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Art Assets and Subjective Wellbeing: Evidence from China

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Abstract: *The promotion of people's sense of gain and feeling of happiness is the highest goal of China in future economic and social development. Art asset is not only a financial asset for individuals and families but also a way to enhance happiness. By using the ordered probit model and Propensity Matching (PSM) Methods, it explores the impact of art asset allocation on personal and subjective wellbeing. The study finds that family art asset can effectively improve personal well-being and the impact of different groups of art asset allocation on well-being has certain heterogeneity because of different income, education level and so on.*

Key words: *Art assets; Subjective wellbeing; Influence mechanism; Ordered probit model*

Introduction

With the continuous development of China's social economy and the great enrichment of material products, people began to pursue more social and psychological needs, such as looking forward to a richer spiritual and cultural life. Artworks bear the full emotion and rich value connotation of the creator, meet the social-spiritual aesthetic needs of the viewers, owners and other relevant participants and gradually become the standard asset allocation of people's happy life. As an important way for people to participate in a higher level of cultural life and perceive happiness, family art asset is an important emotional expression window and carrier to make people's happiness more substantial, secure and sustainable. As a combination of tangible and intangible assets, material and spiritual properties, fine works of art have gradually become one of the options for the asset allocation of the public, especially for high net worth people, while meeting people's aesthetic needs and enriching their spiritual life.

Personal or family art is not only a way of an asset but also will have some emotional impact based on the particularity. However, there is less discussion about the relationship between art assets and subjective wellbeing in China presently. In Western countries, literature studies have pointed out that the intrinsic value of works of art is closely related to subjective wellbeing. Based on this, this paper uses CFPS household survey data to examine the impact of art asset allocation on subjective wellbeing. According to the existing literature, our work is mainly reflected in the following aspects: First, this article should be the first attempt to discuss the well-being effect of art asset allocation in China, and it will construct virtual variables and value variables of art assets to find the impact on household well-being; The second is to carefully examine the differences of artistic assets on the well-being of different groups, such as urban and rural residents, those with income inequality and educational level differences; The third is to use propensity score matching (PSM) to overcome self-selection.

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We will first comb the existing literature and make a literature review; Then the empirical design and analysis of measurement results are carried out; The third part is the well-being of the mechanism of theoretical interpretation and the results of measurement; The fourth part examines the impact of art asset on the heterogeneity of different groups; The last part concludes and recommends, but also points out the need and direction of future research.

Literature Review

Art is a real physical asset, and its allocation can obtain spiritual benefits. As early as the 20th century, there have been studies on the rate of return on works of art, and artworks are actually consumer goods and financial assets (Stein, 1977). In recent years, works of art have begun to be regarded as an important asset by domestic academia. Generally recognized by market, art assets have relatively good liquidity, be traded many times, and have relatively stable market value. People gradually began to tend to regard art as a part of the portfolio of enterprises or families, and the allocation of art assets began to enter into the public's vision (Daykin, Orme, Evans, & et al., 2008).

Many countries have conducted a series of studies on the spiritual benefits of art consumption, participation, investment, collection or asset allocation. The allocation of art assets covers the return requirement of maintaining and increasing the value of assets and the psychic return of pursuing spiritual enjoyment, which is the deep-seated and long-term participation in art activities.

Art participation and physical health

There is evidence of the relationship between art and longevity and between art and health (Cohen, 2009; Daykin, Orme, Evans, & et al., 2008). Relevant researchers have found evidence of a positive impact of performing arts practice by exploring the impact of performing arts on the health and well-being of young people in non-clinical settings. To assess the impact of participatory art projects on patients with mental health problems, Koonlaan et al. (2000) conducted a 14-year longitudinal study investigating the impact of participation in various cultural activities or visits to cultural institutions. The study found that people who rarely went to the cinema, concerts, museums or art exhibitions had a higher death rate than those who regularly went to the cinema etc. Lally (2009) conducted a qualitative evaluation of participatory artistic initiatives based on singing, which showed a positive impact on participants' physical and social well-being and creative activities.

Art participation or asset allocation and spiritual return

A. Art participation and spiritual return

McCarthy (2001) divided artistic benefits into community benefits, economic benefits, cognitive benefits and intrinsic benefits, thinking that these spiritual benefits (such as pleasure, expanding empathy and establishing social connections) had been neglected. However, these intrinsic benefits seemed to be most closely related to subjective wellbeing.

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Michalos (2005) studied the relationship between leisure activities and life satisfaction and found that art had a very limited impact on subjective well-being, which increased the explanatory power of regression by one percentage point. However, this is based on a sample that has taken a positive approach to art. Michalos and Kahlke (2010) examined the links between drama and life satisfaction, as well as the weak correlation between the frequency of artistic contact and satisfaction with the quality of life. Grossi et al. (2012) found a strong association between cultural access and mental health in the Italian sample. The effect of artistic participation on well-being is based on previous studies, especially Ateca-Amestoy (2008). Wheatley and Bickerton (2017) studied the four kinds of subjective wellbeing that art brings to people: overall happiness, life satisfaction, leisure satisfaction, and job satisfaction. The higher the frequency of participating in art activities, the higher the subjective wellbeing.

