Research Article

The Influence of Individual Characteristics on Cultural Consumption from the Perspective of Complex Social Network

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In the era of the digital economy, social network as an important social capital has an important influence on individual consumption decision-making. This article uses the latest data from the China Household Finance Survey (CHFS) in 2017 to analyze the impact of personal characteristics on cultural consumption behavior under the influence of social networks from a theoretical and empirical perspective. Studies have shown that (1) social networks have a significant impact on cultural consumption; compared to gift money and social interaction, communication costs have a greater impact on cultural consumption; (2) communication costs have a greater impact on education consumption, entertainment consumption, and tourism consumption; (3) under the influence of social networks, individual characteristics have a significant impact on cultural consumption; (4) the higher the level of education, the easier it is for cultural consumption. There are intergenerational differences in cultural consumption expenditures of different age groups. It is easier for people to consume entertainment than the elderly.

1. Introduction

The Chinese economy is turning to a stage of high-quality development that focuses on the domestic big cycle and the international and domestic dual cycles promote each other. The 2020 “Government Work Report” clearly proposes and “firmly implements the strategy of expanding domestic demand,” highlighting the importance and urgency of domestic demand. In November 2020, the “Proposal of the Central Committee of the Communist Party of China on Formulating the Fourteenth Five-Year Plan for National Economic and Social Development and the Long-term Goals for 2035” (hereinafter referred to as the “Proposal”) for the first time put forward the concept of “High Quality of Life;” diversified cultural consumption is precisely the performance of the people’s high-quality life. The improvement of cultural consumption can not only improve the overall quality of life of residents but also force supply-side reforms and promote the transformation and upgrading of the industrial structure, thereby accelerating the construction of China’s domestic economic cycle.

According to development economists such as Chenery, a country’s per capita GDP reaches US$3,000; the cultural consumption expenditure accounts for about 23% of the total consumption expenditure. China’s per capita GDP in 2013 has exceeded 7,000 US dollars, but from 2013 to 2019, the proportion of per capita cultural consumption in total per capita consumption expenditure has been less than 12% (see Figure 1). It shows that the cultural consumption of Chinese residents is insufficient, and there is great potential for cultural consumption to improve. In addition, as shown in Figure 1, the percentage of per capita cultural consumption expenditure in per capita disposable income, the growth rate of residents’ daily consumption, and the growth rate of per capita cultural consumption have been in a state of fluctuation. It shows that other factors will also have an impact on residents’ cultural consumption expenditures, except income factors.
Social network analysis has gradually become an important method of economics research. A social network is a “relatively stable system of associations formed by the interaction between social individuals” [1]. It can bring benefits to the owner through the connection between individuals and has obvious social capital attributes. Social capital can effectively increase residents’ income [2], thereby increasing household consumption expenditure. Social network not only reflects the relationship between people but also is the best credit endorsement [3]. Social networks refer to “a relatively stable association system formed between social individuals because of interaction,” which can be used as an indicator to measure the level of household “relationship” [4]. The members of social networks are usually neighbors or have frequent contacts, which helps to alleviate various problems caused by information asymmetry [5], then establish a trust relationship, and deliver effective information. In addition, the social network is a relatively broad concept. The theoretical and empirical definitions are different. Therefore, the measurement of the social network is also different. Some use the number and type of relationships between businessmen as measurement indicators [6], some measure the popularity of social networks and the “neighbor trust index” [7], some discuss clan networks [8], and some scholars extend the relationship between relatives and friends to the number of gifts and gift change.

Cultural consumption is an important part of improving the quality of residents’ consumption and expanding domestic demand. There is a positive correlation between the expansion of tourism consumption and the improvement of residents’ cultural level, income growth, and the development of cultural industries [9]. The increase in consumer income has a limited effect on the expansion of cultural consumption demand [10]. The cultural consumption preferences of American residents are mainly affected by factors such as age and education [11]. The cultural consumption of college students is affected by personal characteristics, household economic status and education level, cultural consumption environment, and college students’ consumption concepts. Household culture and parents’ consumption concepts have a significant impact on the stratification of college students’ cultural consumption. The influencing factors of cultural consumption include individuals and collectives. In addition to paying attention to the symbolic value and hedonic value of cultural products, and their ability to create sensory and spiritual enjoyment, individual consumers also pay attention to the value of cultural products for sharing needs [12]. Therefore, this article believes that the study of cultural consumption should be a study under the condition of controlling personal characteristics. In addition, China is a typical society of human relations and will pay more attention to interpersonal relationships. Social networks are a typical feature of Chinese urban and rural society. Starting with social networks, it is a specific perspective for the analysis of the microfoundation of cultural consumption development.

In summary, considering the importance of social networks for cultural consumption. This research analyzes the impact of social networks on culture consumption, and under the influence of social networks, the impact of individual characteristics on cultural consumption explores the role of social networks in this impact. From theoretical and empirical analysis, we expect to explain the question of whether social networks can promote culture consumption and give targeted policy recommendations and satisfy the culture consumption needs of different households.

2. Theoretical Analysis and Hypothesis

2.1. Mechanism of Social Network on Culture Consumption. Duesenberry’s relative income hypothesis believes that consumers’ behaviors influence each other. If someone’s neighbor buys a new product that can improve the image of the household, he will be envious of the neighbor’s purchase behavior and will follow their neighbors to buy the same goods. The total utility obtained by consumers not only depends on their own consumption expenditures but also depends on the expenditures of other consumers, which means people have a tendency to compare [13]. The social
network will have an impact on consumers’ personal consumption.

