	0.0217
	(0.0784)	(0.0027)	(0.0074)	(0.0099)	(0.0029)	(0.0170)
Married	0.2219***	−0.0084***	−0.0214***	−0.0268***	0.0079***	0.0487***
	(0.0495)	(0.0025)	(0.0048)	(0.0064)	(0.0019)	(0.0108)
Famsize	−0.0018	0.00007	0.0001	0.0002	−0.00006	−0.0004
	(0.0135)	(0.0005)	(0.0013)	(0.0016)	(0.0004)	(0.0029)

Table 10 (continued)

Variables	Coeff	Pr (SWB = 1)	Pr (SWB = 2)	Pr (SWB = 3)	Pr (SWB = 4)	Pr (SWB = 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Log(household income)	0.1666***	−0.0063***	−0.0160***	−0.0201***	0.0059***	0.0365***
	(0.0423)	(0.0018)	(0.0040)	(0.0055)	(0.0015)	(0.0092)
Household income rank = 2	0.0920*	−0.0033*	−0.0087*	−0.0111	0.0028	0.0204
	(0.0541)	(0.0020)	(0.0051)	(0.0068)	(0.0021)	(0.0118)
Household income rank = 3	0.0125	−0.0004	−0.0012	−0.0015	0.0005	0.0027
	(0.0674)	(0.0026)	(0.0066)	(0.0081)	(0.0029)	(0.0145)
Household income rank = 4	0.0173	−0.0006	−0.0017	−0.0021	0.0007	0.0037
	(0.0866)	(0.0033)	(0.0085)	(0.0105)	(0.0037)	(0.0186)
Car	0.2498***	−0.0094***	−0.0241***	−0.0301***	0.0089***	0.0548***
	(0.0458)	(0.0020)	(0.0043)	(0.0067)	(0.0019)	(0.0096)
House	−0.0836**	0.0031*	0.0080**	0.0101**	−0.0029**	−0.0183**
	(0.0385)	(0.0016)	(0.0038)	(0.0046)	(0.0013)	(0.0085)
Party member	−0.0127	0.0004	0.0012	0.0015	−0.0004	−0.0027
	(0.0639)	(0.0024)	(0.0062)	(0.0076)	(0.0022)	(0.0140)
Work	−0.0851*	0.0032	0.0082*	0.0102*	−0.0030*	−0.0186*
	(0.0495)	(0.0020)	(0.0047)	(0.0060)	(0.0017)	(0.0108)
SOEs	−0.0922	0.0034	0.0089	0.0111	−0.0033	−0.0202
	(0.1071)	(0.0045)	(0.0105)	(0.0123)	(0.0037)	(0.0237)
Rank	0.3383***	−0.0128***	−0.0326***	−0.0408***	0.0121***	0.0742***
	(0.0543)	(0.0024)	(0.0050)	(0.0082)	(0.0023)	(0.0110)
Health	0.2925***	−0.0110***	−0.0282***	−0.0353***	0.0104***	0.0641***
	(0.0422)	(0.0025)	(0.0040)	(0.0061)	(0.0017)	(0.0089)
Depression	−0.6211***	0.0235***	0.0599***	0.0750***	−0.0222***	−0.1363***
	(0.0703)	(0.0048)	(0.0069)	(0.0106)	(0.0028)	(0.0144)
Dropout	−0.0474	0.0017	0.0045	0.0057	−0.0017	−0.0104
	(0.0600)	(0.0022)	(0.0057)	(0.0073)	(0.0021)	(0.0131)

Table 10 (continued)