B. Art asset and social capital

Jing Song et al. (2016) divides cultural consumption into high-level (e.g. Calligraphy/art) and popular culture consumption (e.g. Film).Obviously, art consumption is a high-level category of cultural consumption. The results of the study on the relationship between social stratification and art consumption show that families with rich artistic resources but moderate economic capacity use art as an alternative strategy to maintain and enhance their position in the stratum structure (Dimaggio & Useem, 1978). Among the middle and upper stratums, special attention is paid to the inheritance of the artistic assets in the descendants of the family, which transforms part of the economic capital into artistic capital, and the children of future generations upgrade their economic capital through artistic capital.

Art consumption expresses, consolidates and continues the social identity, and art assets are the symbol of stratum differences. Middle-class blacks regard art as an economic asset, measure the investment potential of buying art and take it as a source of wealth that can be spread across generations (Banks, 2010). As to the negative impact of globalization, African art is regarded as a common property by African people and farmers who believe that art ensures the survival and continuation of social lifestyles, traditions and cultures. They firmly believe that traditional art reflects the socio-economic status and political will of community farmers that are the traditional producers of all raw materials in society. Farmers are the traditional producers of all the raw materials of society, as well as the producers of traditional African art (Na'Allah, 2018).Community art can destroy the exclusive stratum structure, but also make it continue (Khan, 2015). In Maslow's hierarchical demand theory, art consumption is one of the main ways of self-realization stage. Social stratum and demand level have the characteristics of matching each other (Samli, 2013).

C. Art and subjective well-being

Wheatley and Bickerton (2017) and Hand (2017) provide evidence on the relationship between art and subjective well-being. However, no monetary valuation of the non-market benefits of art assets has been obtained. Salvador del Saz-Salazar et al. (2017) evaluated the contemporary art archives and collections of Kunka Academy of Fine Arts (Spain) ,using the Life Satisfaction Assessment (LSA), to accurately measure the non-market value of art assets, so as to provide information for cost-benefit analysis, and life satisfaction is one of the measurement dimensions of happiness (Stein, 1977).

At present, the research on the well-being of art asset allocation is still in its infancy in China, and it is more

important to mention its spiritual benefits when analyzing works of art.The happiness that works of art can bring to people needs to be backed by a very complex cultural and educational system engineering, and its appearance and tracking need to be captured for a long time, and there are few relevant research documents in this regard. There have been studies on the impact of art participation on well-being and physical health in foreign countries, and more of them involve the analysis of the impact of long-term participation process in a broad sense. This paper quantitatively studies the impact of art asset allocation on happiness through micro-data, and expects to enrich the research field of emotional value of art asset allocation.

Materials and Methods

Data source

The data selected in this study are from the China Family Follow-up Survey (CFPS) 2010 database. The survey was organized and implemented by the China Social Science Survey Center of Peking University. An exploratory survey was conducted in Beijing, Shanghai and Guangdong in 2008. On this basis, the follow-up survey was conducted in three places in 2009. In 2010, the survey was conducted nationwide (excluding the provinces such as Tibet, Qinghai, Xinjiang, Ningxia, Inner Mongolia, Hainan, Hong Kong, Macao and Taiwan) were formally implemented to track and investigate data at three levels: individual, family and community. Considering the availability and consistency of art asset data, we use the cross-section data of CFPS 2010 to estimate the impact on personal well-being, and get the overall sample of 25943 after eliminating the missing data.

1225 individuals in the sample allocate art assets, accounting for 4.7% of the total. This is in line with the actual situation in China. Combining with the subjective well-being, we can see that the proportion of people who feel very happy in the group of art asset allocation is higher than that of people who do not, and the proportion of people who feel relatively happy is higher. The sum of the two is 72% in the group of people who allocate art assets, while the proportion of people who do not 64.77%.Compared with the people who have allocated art assets, it is nearly eight percentage points lower. Correspondingly, the proportion of individuals who feel relatively unhappy and very unhappy in the allocation of art assets is 4.9%, which is significantly lower than the proportion of 8.85% without the art. From this, the overall happiness of individuals with art asset allocation is higher than those without that.