For individual consumers, their consumption choices are transformed into maximizing utility under certain budget constraints. The maximum utility is expressed as [14]

$$\max \sum_{i=0}^{T} U_i(p_i, C_{it}, z_{it}).$$  \hspace{1cm} (1)

Consumers’ intertemporal budget constraints are expressed as

$$A_{it+1} = (1 + r)(A_{it} + Y_{it} - C_{it}).$$ \hspace{1cm} (2)

$C_{it} = \sum_{k=1}^{K} P^k_i \phi^k_{it}$, $P^k_i (k = 1 \ldots K)$ denotes the corresponding price of cultural products or services consumed by peers changes, the individual's cultural consumption of peers depends on the size of assets owned by the individual, $Y_{it}$ denotes individual income, and $r$ denotes interest rate. This article draws on the practice of Blundell et al. [15] and sets the general form of utility as

$$U_i(p_i, C_{it}, z_{it}) = V_i(V_i(p_i, C_{it}, z_{it}), Z^2_{it}) + G(z^3_{it}).$$ \hspace{1cm} (3)

$V_i(p_i, C_{it}, z_{it})$ denotes, in the same period, the choice between cultural consumption and savings. $U_i(p_i, C_{it}, z_{it})$ denotes, in different periods, an individual’s allocation of cultural consumption. $F_i(·)$ is a strictly increasing function, and $Z_{it} = (Z_{t1}, Z_{t2}, Z_{t3})$ is a condition vector reflecting the characteristics of cultural products or services. $C$ denotes the individual cultural consumption, and $\bar{C}$ denotes Companion’s cultural consumption. From formula (3), we could find the demand function of the same period or intertemporal distribution is independent of the function $F_i(·)$, so according to Roy’s identity,

$$\phi^k_{it} = \frac{\partial V_i(·)}{\partial C_{it}} \frac{\partial C_{it}}{\partial C_{it}}.$$

The following Euler equation can be obtained as

$$\frac{\partial U_i(t+1)}{\partial C_{it+1}} = (1 + r)^{1-1} \frac{\partial U_i(·)}{\partial C_{it}},$$

when $U_i(p_i, C_{it}, |C_{it}|_{n=1,n≠i} = F_i(V_i(p_i, C_{it}, |C_{it}|_{n=1,n≠i})), no separation in the same period. Assume that

$$\omega_i^j = a_i + a_i \ln C_i + \sum_k \eta_k \ln P^k_i.$$

(9)

For intertemporal asset allocation, individual cultural consumption is also affected by peers ($\theta ≠ 0$). That is, the social network influences cultural consumption:

$$\Delta \ln \frac{C_{it+1}}{a_{n+1}} = \gamma^{-1} \left( (\gamma - \delta) - \Delta \ln b_{i+1}(·) + \theta \Delta \ln \frac{C_{it}}{a_i} \right).$$

(10)

In summary, the demand function of individual cultural consumption and Euler’s equation are related to the cultural consumption of peers. Therefore, regardless of the same period or intertemporal period, cultural consumption has social network effects.

2.2. Theoretical Analysis and Hypothesis of Social Network on Culture Consumption. Urban agglomeration accelerates people’s interaction, learning, and accumulation of human capital, provides a communication platform for people with professional knowledge and high skills, and then promotes
the formation of social network capital [16]. Social networks refer to "a relatively stable association system formed between social individuals because of interaction," the more members, the more complex links, and the more communication with each other, the easier it is to form the social network capital, the higher the motivation for cultural consumption. And the word-of-mouth effect of cultural consumption could produce a positive spiral relationship. Social networks have three characteristics, namely, the scale of the household and friends network, the closeness of the household and friends network, and the supportability of the household and friends network. The gift money from families and friends could better reflect the characteristics of social networks. The popularity of mobile phones and the Internet have promoted the cultural consumption of urban residents. Therefore, we propose Hypothesis 1.

Hypothesis 1: social network has a significant positive impact on cultural consumption.

China is an urban-rural dualistic consumption structure. The household registration system has differentiated the social relationship networks, concepts, and behavioral norms of different household registration groups. As social capital, the social network has expanded the income gap between urban and rural households, which has different effects on the cultural consumption of households with different household registrations. Urban households have strong cultural consumption willingness and ability. Under the conditions of social interaction, household income has a positive impact on consumers' participation in the consumption of cultural products or services, and urban households are more active in participating in cultural consumption. Rural households have few resources, unstable employment, and heavy constraints on keeping promises [17], and social networks may have limited influence on their cultural consumption. Therefore, considering the urban-rural heterogeneity of the household, we propose Hypothesis 2.

Hypothesis 2: urban household registration has a higher probability of choosing cultural consumption than rural household registration.

From the perspective of social infection, consumers’ susceptibility first drops and then rises with aging; that is, consumers aged under 18 are highly susceptible, and consumers aged from 19 to 23 are second, consumers aged from 24 to 31 are the lowest among the ages, and consumers aged over 31 are the highest. Consumers over the age of 31 are more influential, and the probability of influencing their peers is about 51% [18]. Age is an important factor that affects personal consumption behavior. Age has a significant impact on cultural consumption. Age is an important factor affecting personal consumption behavior, but it usually has different effects on different types of cultural consumption. The age effect of total cultural consumption often presents a "hump characteristic," which is caused by the life characteristics of an individual and the life cycle of income [19]. In the early stages of life, individual consumption expenditure tends to increase with age, peak at the age of 45 to 55, and then decrease with age. Among the three categories of cultural consumption, education consumption also tends to present "hump characteristics;" residents have to pay for themselves and their children's education expenditures; as they grow older, their education pressure will increase until the children reach adulthood. At the age of 50 years old, household education consumption reaches its highest. After 50 years old, the household's education expenditure begins to decline. At this time, with the increase of age, the household's education expenditure decreases. Entertainment consumption is often more popular with young people; young people buy more film and television works than other groups. Therefore, we propose Hypothesis 3.