Variables	Coeff	Pr (SWB = 1)	Pr (SWB = 2)	Pr (SWB = 3)	Pr (SWB = 4)	Pr (SWB = 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Gini coefficient	−0.1846	0.0069	0.0178	0.0223	−0.0066	−0.0405
	(0.4850)	(0.0188)	(0.0472)	(0.0580)	(0.0173)	(0.1067)
Social fairness	0.5055***	−0.0191***	−0.0488***	−0.0610***	0.0181***	0.1109***
	(0.0420)	(0.0034)	(0.0042)	(0.0080)	(0.0022)	(0.0082)
Social trust	0.1988***	−0.0075***	−0.0192***	−0.0240***	0.0071***	0.0436***
	(0.0399)	(0.0019)	(0.0038)	(0.0054)	(0.0014)	(0.0087)
Social medical insurance	0.1182*	−0.0044*	−0.0114*	−0.0142*	0.0042*	0.0259*
	(0.0673)	(0.0024)	(0.0064)	(0.0084)	(0.0024)	(0.0146)
Social pension insurance	−0.0040	0.0001	0.0003	0.0004	−0.0001	−0.0008
	(0.0363)	(0.0013)	(0.0035)	(0.0044)	(0.0013)	(0.0079)
Commercial medical insurance	0.0078	−0.0002	−0.0007	−0.0009	0.0002	0.0017
	(0.0782)	(0.0029)	(0.0075)	(0.0094)	(0.0028)	(0.0171)
Commercial pension insurance	0.1136	−0.0043	−0.0109	−0.0137	0.0040	0.0249
	(0.0781)	(0.0032)	(0.0077)	(0.0093)	(0.0027)	(0.0173)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	4,640	4,640	4,640	4,640	4,640

Note: Robust standard errors clustered at the prefecture city level in parentheses. Column 1–6 report the IV ordered probit results, with the coefficients in column 1 and marginal effects on the probabilities at each outcome of SWB in columns 2–6.* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 11 Examinations of the association between giving and happiness

Study	Sample
Dunn et al. (2008)	America
Aknin et al. (2012)	International Unspecified
Aknin et al. (2013)	International Unspecified
Surana and Lomas (2014)	India, Austria, USA, Poland, Switzerland, Sweden, Portugal, Turkey, Poland and United Kingdom
Helliwell et al. (2014)	America
Sibley and Bulbulia (2015)	New Zealand
Tiefenbach and Kohlbacher (2015)	Japan
Ren and Ye (2017)	China
Kaya et al. (2020)	Turkey

Table 12 Giving and SWB (Workers vs Non-workers)

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Non-workers			Workers		
	OLS	OPROBIT	2SLS	OLS	OPROBIT	2SLS
Giving	0.121**	0.217***	0.750	0.123***	0.207***	0.285
	(0.0492)	(0.0768)	(0.643)	(0.0350)	(0.0575)	(0.288)
Constant	2.073***		1.903***	2.167***		2.199***
	(0.483)		(0.531)	(0.442)		(0.453)
Observations	1,554	1,554	1,554	3,086	3,086	3,086
R-squared	0.287		0.205	0.242		0.235

First stage regression results

	(1)	(2)
Variable	Non-workers	Workers
	Giving	Giving
Ratio of giving	0.256**	0.316***
	(0.118)	(0.074)
F-statistic for instruments	4.76	18.28

Note: Control variables include those used in in column (1) Table 2, except for "work." Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 13 Giving and SWB (female vs male)

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Female			Male		
	OLS	OPROBIT	2SLS	OLS	OPROBIT	2SLS
Giving	0.102**	0.176***	0.217	0.142***	0.250***	0.707**
	(0.0392)	(0.0600)	(0.303)	(0.0334)	(0.0606)	(0.326)
Constant	2.394***		2.402***	2.111***		2.028***
	(0.454)		(0.453)	(0.504)		(0.502)
Observations	2,237	2237	2,237	2,403	2,403	2,403
R-squared	0.240		0.237	0.282		0.199

First stage regression results

	(1)	(2)
Variable	Female	Male
	Giving	Giving
Ratio of giving	0.330***	0.287***
	(0.116)	(0.076)
F-statistic for instruments	8.05	14.33