Table 1 The subjective well-being based on art asset grouping

Well-being	Without Art Assets		With Art Assets		Full Sample	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Very unhappy	694	2.81	17	1.39	711	2.74
Less happy	1494	6.04	43	3.51	1537	5.92
averagely happy	65 19	26.37	283	23.10	6802	26.22
relatively happy	8560	34.63	459	37.47	9019	34.76
Very happy	7451	30.14	423	34.53	7874	30.35
Total	24718	100.00	1225	100.00	25943	100.00

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Model and variable definition

A. The basic model

In order to examine the impact of art asset allocation on subjective well-being more rigorously, we need to establish an econometric model for analysis. Subjective well-being reported by individuals is the explained variable of the model; art asset allocation is the core explanatory variable, in addition, we will control many other factors that may affect well-being. The baseline model is as follows:

$$\text{Happiness}_i = \alpha_0 + \alpha_1 \text{Lnartv}_i + \gamma X_i + \varepsilon_i \quad (1)$$

In the formula, Happiness_i represents subjective well-being, and the questionnaire is designed to answer on a scale of 1 to 5, indicating from very unhappy to very happy. Lnartv_i represents the logarithmic form of the market value of an art asset (or in the form of a dummy variable artd_i). The control variables X_i include gender, age and its square term, nationality, household registration, education level, political orientation, marital status, self-rated health, mood status, self-rated social status, family income, family consumption and so on. Considering that the subjective well-being in the questionnaire design belongs to the typical ordered discrete variables, we use the ordered probit method to estimate the above model, and then list the results of OLS and ordered logit methods.

B. Variable definition

• The subjective well-being

In the existing research, subjective well-being is generally used to measure personal happiness through subjective inquiry, and then assigned to get personal subjective well-being score. The CFPS data show that 65.12% of individuals overall considered themselves relatively happy or very happy, 26.22% of individuals felt happy, and 8.66% of individuals felt relatively unhappy or very unhappy in 2010. The average self-rated happiness (Happy) is 3.841 (happiness is 4 points), indicating that self-rated happiness is generally close to the "happiness" range.

• The art assets

Taking Art asset as the main explanatory variable, we sets two variable forms. One is a virtual variable, if the individual family allocates art assets, and then defined as 1, otherwise 0; the second is the logarithm form of the value of art assets, that is , which takes the logarithm form of the market value of art assets, so as to keep consistent with the household income, consumption expenditure and other variables. After the market value of art assets is logarithmic, the result of logarithmic value of the original zero value is still restored to zero value. The sample shows that the average value of the virtual variable of art asset allocation is 0.047, which shows that the proportion of art asset allocation in Chinese families is relatively low, and the family art asset allocation market needs further development.

• Control variable

The control variables show the factors that affect family and personal well-being except art assets, mainly

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including two levels of individual and family factor. As to the individual level, the specific control variables were gender, age, squared age, marriage, political orientation, years of education, nationality, household registration, mood status, self-rated health and self-rated social status. The specific control variables at the household level are relative income level, household consumption and logarithm of annual household income. Gender, age and its square, nationality, household registration, education level. According to the answers of the interviewees, the value of men is 1 and that of women is 0.The age is calculated according to the respondent's answer, and the corresponding square term is calculated according to the age. The account is to assign the agricultural account to 1, and the other types of account status are assigned to 0.The nationality assigns the Han nationality to 1 and the minority nationality to 0.The level of education is converted to 0, 6, 9, 12, 15, 16, 19 and 21 years of education according to the educational level in the CFPS questionnaire as follows: illiterate/semi-illiterate, primary school, junior middle school, senior high school/technical school, junior college, university, master and doctor.

Political orientation, marital status, self-rated health, mood status. The political orientation is to assign 1 to the members of the Communist Party of China and the Communist Youth League and 0 to the others. As to the marital status, the cohabitation and marriage status are set as 1, and the status of unmarried, divorced and widowed is set as 0.Personal health status is based on respondents' self-assessment, individual self-assessment from 1 to 5 is very healthy to very unhealthy, and health status gets worse step by step. Mood status is set according to how stressed the person felt in the past four weeks, from 1 almost every day to 5, with the order being better.

Household income, self-rated social status, household consumption. Household income is based on the logarithm of the absolute value of household income reported by oneself. But generally speaking, the reliability of absolute income in general surveys is relatively poor, and the summary of existing literature recognizes that the impact of relative income is more important than absolute income, so we also include information that can better reflect the relative economic situation of individuals. The questionnaire interviewed the local level of economic status of the sample individuals (1 is very low, 5 is very high), which we used as a measure of their relative economic status. Household consumption directly affects happiness, and logarithms are also taken in the measurement model. Table 2 shows the descriptive statistics for each variable.