Hypothesis 3a: cultural consumption increases before the age of 50 and then decreases after the age of 50.
Hypothesis 3b: education consumption increases before the age of 50 and then decreases after the age of 50.
Hypothesis 3c: entertainment consumption decreases with age.

Education has a significant impact on cultural consumption. Consumers with a high level of education have stronger cognitive abilities than consumers with a low level of education and will be more likely to obtain higher income growth and job security in the future. It is easier for them to accept new consumption concepts and lifestyles [20]. There is a social interaction effect in the influence of education level on individual behavioral decision-making [21]. The social network has a clustering effect [22]. The higher the social network clustering coefficient, the faster the speed of social infection and the wider the range. The size of the personal network of consumers with a bachelor’s degree is twice that of a high school degree. The higher the level of education, the greater the possibility of mutual imitation between friends [23]. Consumers with different education levels have different social network attributes and scales, and the complexity of social networks has different effects on cultural consumption. Social interaction has a greater impact on highly educated consumers, making it easier to carry out development-centric consumption and enjoyment-centric consumption. Consumers with a bachelor’s degree and a junior college degree are next. Consumers below high school and technical secondary school are restricted by their social resources and their cultural consumption level is also limited. Therefore, we propose Hypothesis 4.

Hypothesis 4a: consumers with a high school and technical secondary school degree or below have a lower probability of choosing cultural consumption.
Hypothesis 4b: consumers with bachelor’s degrees and junior college degrees have a higher probability of choosing cultural consumption.
Hypothesis 4c: consumers with master’s degrees and Ph.D. degrees have a higher probability of choosing cultural consumption.

A theoretical model is shown in Figure 2.

3. Materials and Methods

3.1. Data Processing. The data used in this article comes from the China Household Finance Survey and Research Center of Southwestern University of Finance and Economics, which conducted a nationwide survey of Chinese household
finance in 2017, referred to as CHFS2017. For more information about CHFS data, please refer to the relevant report issued by the China Household Finance Survey and Research Center. The sample covers 29 provinces (cities, autonomous regions) except Tibet, Hongkong, Macao, Xinjiang, and Inner Mongolia. The total sample is 40011; the main variables are selected according to the research objectives and the item settings of CHFS, including control variables that characterize social networks, cultural consumption, and cultural consumption, and cover characteristic variables at the household level.

Since the sample of household heads aged under 20 is very small, and people over 80 rarely carry cultural consumption, considering the balance of samples of various age groups, this article eliminates the data on household heads aged under 20 and over 80 years old. In addition, this paper also eliminates extreme data with zero cultural consumption and a negative logarithm of household total income. Finally, the samples of “Unable to judge,” “Missing,” “Inapplicable,” “Refusing to answer,” and others in the variables of social networks and culture consumption were eliminated, and 22454 valid samples were left.

3.2. Variable Selection and Measurement

3.2.1. Culture Consumption. This article selects cultural consumption as the main explanatory variable, takes the logarithm of the household’s annual cultural consumption to obtain cultural consumption variables, and then classifies cultural consumption to entertainment expenditure, education expenditure, and tourism expenditure. Because the proportions of these three parts are quite different, and education consumption tends to squeeze entertainment consumption and tourism expenditure, this article firstly starts from the overall perspective and studies the influence of social networks and then studies the different effects of social networks on different types of cultural consumption. Regressing these three variables as dependent variables could analyze the structure of household cultural consumption. It can be seen from Table 1.

3.2.2. Social Networks. This article selects three indicators of gift money income and expenditure, communication costs, and social interaction as the proxy variables of the social network. “Gift money” is the sum of gift money income and expenditure, which reflects an interactive process. Gift money expenditure is the household’s investment in and maintenance of the social network, and gift money income is the maintenance of the social network by other families; the sum of the two could reflect the scale, closeness, and supportability of the household’s social network. The gift money in this article comes from the CHFS questionnaire “Last year, your family gave out cash or noncash amounts to nonfamily members due to Spring Festival, Mid-Autumn Festival, etc.” “The amount of cash or noncash received during holidays and celebrations.”

In addition, in the era of the digital economy, communication between social network members is becoming more and more convenient, and communication expenditure could reflect the frequency and closeness of communication between social network members. Therefore, “communication cost” is another proxy variable of the household’s social network, and its data comes from “the household’s annual communication cost, network cost, and cable TV cost.” “Social interaction” reflects the positive situation of householders participating in company and community activities. Multiple variable proxy social network indicators could further verify the significance and robustness of the impact of social networks on cultural consumption.

3.2.3. Control Variables. Income and capital are important factors influencing consumption, so this article uses total household income and total household capital as control variables to avoid the endogenous problems caused by the lack of important variables in the model.