Note: Control variables include those used in column (1) in Table 2, except for "gender." Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 14 Charitable behavior and SWB (personal income)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	OPROBIT	OPROBIT	2SLS	2SLS
	SWB	SWB	SWB	SWB	SWB	SWB
Giving	0.129***	0.120***	0.214***	0.199***	0.494**	0.429
	(0.0264)	(0.0357)	(0.0439)	(0.0587)	(0.238)	(0.289)
Log(personal income)	0.0112**	0.0248*	0.0179**	0.0366*	0.00986*	0.0210
	(0.00530)	(0.0132)	(0.00810)	(0.0208)	(0.00523)	(0.0134)
Working hours	–	−0.00207**	–	−0.00331**	–	−0.00194**
		(0.00100)		(0.00150)		(0.000981)
Constant	3.340***	3.344***	–	–	3.204***	3.349***
	(0.226)	(0.312)			(0.225)	(0.321)
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,640	2,938	4,640	2,938	4,640	2,938
R − squared	0.229	0.239	–	–	0.196	0.214

First stage regression results

Variable	(1)	(2)
	Giving	Giving
Ratio of giving	0.327***	0.338***
	(0.081)	(0.076)
F − statistic for instruments	16.08	20.03

Note: Control variables include those used in column (1) in Table 2. Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 15 Charitable Behavior and SWB (Excluding Students)

Variables	(1) OLS SWB	(2) OPROBIT SWB	(3) 2SLS SWB
Giving	0.121***	0.202***	0.389*
	(0.0251)	(0.0422)	(0.224)
Constant	2.127***		2.122***
	(0.360)		(0.362)
City dummies	Yes	Yes	Yes
Observations	4,578	4,578	4,578
R-squared	0.234		0.217
First stage regression results			
Variable			(1)Giving
Ratio of giving			0.316***
			(0.083)
F-statistic for instruments			14.59

Note: Control variables include those used in column (1) in Table 2. Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 16 Charitable behavior and SWB (poverty alleviation and disaster relief)

Variables	(1) OLS SWB	(2) OPROBIT SWB	(3) 2SLS SWB
Giving2	0.112***	0.194***	0.309
	(0.0241)	(0.0416)	(0.199)
Constant	2.206***		2.240***
	(0.351)		(0.360)
City dummies	Yes	Yes	Yes
Observations	4,640	4,640	4,640
R-squared	0.233		0.224
First stage regression results			
Variable			(1)Giving2
Ratio of giving2			0.342***
			(0.089)
F-statistic for instruments			14.68

Note: Control variables include those used in column (1) in Table 2. Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 17 Charitable behavior and SWB (PSM)

Variables	(1) OLS SWB	(2) OPROBIT SWB	(3) 2SLS SWB
Giving	0.123***	0.206***	0.375*
	(0.0256)	(0.0429)	(0.220)
Constant	2.277***		2.273***
	(0.381)		(0.386)
City dummies	Yes	Yes	Yes
Observations	4,591	4,591	4,591
R-squared	0.232		0.216
First stage regression results			
Variable			(1)Giving
Ratio of giving			0.320***
			(0.083)
F-statistic for instruments			14.90

Note: Control variables include those used in column (1) in Table 2. Robust standard errors clustered at the prefecture city level in parentheses. * $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table 18 Charitable behavior and SWB (dummy variable)

Variables	(1) OLS SWB	(2) PROBIT SWB	(3) 2SLS SWB
Giving	0.0702***	0.299***	0.254*
	(0.0115)	(0.0478)	(0.151)
Constant	0.0448	−2.075***	0.0385
	(0.163)	(0.646)	(0.155)
City dummies	Yes	Yes	Yes
Observations	4,640	4,640	4,640
R-squared	0.193		0.160
First stage regression results			
Variable			(1) Giving
Ratio of giving			0.318***
			(0.083)
F-statistic for instruments			14.89

Note: Control variables include those used in column (1) in Table 2. Robust standard errors clustered at the prefecture city level in parentheses * $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Compliance with ethical standards

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