Table 2 Descriptive statistics of variables

Variables	Variable definition and its assignment	Mean Value	Standard Deviation	Minimum Value	Maximum Value
happiness	Happiness, 5 points, 1 = very unhappy, 2 = relatively unhappy;3 = averagely happy ;4 = relatively happy, 5 = very happy	3.841	1.012	1	5
artd	With or without Art Assets, 0 = No, 1 = Yes	0.047	0.212	0	1
lnartv	Value of allocated art assets (logarithmic)	0.356	1.682	0	14.509
gender	0 = female, 1 = male	0.502	0.500	0	1
age	actual age	46.5 18	15.105	16	101
agesq	Square term of age	2392.053	1479.563	256	10201
mar	Married or not, 0 = unmarried, 1 = married	0.849	0.35 8	0	1

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nation	Ethnic groups, 0 = ethnic minorities, 1 = Han nationality	0.917	0.276	0	1
edu	Years of Education	6.608	4.908	0	21
party	Whether it is a member of the Communist Party or the Communist Youth League, 0 = No, 1 = Yes	0.213	0.409	0	1
hukou	Type of household registration, 0 = rural household registration, 1 = non-rural household registration	0.299	0.458	0	1
lnexp	Household consumption (logarithmic)	10.048	0.853	3.178	13.657
lninc	Household income (logarithmic)	10.084	1.026	1.609	14.529
inte	Have you had any stress in the past month? 0 = No, 1 = Yes	0.387	0.487	0	1
health	Self-rated health level, 5 points, 1 = very healthy..., 5 = very unhealthy	1.826	1.009	1	5
rinc	Self-rated relative income level, score of 5, 1 = very low,..., 5 = very high	2.222	0.972	1	5
status	Self-rated social status, score of 5, 1 = very low,..., 5 = very high	2.7 52	0.969	1	5

Note: (1) The statistical effective sample size of all variables is 25943;(2) The value of lnartv in the sample is assigned 0 if those without art assets;(3) The number of years of schooling for illiterates, primary school, junior middle school, senior high school and … is assigned as 0, 6, 9, 12, 15, 16, 19 and 21 respectively.

Results

The regression results of the basic model

The ordered probit method and Stata software are used to estimate the model. The regression results are shown in Table 3.

Regression results show that in the probit regression estimation with the dummy variable as the main explanatory variable, the dummy variable symbol is positive and significant at 10% level; In the Probit regression estimation with the numerical variable lnartv as the main explanatory variable, the regression is positive and significant at the 5% level. This shows that the allocation of family art assets helps to enhance the personal well-being of family members. In the part of control variables, the significance of all control variables except the political orientation is consistent in the two models, and is similar to the existing literatures. The regression coefficient of gender is negative and significant, indicating that women's happiness is significantly higher than men's and many domestic literatures have similar conclusions. The coefficient of age is negative and square term is positive, indicating that with the growth of age, happiness will decline at first, and then rise, showing a U-shaped relationship. The results showed that marriage, nationality, education level, household registration, mood status, social status and individual health status also had a significant role in promoting happiness. Household income and consumption are also very important variables. These findings are consistent with most of the existing literatures.

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Table 3 Full sample ordered probit estimation results

Explanatory variable	Explained variable: subjective well-being	
	Ordered Probit	Ordered Probit
artd	0.0604 *	
	(1.87)	
lnartv		0.00878 * *
		(2.14)
control variables	yes	yes
Sample size	25937	25937
Chi2 statistic	3593.4	3594.4
R2/quasi-R2	0.052	0.052
P value	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

Robustness tests

A. PSM testing

In the above quantitative analysis, happiness and art asset may be affected by some variables at the same time. Personal or family allocation of artistic assets is not an exogenous variable and it will be affected by some characteristics of residents and families and the overall socio-economic situation, and some of these variables will directly affect happiness. Therefore, the sample itself has the problem of self-selection. If we make direct comparison between individuals with art assets and those without, the estimate will be biased. At this time, the propensity score-matching method (PSM) becomes a good choice.PSM does not need to assume the function form, parameter constraints and error distribution in advance, and does not require the independent variables to be exogenous, so it has more advantages than other methods. Therefore, matching the individuals with art assets in the most similar families with the individuals without according to many observable characteristics, and making counterfactual comparison to obtain the net impact of with or without art assets on happiness, and solve the problem of sample self-selection.

In the process of estimation, the family residents who allocate art assets are taken as the experimental group, and the family individuals who do not allocate are taken as the control group. The matching results are shown in appendix A, and the results show that the matching effect is good. In order to check whether the matching result is a good balance of data, this paper also makes the corresponding balance test, the test results show that after matching, most of the standardization deviation is less than 5% (see appendix B), and the matching results balance the data well. Table 4 shows the results of the ATT (average processing effect) using the most common nearest neighbor matching method. The results show that the ATT is significant at the level of 5% in the three cases of 1:1, 1:2 and 1:4 matching, that is, the household residents with art assets are happier than those without that. The propensity score matching shows that the endogeneity is not serious, and the results obtained are robust.