3.2.4. Independent Variables. Referring to studies such as Attanasio et al. [24] and Qin et al. [25], this article selects the household head’s gender, age, marital status, physical health, education, and household registration as control variables. The definition of variables and descriptive statistics are shown in Table 1. In addition, as cultural consumption is often greatly affected by leisure and retirees often have similar cultural consumption characteristics, this article sets the population over 60 years old as an age group.
### Table 1: Definition of variables and descriptive statistics.

| Variables          | Definition                                                                 | Mean     | Standard deviation | Min    | Max     |
|--------------------|---------------------------------------------------------------------------|----------|--------------------|--------|---------|
| Explained variables| Cultural consumption                                                      | 8.37181  | 1.768697           | 0      | 13.87378|
|                    | Entertainment consumption                                                 | 7.012664 | 1.352275           | 2.484907 | 13.30468|
|                    | Education consumption                                                     | 8.61945  | 1.355617           | 2.079442 | 13.30468|
|                    | Tourism consumption                                                       | 8.488156 | 1.317347           | 1.609438 | 13.81551|
| Social networks    | Communication cost                                                        | 7.644748 | 0.851387           | 3.583519 | 11.69525|
|                    | Gift money                                                                | 8.185994 | 1.229421           | 0       | 13.50285|
|                    | Social interaction                                                        | 0.257392 | 0.437207           | 0       | 1       |
| Household characteristics | Household size                                                      | 3.627193 | 1.56269            | 1       | 15      |
|                    | Household income                                                          | 11.11273 | 1.280413           | 0.04879 | 15.95532|
|                    | Household assets                                                          | 13.14457 | 1.668884           | 3.367296 | 17.97283|
| Householder’s characteristics | Gender                                                            | 0.797809 | 0.401643           | 0       | 1       |
|                    | Age                                                                       | 50.1679  | 13.31098           | 21      | 80      |
|                    | Education                                                                 | 3.896682 | 1.7731             | 1       | 9       |
|                    | Marriage                                                                   | 0.891008 | 0.311636           | 0       | 1       |
|                    | Health                                                                    | 2.459801 | 0.95662            | 1       | 5       |
|                    | Household registration                                                    | 0.244055 | 0.429535           | 0       | 1       |
|                    | Age groups                                                                 | 2.396811 | 1.235731           | 0       | 4       |
|                    | Education groups                                                          | 0.251984 | 0.472996           | 0       | 2       |

#### 3.3. Common Method.**This article uses the OLS model for regression analysis. The models are set as follows.**

Model I is used to analyze the effect of social networks on cultural consumption, namely, Hypothesis 1. The specific regression equation is as follows:

\[
C_i = \alpha + \gamma \cdot \text{social networks}_i + \beta \cdot \text{controls}_i + \varepsilon_i, \tag{11}
\]

where \( i \) represents households. \( C_i \) denotes household cultural consumption behavior, including total cultural consumption, entertainment consumption, education consumption, and tourism consumption. social networks\(_i\) is independent variables, which represents the social network status of the household, including "Gift money," communication cost, and social interaction. \( \text{controls}_i \) is control variables, including total household income and total household assets. \( \alpha \) represents a constant, \( \gamma \) represents the coefficient of social networks\(_i\), \( \beta \) represents the coefficient of \( \text{controls}_i \), and \( \varepsilon_i \) is the residual.

Model II: it is used to test the effect of the householder’s individual characteristics on the household cultural consumption under the influence of social networks, that is, to verify Hypothesis 2–Hypothesis 4. The regression equation is as follows:

\[
C_i = \alpha + \delta \cdot \text{individual}_i + \gamma \cdot \text{social networks}_i + \beta \cdot \text{controls}_i + \varepsilon_i, \tag{12}
\]

where \( \text{individual}_i \) is independent variables, denoting the householder’s individual characteristics, which contains gender, age, education level, marital status, health status, and household registration. social networks, and controls, are control variables. \( \delta \) represents the coefficient of individual.

#### 4. Results and Discussion

Based on the hypothesis, this article firstly makes an empirical test on the influence of social networks on household cultural consumption, that is, to verify Hypothesis 1. After H1 is successfully proved, we then test the influence of the householder’s personal characteristics on the household cultural consumption under the influence of the social network, namely, Hypothesis 2–Hypothesis 4.

##### 4.1. Effects of Social Networks on Cultural Consumption

The influence coefficients of communication expenses, gift money, and social interaction on cultural consumption are all positively significant at the level of 1%, which shows that cultural consumption increases as the degree of social network connection increases (Table 2). Therefore, Hypothesis 1 was proven.

In addition, we separate the social networks into three proxy variables: communication cost, gift money, and social interaction. As can be seen from Table 2, we find that the communication costs have the greatest impact on cultural consumption; for every 1% increase in communication cost, cultural consumption increases by 0.491%; cultural
Consumption is secondly affected by social interaction. The social interaction variable is a dummy variable, and its coefficient in the cultural consumption model is 0.135. So, given the same household income, household assets, communication cost, and gift money, the household cultural consumption of people who have provided voluntary service is 13.5% higher than that of people who have never provided it. The impact of gift money is the least; for every 1% increase in gift money, household cultural consumption increases by 0.0994%.

We separate cultural consumption into three categories: entertainment consumption, education consumption, and tourism consumption. The result of Table 2 shows that communication cost has the greatest impact on entertainment consumption, followed by education consumption, and has the least impact on tourism consumption. Gift money has the largest impact on tourism consumption, and the influence coefficient on entertainment consumption is the smallest. Compared with entertainment consumption and education consumption, tourism consumption is less affected by social interaction factors. Among the three proxy variables of social networks, communication cost has the greatest impact on cultural consumption and its classified consumption [26, 27].

### 4.2. Effects of Householder’s Individual Characteristics on Cultural Consumption under the Influence of Social Networks

The results of Table 3 show that household registration has a significant impact on cultural consumption. Urban households will carry more cultural consumption than rural households; the cultural consumption of rural households is 19.1% lower than that of urban households. Education consumption of rural households is 15.9% lower than that of urban households, and travel consumption of rural households is 50.5% lower than that of urban households. At a significant level of 10%, rural households’ entertainment consumption is 7.65% lower than that of urban households. It proves that Hypothesis 2 is valid.

As can be seen from Table 3, compared with the age group under 30, the cultural consumption of the 31–40 age group and the 41–50 age group is positively significant at the 1% level, and the regression coefficient of the 41–50 age group is larger. It shows that in people under 50 years old, the older the age group, the more cultural consumption. Compared with the age group under 30, the cultural consumption of the two oldest age groups is negatively significant. And the coefficient is smaller for seniors over 60, which shows that in people over 50, the older the age group, the less cultural consumption. This verifies Hypothesis 3a and shows that the age effect of cultural consumption does show a “hump characteristic.” In addition, Figure 3 shows the influence coefficients of the five age groups on cultural consumption. It can be seen that the age effect of education consumption shows a trend of first increasing and then decreasing; that is, early household education consumption increased with the age of the householder, and the later household education consumption decreased with the householder’s age, which verifies Hypothesis 3b. Cultural consumption and education consumption keep the same trend with age, and both have hump characteristics. This is mainly because educational consumption accounts for the largest proportion of cultural consumption. Among all age groups, the entertainment consumption of the older age group is lower than that of the younger age group, which validates Hypothesis 3c, indicating that entertainment consumption decreased with age. Furthermore, the regression results also show that the age group “over 60” will spend more on tourism compared to the “51–60 years old” group. For the elderly, the cognitive effect of social interaction could improve their quality of life.

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Compared with the high school and technical secondary school or below, the cultural consumption of the “undergraduate and junior college” education group ($\delta = 0.434$) and the “master and doctor” education group ($\delta = 0.736$) are positively significant at the 1% level. The result of Table 3 shows that the cultural consumption of high-level education
groups is greater than that of low-level education groups, and the cultural consumption of the “master and doctor” group is higher than that of the “undergraduate and college” group. In the same way, the expenditure on entertainment consumption, education consumption, and tourism consumption of the two high-level education groups is greater than that of the “high school and technical secondary school” group, and the three kinds of consumption of the “master and doctor” group are higher than the “undergraduate and college” group. This verifies Hypothesis 4. As the education level of the householder increases, household cultural consumption will increase.

4.3. Extended Discussion. Other personal characteristics also affect household cultural consumption (Table 3). When the householder is a female, at a significant level of 1%, cultural consumption is 13.1% lower, education consumption is 13.8% lower, and tourism consumption is 9.87% lower than that of male households. The gender of the household has no significant influence on entertainment consumption. As shown in Table 3, the household’s marital status has no significant impact on the total cultural consumption and tourism consumption, but at a significant level of 1%, the unmarried household produces more entertainment consumption and less education consumption than the married head. The health of households only has a significant impact on tourism consumption at the level of 5%. At a significant level of 1%, household size has a positive impact on household cultural consumption. For every 1% increase in household size, total household cultural consumption increases by 0.113%. But it has a negative impact on tourism consumption. For every 1% increase in household size, tourism consumption decreases by 0.106%.

Table 3: Impact of householder’s individual characteristics on cultural consumption under the influence of social networks.

|                     | Cultural consumption | Entertainment consumption | Education consumption | Tourism consumption |
|---------------------|----------------------|--------------------------|-----------------------|--------------------|
|                     | Model3   | Model4   | Model3 | Model4 | Model3   | Model4 | Model3 | Model4 | Model3 | Model4 |
| Communication costs | 0.491*** | 0.347*** | 0.590*** | 0.481*** | 0.209*** | 0.200*** | 0.194*** | 0.274*** |
|                     | (0.0162) | (0.0165) | (0.0177) | (0.0183) | (0.0176) | (0.0177) | (0.0209) | (0.0219) |
| Gift money          | 0.0994*** | 0.110*** | 0.0746*** | 0.0729*** | 0.0869*** | 0.0843*** | 0.144*** | 0.136*** |
|                     | (0.0106) | (0.0103) | (0.0115) | (0.0110) | (0.0113) | (0.0111) | (0.0131) | (0.0127) |
| Social interaction  | 0.135*** | 0.101*** | 0.167*** | 0.0933*** | 0.0922*** | 0.0394 | 0.144*** | 0.136*** |
|                     | (0.0273) | (0.0267) | (0.0266) | (0.0258) | (0.0294) | (0.0294) | (0.0299) | (0.0292) |
| Household income    | 0.0838*** | 0.0542*** | 0.0920*** | 0.0767*** | 0.0717*** | 0.0629*** | 0.199*** | 0.181*** |
|                     | (0.0119) | (0.0118) | (0.0134) | (0.0132) | (0.0117) | (0.0118) | (0.0164) | (0.0164) |
| Household assets    | 0.144*** | 0.133*** | 0.0895*** | 0.0967*** | 0.109*** | 0.0751*** | 0.230*** | 0.198*** |
|                     | (0.00913) | (0.00916) | (0.00996) | (0.00987) | (0.0100) | (0.0103) | (0.0119) | (0.0119) |
| Gender              | -0.131*** | -0.000493 | -0.138*** | -0.0987*** |
|                     | (0.0306) | (0.0303) | (0.0341) | (0.0337) |
| Marriage            | -0.0151 | -0.269*** | -0.178*** | -0.0591 |
|                     | (0.0425) | (0.0428) | (0.0521) | (0.0495) |
| Health              | -0.00239 | 0.00254 | 0.00606 | -0.0361*** |
|                     | (0.0131) | (0.0143) | (0.0138) | (0.0171) |
| Household registration | -0.191*** | -0.0765* | -0.159*** | -0.505*** |
|                     | (0.0318) | (0.0408) | (0.0313) | (0.0526) |
| Household size      | 0.113*** | 0.00745 | -0.0173* | -0.106*** |
|                     | (0.00887) | (0.0100) | (0.00997) | (0.0131) |
| 31~40               | 0.346*** | -0.180*** | 0.134** | -0.00263 |
|                     | (0.0527) | (0.0484) | (0.0616) | (0.0590) |
| 41~50               | 0.487*** | -0.402*** | 0.478*** | 0.0509 |
|                     | (0.0513) | (0.0482) | (0.0606) | (0.0585) |
| 51~60               | -0.0939* | -0.630*** | 0.172*** | 0.175*** |
|                     | (0.0536) | (0.0509) | (0.0655) | (0.0602) |
| Over 60             | -0.319*** | -0.909*** | 0.0195 | 0.255*** |
|                     | (0.0531) | (0.0496) | (0.0669) | (0.0595) |
| Undergraduate and junior college | 0.432*** | 0.177*** | 0.206*** | 0.323*** |
|                     | (0.0315) | (0.0296) | (0.0349) | (0.0331) |
| Master and doctor   | 0.732*** | 0.354*** | 0.429*** | 0.476*** |
|                     | (0.0914) | (0.0768) | (0.0970) | (0.0831) |
| Constant            | 1.009*** | 2.048*** | -0.559*** | 1.045*** |
|                     | (0.145) | (0.168) | (0.168) | (0.183) |
|                     | 4.085*** | 4.491*** | 0.178 | 0.501*** |
|                     | (0.146) | (0.180) | (0.202) | (0.224) |