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Table 4: Treatment effect of subjective well-being based on nearest neighbor matching (ATT)

Nearest neighbor matching	With artistic assets	Without artistic assets	Difference	Standard Error	T value
Unmatched	4.002	3.833	0.170	0.030	5.74
Neighbor = 1	4.002	3.915	0.087	0.040	2.19
Neighbor = 2	4.002	3.918	0.084	0.034	2.47
Neighbor = 4	4.002	3.928	0.075	0.031	2.41

In order to discuss the robustness of art asset to enhance well-being, this paper carries out an orderly probit regression based on the above sample. This data also shows the results of OLS and OLogit regression.The results show that the allocation of art assets to enhance personal happiness is robust.

B. OLS, OLogit estimation results

Based on ordered probit estimation, we also make OLS and ordered logit regression estimation. The results show that both the virtual variable artd and the value variable lnartv, as explanatory variables, are significant in the four regression of the two models, which verifies the robustness of art asset to enhance well-being. Table 5 shows the OLS and ordered logit estimated results of the full sample.

Table 5 OLS, OLogit estimates of full sample

Explanatory variable	Explained variable: subjective well-being			
	OLS model	Ordered Logit model	OLS model	Ordered Logit model
artd	0.0535 *	0.102 *		
	(1.92)	(1.88)		
lnartv			0.00727 * *	0.0146 * *
			(2.07)	(2.12)
control variables	yes	yes	yes	yes
constant	3.054 * * *		3.058 * * *	
	(31.91)		(31.92)	
Sample size	25937	25937	25937	25937
F-statistics	272.3		272.3	
Chi2 statistic		3468.6		3469.5
R2/quasi-R2	0.136	0.050	0.136	0.050
P value	0.000	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

C. Life satisfaction as a substitute variable of happiness

In the literature on well-being, life satisfaction is often used as a proxy variable for wellbeing. Thus, we make a re-examination from this practice. Taking the variable lnartv as an example, the role of art in improving happiness is still significant in the OLS, ordered Probit and ordered Logit models, which further verifies the robustness. Table 6 shows the regression results of life satisfaction of the whole sample.

Table 6 Estimation of life satisfaction in full sample

Explanatory variable	Value of Art Asset		
	OLS model	Ordered Probit model	Ordered Logit model
lnartv	0.00643*	0.00780*	0.0149**
	(1.85)	(1.94)	(2.17)
control variables	yes	yes	yes
constant	1.906***		
	(20.17)		
Sample size	25937	25937	25937
F-statistics	464.1		
Chi2 statistic		6042.0	6213.5
R2/ quasi -R2	0.212	0.0822	0.0845
P value	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

Discussion

The overall impact of art asset allocation on personal well-being is positive, which can be decomposed into direct and indirect effects of art asset allocation on well-being. In view of the data and various reasons, we describe and explain the direct effect theoretically, and use empirical tests to prove the indirect effect. Further examination found that its indirect impact could be manifested as the allocation of art assets through the impact of household income level and consumption level to enhance happiness.

The direct effect of art asset allocation on subjective well-being

Artworks are the formal expression of self-emotion to the real world, which condenses the artistic asset of human wisdom crystallization and meets the requirements of two major mental abilities of individuals: one is rationality, the other is sensibility. The allocation of art asset is a rational investment behavior. From the perspective of the formation process, it condenses human's perceptual understanding and profound understanding of society and life. High-quality artistic assets have assumed the social functions of cultural value orientation and cohesion for life and society, thus shaping a strong, continuous and emotional material force for the subjective well-being and value of life of family residents. They provide the corresponding cultural security and spiritual support, and then become an effective way to subjective well-being.

Indirect effect of art asset allocation on subjective well-being

A. Income channel

In order to test the impact of art asset allocation (lnartv_i or artd_i) on income, and then verify the channel of improving subjective well-being of art asset allocation, the model is established as follows:

$$\mathrm{lninc}_i = \beta_0 + \beta_1 \mathrm{lnartv}_i + \delta \mathrm{X}_i + \varepsilon_i \quad (2)$$

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In the formula, $\ln inc_i$ represents the logarithmic form of family income, which is consistent with the model of happiness analysis. $Lnartv_i$ represents the logarithmic form of the value of art assets (or the form of virtual variables $artd_i$). X_i contains many control variables that affect family income, including gender, age and its square items, nationality, household registration, education level, political orientation, marital status, self-rated health, mood status, self-rated social status, family expenditure, relative income level, etc. The regression result of Table 7 shows that both the dummy variable and the value variable are positive and significant in the income model. This shows that the allocation of art assets does promote income growth, thus helping to enhance subjective well-being. Next, we will look at the impact of consumption on the allocation of art assets.