Note. Standard errors are given in parentheses. *P < 0.1, **P < 0.05, and ***P < 0.01.
4.4. Robustness Discussion. This article uses Stata to test the correlation coefficient between the variables, as shown in Table 4. The correlation test results show that all correlation coefficients between each variable are less than 0.5, indicating that the correlation between the variables is low. At the same time, the variance inflation factor is used to test the multicollinearity problem, as shown in Table 5. It is found that the VIF value of the four models of cultural consumption, entertainment consumption, education consumption, and tourism consumption does not exceed 10, indicating that there is no multicollinearity.

4.5. Endogenous Discussion. The endogenous problem mainly comes from two aspects: omitted variables and two-way causality. In order to avoid the endogeneity caused by the omitted variables, this article uses three indicators of “Gift money,” “Communication costs,” and “Social interaction” to represent social network variables. To a certain extent, the robustness of the model is improved, but there may be a two-way causal relationship in this model; that is, while the communication cost impacts cultural consumption, it may also be affected by cultural consumption. In the era of the Internet, many kinds of cultural consumption are carried out online, so the greater the amount of cultural consumption and the richer the variety, the more Internet and TV fees need to be paid. In other words, cultural consumption generates communication costs. If this relationship exists, it will inevitably cause endogeneity, thereby reducing the robustness of the test results. Therefore, it is necessary to further discuss and analyze endogeneity.

In order to identify and eliminate endogeneity, it is necessary to find suitable instrumental variables for communication costs and then use the two-stage least squares method (2SLS) for further testing.

After trial and error, this article introduces the variable of “mobile phone type” as an instrumental variable for communication costs. The types of mobile phones are “no mobile phone,” “nonsmart phone,” and “smartphone.” “Smartphone” is set to variable 1 and other types are set to variable 0. Families with smartphones tend to incur more network expenses (communication costs), thereby having a stronger social network, which in turn affects cultural consumption. But at the same time, the residual’s phone type does not directly affect the cultural consumption of the household. Therefore, in theory, choosing this variable as an instrumental variable of communication costs meets the conditions of an effective instrumental variable.

Table 6 shows the results of the first stage regression of the instrumental variable. It shows that, in both cultural consumption and the three classification models, the regression coefficient of the instrumental variable (mobile phone type) is positive, and the regression coefficient is significant at the 1% statistical level, which indicates that the instrumental variable has good explanatory power for the endogenous explanatory variable and meets the conditions of relevance. The F-value in the four models is 391, 209, 229, and 163, which are all significantly higher than the empirical cut point of 10. Therefore, we can directly reject the null hypothesis that the variable “mobile phone type” is a weak instrumental variable of communication costs.

From the statistical results of the second stage in Table 7, after introducing instrumental variables to overcome the endogeneity of communication costs, the coefficients of communication costs on household cultural consumption, entertainment consumption, education consumption, and tourism consumption are still positive, and all have passed the significance test at the 1% statistical level.

Above all, communication costs indeed significantly affect household cultural consumption (and its classification). At the same time, compared with the previous
Table 4: Correlation coefficient between variables.

| Variables          | Communication cost | Gift money | Social interaction | Household income | Household assets | Gender | Marriage | Health | Hukou | Household size | Age groups | Education groups |
|--------------------|--------------------|------------|-------------------|------------------|------------------|--------|----------|--------|-------|---------------|------------|-----------------|
| Communication cost | 1                  |            |                   |                  |                  |        |          |        |       |               |            |                 |
| Gift money         | 0.2623             | 1          |                   |                  |                  |        |          |        |       |               |            |                 |
| Social interaction | 0.1099             | 0.1138     | 1                 |                  |                  |        |          |        |       |               |            |                 |
| Household income   | 0.3448             | 0.3223     | 0.1454            | 1                |                  |        |          |        |       |               |            |                 |
| Household assets   | 0.3679             | 0.3217     | 0.1702            | 0.497            | 1                |        |          |        |       |               |            |                 |
| Gender             | 0.0129             | 0.0041     | -0.064            | -0.0053          | -0.0279          | 1      |          |        |       |               |            |                 |
| Marriage           | 0.1042             | 0.0705     | -0.053            | 0.1001           | 0.095            | 0.301  | 1        |        |       |               |            |                 |
| Health             | -0.1702            | -0.1233    | -0.0722           | -0.1704          | -0.2171          | -0.028 | -0.0268 | 1      |       |               |            |                 |
| Hukou              | -0.1751            | -0.1388    | -0.1394           | -0.2655          | -0.3093          | 0.1595 | 0.0735  | 0.1444 | 1     |               |            |                 |
| Household size     | 0.161              | -0.0697    | -0.1198           | 0.0092           | -0.0904          | 0.179  | 0.2747  | 0.0717 | 0.3341 |               |            |                 |
| Age groups         | -0.2187            | -0.0489    | -0.0511           | -0.0505          | -0.0326          | -0.0336 | 0.0065  | 0.2464 | 0.0575 | -0.0453       | 1          |                 |
| Education groups   | 0.1968             | 0.1833     | 0.1987            | 0.3027           | 0.3021           | -0.0515 | -0.0459 | -0.1692 | -0.2729 | -0.2102       | -0.2763    | 1               |
Table 5: Variance inflation factor test.

| VIF | Cultural consumption | Entertainment consumption | Education consumption | Tourism consumption |
|-----|----------------------|---------------------------|-----------------------|--------------------|
| Household income | 1.58 | 1.49 | 1.72 | 1.51 |
| Household assets | 1.5 | 1.48 | 1.52 | 1.45 |
| Household size | 1.35 | 1.37 | 1.36 | 1.4 |
| Communication cost | 1.37 | 1.39 | 1.37 | 1.42 |
| Gift money | 1.2 | 1.22 | 1.2 | 1.14 |
| Social interaction | 1.07 | 1.05 | 1.09 | 1.04 |
| Gender | 1.13 | 1.11 | 1.14 | 1.08 |
| Marriage | 1.19 | 1.17 | 1.17 | 1.12 |
| Health | 1.14 | 1.12 | 1.16 | 1.1 |
| Household registration | 1.32 | 1.28 | 1.28 | 1.34 |
| Age groups | 1.34 | 1.35 | 1.31 | 1.35 |
| Education groups | 1.2 | 1.23 | 1.23 | 1.24 |
| Average VIF | 1.28 | 1.27 | 1.3 | 1.27 |

Table 6: First-stage regression of instrumental variable.

| Communication cost | Cultural consumption | Entertainment consumption | Education consumption | Tourism consumption |
|--------------------|----------------------|---------------------------|-----------------------|--------------------|
| Phone type | 0.343*** | (0.0174) | 0.357*** | (0.0263) | 0.311*** | (0.0225) | 0.350*** | (0.0329) |
| Gift money | 0.082**** | (0.0049) | 0.075** | (0.0065) | 0.101*** | (0.0063) | 0.062*** | (0.0073) |
| Social interaction | 0.044*** | (0.0120) | 0.041*** | (0.0148) | 0.039*** | (0.0153) | 0.031*** | (0.0165) |
| Household income | 0.086*** | (0.0063) | 0.083*** | (0.0088) | 0.074*** | (0.0072) | 0.092*** | (0.0108) |
| Household assets | 0.100*** | (0.0046) | 0.087*** | (0.0060) | 0.124*** | (0.0059) | 0.088*** | (0.0076) |
| Gender | −0.018 | (0.0140) | −0.025 | (0.0175) | −0.009 | (0.0181) | −0.010 | (0.0192) |
| Marriage | 0.019 | (0.0202) | 0.017 | (0.0250) | 0.020 | (0.0303) | −0.023 | (0.0297) |
| Health | −0.027*** | (0.0064) | −0.015* | (0.0084) | −0.025** | (0.0079) | −0.00696 | (0.0103) |
| Hukou | −0.161*** | (0.0160) | −0.11*** | (0.0260) | −0.163*** | (0.0185) | −0.109** | (0.0331) |
| Household size | 0.130*** | (0.0044) | 0.149*** | (0.0060) | 0.104*** | (0.0058) | 0.172*** | (0.0075) |
| 31~40 | −0.177*** | (0.0223) | −0.161*** | (0.0257) | −0.168*** | (0.0313) | −0.157*** | (0.0327) |
| 41~50 | −0.179*** | (0.0218) | −0.147*** | (0.0252) | −0.173*** | (0.0308) | −0.129*** | (0.0319) |
| 51~60 | −0.185*** | (0.0233) | −0.133*** | (0.0276) | −0.167*** | (0.0346) | −0.184*** | (0.0337) |
| Over 60 | −0.382*** | (0.0238) | −0.392*** | (0.0281) | −0.264*** | (0.0363) | −0.383*** | (0.0344) |
| Undergraduate and junior college | 0.057*** | (0.0138) | 0.054** | (0.0167) | 0.08188 | (0.0172) | 0.037*** | (0.0193) |
| Master and doctor | 0.102*** | (0.0347) | 0.117** | (0.0366) | 0.107835 | (0.0448) | 0.101*** | (0.0406) |
| Constant | 4.257*** | (0.0758) | 4.469*** | (0.1012) | 4.035*** | (0.0954) | 4.438*** | (0.1286) |
| N | 16386 | 8781 | 10385 | 6192 |
| R² | 0.2954 | 0.3046 | 0.2897 | 0.3207 |
| F-value | 391.34 | 209.61 | 229.76 | 163.95 |

Note. Standard errors are given in parentheses. *P < 0.1, **P < 0.05, and ***P < 0.01.
method, new results are only different in terms of the size of the coefficients, and the sign of the coefficients has not changed.