B. Consumption channel

What is the impact of art asset on consumption? We establish model (3) to analyze:

$$\ln exp_i = \beta_0 + \beta_1 \ln artv_i + \delta X_i + \varepsilon_i \quad (3)$$

In the formula, the logarithmic form of family consumption $\ln exp_i$ is consistent with the model of analyzing happiness, and the logarithmic form of art asset value $\ln artv_i$ (or the form of virtual variable $artd_i$). X_i contains many control variables affecting family consumption level, including gender, age and its square term, nationality, household registration, education level, political orientation , marital status, self-rated health, mood status, self-rated social status, family income, relative income level, etc. The regression results of Table 7 show that both virtual variables and art asset value variables are positive and significant in the consumption model. This shows that the allocation of art assets does promote consumption growth, thus helping to enhance happiness.

In addition, we also try to analyze whether the allocation of art assets improves happiness by affecting relative income level and social status, and the results are not significant. The results are also shown in table 9.According to the relevant literature research, art assets have the effect of showing off, but in our test, they do not reflect the role of art assets in improving social status, which is due to the fact that on the one hand, the data survey is aimed at the general public, and the effect of showing off is particularly adequate among the high net worth people who hold art assets. The diversification of the public dilutes this ostentatious effect, so the relevant test does not reflect a significant effect.

Table 7 Channels of influence of art asset allocation on happiness

Variables	Consumption Level	Income Level	Relative income level	Social Status
The first group returns: whether to allocate art assets.				
artd	0.227 * *	0.115 * *	0.0332	-0.00365
	(11.602)	(4.885)	(1.332)	(-0.065)
F-statistics	1201.6	1219.9	617.5	
Chi2 statistic				6735.6
R2/quasi-R2	0.394	0.397	0.250	0.0991
P value	0.000	0.000	0.000	0.000
The second group: return to the value of art assets				

lnartv	0.0296 * *	0.0228 * *	0.00285	-0.00142
	(11.958)	(7.689)	(0.905)	(-0.200)
F-statistics	1202.6	1224.0	617.4	
Chi2 statistic				6735.6
R2/quasi-R2	0.394	0.39 8	0.250	0.0991
P value	0.000	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively;(3) For space reasons, estimates of control variables are not reported in the table.

Heterogeneity of Art Asset on Well-being of Different Groups

In order to further investigate the heterogeneous effects of art asset on different groups' well-being, we classified the whole sample, and the model setting was consistent with the whole sample. First, we want to examine whether the differences in income, perception and wealth level between urban and rural residents lead to diversity in the allocation of artistic assets. This is based on household registration. Secondly, we hope to distinguish the two groups with higher education level and lower education level. Thirdly, we hope to classify the low-income, middle-income and high-income groups. There is a third-class classification of the sample based on household income. In addition, it makes a detailed distinction between gender differences.

The result of cluster sample test is similar to that of the whole sample, and it also provides some new information. Based on the classification test of urban and rural areas, the results show that compared with urban residents, the positive impact of art asset allocation on rural residents is greater and more significant. The virtual variable and the logarithmic variable of artistic assets in the model are significant, while the urban samples are not significant in the model, and their coefficients are smaller. On the whole, the income level and wealth stock of urban residents are higher, so the happiness of family members due to the allocation of artistic assets will appear relatively smaller, and the improvement of their basic life will be smaller. However, rural residents have lower income and wealth levels averagely. When they allocate art assets for some reason, their sense of acquisition and satisfaction will be more sensitive, and then their subjective well-being will be bolstered.

Table 8 Subsample regression results based on registered residence

Variables	artd		lnartv	
	Rural	Urban	Rural	Urban
artd	0.198**	-0.008		
	(2.748)	(-0.094)		
lnartv			0.031**	0.001
			(3.234)	(0.075)
F-statistics	18176	7761	18176	7761
Chi2 statistic	2392.7	907.0	2395.7	906.9
R2/quasi-R2	0.0481	0.0459	0.0481	0.0459
P value	0.000	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

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In the test of different income groups, we found that in the low-income group, the fictitious variable artdi and the value variable of artistic asset lnartv were significant, but had no significant impact on the middle and high-income groups. As a middle-income class, the individual or family has certain ability of value-added and consumption of assets. The tolerance of expected material and spiritual benefits of artistic assets is relatively high. As for artistic assets, they do not play the role of smoothing income and consumption, so the positive effect of advancing happiness is suppressed. For high-income people, art assets themselves do not affect their basic consumption, so they do not have a significant positive impact on happiness. For low-income people, the impact of art assets on income is significant. On the one hand, their own income is lower, which leads to the positive effects of any asset will be more sensitive, and art assets can significantly boost happiness.

Table 9 Subsample regression results based on income level

Variables	With or without art			Value of art		
	Low-income	Middle-income	High-income	Low-income	Middle-income	High-income
artd	0.394**	0.044	0.028			
	(3.024)	(0.427)	(0.378)			
lnartv				0.063**	0.004	0.009
				(3.223)	(0.293)	(1.064)
F-statistics	8644	8647	8646	8644	8647	8646
Chi2 statistic	1204.0	821.3	897.6	1205.4	821.2	898.6
R2/quasi-R2	0.0485	0.0359	0.0421	0.0486	0.0358	0.0422
P value	0.000	0.000	0.000	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

In the results of sub-sample regression based on gender grouping, it was found that in both models, men's happiness in art asset allocation was significant; while women's happiness was not .This result should be related to the fact that the head of household is generally male. As the main economic decision-maker in the family, men have a comparative advantage over women in controlling expenditure and grasping leisure time when allocating artistic assets, so they are more sensitive when they feel the happiness brought by artistic assets.

Table 10 Subsample regression results based on gender grouping

Variables	With or without art		Value of art	
	Female	Male	Female	Male
artd	0.071	0.132*		
	(0.931)	(1.703)		
lnartv			0.008	0.021**
			(0.862)	(2.107)
F-statistics	12916	13021	12916	13021
Chi2 statistic	1610.6	1872.8	1610.4	1874.3
R2/quasi-R2	0.0467	0.0530	0.0467	0.0530
P value	0.000	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

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Similar results were found in the cluster tests of different educational levels. Among the samples with different levels, the people of junior and above are not significant in the model. As to those with lower than junior, the virtual variables artd and the value variable lnartv are very significant, indicating that the allocation of art assets has a significant positive impact on the well-being of the people with lower levels of education. The main reason for this is that the group with higher education level can have higher income level, their happiness perception ability covers a wider range, and the impact of art asset allocation on their overall happiness is relatively small. In addition, if the people with higher education level pay more attention to the material return of investment in art assets, their emotional value cannot be fully reflected. Although artistic asset allocation did not display significant positive effect on people with higher education level, in fact, compared with individuals with lower education level, individuals with higher may also have a large gap in asset allocation ability and aesthetic level under general circumstances, which is also reflected in their sense of well-being. There are great differences in the impact.

Table11 Subsample regression results based on education level

Variables	With or without art		Value of art	
	Junior and below	Above junior	Junior and below	Above junior
artd	0.137**	0.033		
	(2.105)	(0.328)		
lnartv			0.023**	0.003
			(2.594)	(0.304)
F-statistics	20661	5276	20661	5276
Chi2 statistic	2835.2	555.3	2837.5	555.3
R2/quasi-R2	0.0502	0.0424	0.0502	0.0424
P value	0.000	0.000	0.000	0.000

Note: (1) The value of t corresponding to the estimated coefficient is indicated in parentheses ;(2) *, * * and * * * mean statistically significant at 10%, 5% and 1%, respectively.

Conclusions

Based on CFPS 2010 micro-survey data, empirical research shows that art asset allocation has a significant role in promoting a sense of wellbeing, and the propensity score matching method still supports the above results after controlling for sample selection. When examining the heterogeneity of art asset allocation to different groups, it is further found that compared with urban persons, rural residents' art asset allocation has a more significant positive impact on subjective wellbeing. Rural residents have relatively fewer options in assets, and the increasing of subjective wellbeing is more significant among the people. This also further explains why individuals with lower income and lower education levels have a more significant impact on en hancing the level of happiness in the allocation of art assets.

Based on the above conclusions, the policy implications are as follows: the first is to further strengthen residents‘ art education, which is of positive significance to enhance personal well-being. At present, art education mainly focuses on public art education and art expertise for urban residents ‘children in childhood, cultivating better artistic literacy, laying a good foundation for the future allocation of artistic assets and the promotion of well-being. However, in rural areas, this foundation is still very weak and has not been introduced extensively. Attention should be paid to it. On the other hand, people's demand for artistic assets

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is generally obtained through galleries, art museums, art fairs, art e-commerce and other channels. However, some of the existing problems of these platforms are not clear about the promotion of happiness. If it can be nurtured for a long time from the perspective of residents' aesthetic education, it will have positive significance for the allocation of artistic assets and for the promotion of happiness.

The second is to cultivate and develop art consumption market. Nowadays, the consumption of "spirit and beauty" has become a new demand. The new middle class represented by 80's and 90's generation has grown into the main consumer group in China. Their knowledge structure, aesthetic education foundation and vision have been iterated and refreshed compared with their parents. Art consumption is constantly emerging and new consumption channels are opened. In addition, all cluster sample tests show that the positive effect of art asset allocation is more obvious when it is connected with lower income, but the positive effect is not significant for the high-income group. We should pay more attention to the art consumption market of low-income people, so that they can have more opportunities to contact the art market, have greater possibility to obtain lasting artistic edification, while alleviating the gap between the rich and the poor to enhance self-identity and sense of acquisition, to achieve the effect of raising the level of happiness.

Third, household income and expenditure can play a significant role in improving welfare. Therefore, while increasing people's income, we should also pay attention to guiding the direction of residents' consumption and asset allocation. The rapid development of digital science and technology and the almost non-hierarchical access mechanism of network platform have unprecedentedly expanded people's opportunities to participate in social and cultural events and ways to realize discourse practice, which greatly broadened people's ways of accepting, expressing, disseminating and identifying knowledge and values, and broke through the limitations of time and space. It has dispelled the rational depth of history, resulting in fragmentation, body and desire of people's aesthetic appeal and spiritual value, which is extremely unfavorable to the sustainable development of China's economy. It will further promote the income increase of the low-income stratum of the whole society, narrow the income gap, change the existing social structure, further play an important role in promoting national welfare in the allocation of artistic assets, rectify the outlook on life and values of residents, and guide the social allocation to a higher, farther and more sustainable development model.

Although we try our best to use the information provided by the data to examine the impact of art asset allocation on happiness, there are still some problems to be further explored: first, the impact of different art asset values on happiness. The value of artistic assets is related to the cost and benefit of asset allocators. Whether the value of artistic assets has different influence on happiness or not needs further detailed verification. Second, whether there are differences in the impact of different types of art assets on happiness in the art asset allocation market. Do different types of painting and calligraphy, oil painting and ceramics have different effects on people's happiness? Third, we should think about what factors affect the value of art assets, especially the emotional factors. Although there are literatures in china and abroad concerning this issue, the research on emotional value also needs further verification.

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Conflicts of Interest

The authors declare no conflict of interest.

Appendix A

Table A Logit regression results for whether to allocate art assets

Variables	Coefficient	Standard Error	T value	P value
gender	-0.0027	0.0610	-0.04	0.965
age	-0.0133	0.0126	-1.06	0.291
agesq	0.0000	0.0001	-0.12	0.904
mar	0.199 99	0.1025	1.95	0.051
nation	-0.0714	0.1118	-0.64	0.523
edu	-0.0340	0.0082	-4.17	0.000
party	0.0050	0.0752	0.07	0.947
hukou	0.4964	0.0730	6.80	0.000
lnexp	0.5215	0.0459	11.37	0.000
lninc	0.2283	0.0416	5.49	0.000
inte	0.0483	0.0626	0.77	0.440
health	-0.0150	0.0349	-0.43	0.667
rinc	0.0397	0.0357	1.11	0.267
status	0.0053	0.0360	0.15	0.883
Constant	-10.2309	0.5116	-20.00	0.000

Appendix B

Table B Mean Test before and after Sample Matching

Explanatory variable	Sample	With artistic assets.	without artistic assets	Deviation ratio (%)	Percentage decrease in absolute value of deviation(%)	T value	P value
gender	Unmatched	0.4898	0.50 26	-2.6		-0.88	0.381
	Matching	0.4902	0.47 14	3.8	-46.4	0.93	0.352
age	Unmatched	43.5800	46.65/60	-20.9		-6.96	0.000
	Matching	43.59 50	44.0180	-2.9	86.2	-0.73	0.465
agesq	Unmatched	2105.2	2405.4	-21		-6.94	0.000
	Matching	2106.4	2142.2	-2.5	88.1	-0.65	0.516
mar	Unmatched	0.8776	0.8472	8.8		2.90	0.004
	Matching	0.8775	0.8856	-2.4	73.1	-0.63	0.532

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nation	Unmatched	0.92 16	0.9166	1.8		0.62	0.537
	Matching	0.92 16	0.92 48	-1.2	34.5	-0.30	0.762
edu	Unmatched	7.73 63	6.55/33	23.4		8.25	0.000
	Matching	7.7304	7.7 745	-0.9	96.3	-0.21	0.830
party	Unmatched	0.2620	0.2106	12.1		4.29	0.000
	Matching	0.2614	0.2582	0.8	93.6	0.18	0.854
hukou	Unmatched	0.4433	0.29 21	31.7		11.31	0.000
	Matching	0.4428	0.4747	-6.7	78.9	-1.58	0.114
lnexp	Unmatched	10.53 20	10.0240	59.7		20.48	0.000
	Matching	10.52 90	10.5 180	1.3	97.9	0.30	0.762
lninc	Unmatched	10.5630	10.0620	44.9		16.81	0.000
	Matching	10.56 10	10.54 90	1.1	97.6	0.26	0.794
inte	Unmatched	0.3820	0.3871	-1		-0.36	0.721
	Matching	0.3824	0.3954	-2.7	-156.4	-0.66	0.507
health	Unmatched	1.71 51	1.83 16	-12		-3.94	0.000
	Matching	1.7157	1.7508	-3.6	69.8	-0.94	0.345
rinc	Unmatched	2.3543	2.2154	14.4		4.88	0.000
	Matching	2.35 38	2.3203	3.5	75.9	0.84	0.399
status	Unmatched	2.7894	2.74/96	4.1		1.40	0.161
	Matching	2.7892	2.7868	0.3	93.8	0.06	0.950

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