5. Conclusions

This article studies the influence of individual characteristics on cultural consumption from the perspective of social networks. The article first theoretically analyzes the social network effect of cultural consumption under the life-cycle framework, then proposes hypotheses, and conducts empirical tests. The empirical results show that social network has a significant impact on cultural consumption. In addition, compared to gift money and social interaction, communication has a greater impact on cultural consumption. At the same time, we also find that different social network variables have different effects on different cultural consumption, communication has the greatest impact on education consumption, entertainment consumption, and tourism consumption, and communication has a greater effect on entertainment consumption than education consumption and tourism consumption. Under the influence of social networks, individual characteristics have a significant impact on cultural consumption. Compared with rural households, urban households make more cultural consumption. The higher the educational level, the easier it is; the higher the degree, the easier it is to carry out cultural consumption activities; individuals with postgraduate and Ph.D. degrees have the highest cultural consumption expenditures. Different age groups have different perceptions of cultural consumption expenditures called intergenerational differences; the younger people are more likely to

Table 7: Second-stage regression of instrumental variables.

|                          | Cultural consumption | Entertainment consumption | Education consumption | Tourism consumption |
|--------------------------|----------------------|--------------------------|-----------------------|--------------------|
| Communication cost       | 1.203*** (0.104)     | 1.065*** (0.125)         | 0.502*** (0.125)      | 0.880*** (0.179)   |
| Gift money               | 0.0366*** (0.0141)   | 0.0272* (0.0155)         | 0.0529*** (0.0173)    | 0.0979*** (0.0177) |
| Social interaction       | 0.0479 (0.0295)      | 0.0615** (0.0278)        | 0.0227 (0.0303)       | -0.0250 (0.0311)  |
| Household income         | -0.0258 (0.0159)     | 0.0256 (0.0182)          | 0.0392** (0.0163)     | 0.121*** (0.0249) |
| Household assets         | 0.0378** (0.0151)    | 0.0408** (0.0160)        | 0.0340* (0.0200)      | 0.141*** (0.0209) |
| Gender                   | -0.110*** (0.0331)   | 0.0184 (0.0323)          | -0.134*** (0.0341)    | -0.0906** (0.0366) |
| Marriage                 | -0.0406 (0.0459)     | -0.282*** (0.0470)       | 0.170*** (0.0575)     | 0.0714             |
| Health                   | 0.0265* (0.0146)     | 0.0141 (0.0156)          | 0.0160 (0.0148)       | -0.0296 (0.0192)  |
| Hukou                    | -0.0130 (0.0404)     | 0.0153 (0.0501)          | -0.0993** (0.0405)    | -0.412*** (0.0674) |
| Household size           | 0.00979 (0.0157)     | -0.0774*** (0.0211)      | -0.0462*** (0.0160)   | -0.209*** (0.0341) |
| 31~40                    | 0.499*** (0.0597)    | -0.0817 (0.0513)         | 0.186*** (0.0634)     | 0.0928             |
| 41~50                    | 0.645*** (0.0584)    | -0.313*** (0.0516)       | 0.532*** (0.0631)     | 0.129** (0.0650)  |
| 51~60                    | 0.101 (0.0624)       | -0.534*** (0.0559)       | 0.239*** (0.0713)     | 0.294*** (0.0727) |
| Over 60                  | 0.108 (0.0768)       | -0.614*** (0.0809)       | 0.132 (0.0840)        | 0.535*** (0.103)  |
| Undergraduate and junior college | 0.376*** (0.0346) | 0.141*** (0.0314) | 0.200*** (0.0344) | 0.296*** (0.0350) |
| Master and doctor        | 0.657*** (0.0990)    | 0.289*** (0.0748)        | 0.403*** (0.0965)     | 0.418*** (0.0808) |
| Constant                 | -1.685*** (0.482)    | -1.658*** (0.605)        | 3.238*** (0.554)      | -2.297*** (0.865) |
| N                        | 16386                | 8781                     | 10385                 | 6192               |
| R²                       | 0.087                | 0.202                    | 0.102                 | 0.194              |

Note. Standard errors are given in parentheses. * P < 0.1, ** P < 0.05, and *** P < 0.01.
engage in entertainment consumption than the elderly. The influence of other individual characteristics on cultural consumption is still significant. Gender has a significant impact on cultural consumption. Men’s cultural consumption expenditure is higher; unmarried households produce more entertainment consumption than married households, and married households have more education consumption than unmarried households.

Although we have conducted an in-depth research on the relationship between social networks and culture consumption and the social network effect of the influence of individual characteristics on cultural consumption, this study has also some shortcomings. Firstly, this study selects cross-sectional sample data for analysis from an individual perspective, and it is difficult to obtain the dynamic process of variables. Secondly, due to the diversity and complexity of consumer behavior and social network and the availability of data, it is difficult to analyze the impact of the complexity of social networks on cultural consumption. In addition, this research mainly focuses on the moderating role of the social networks; future research could also conduct the other functions of social networks on culture consumption.

**Data Availability**

The data used in this article come from the China Household Finance Survey and Research Center of Southwestern University of Finance and Economics, which conducted a nationwide survey of Chinese household finance in 2017, referred to as CHFS2017 (https://chfs.swufe.edu.cn/datacenter/apply.html).

**Conflicts of Interest**

All authors declare that there are no conflicts of interest regarding the publication of this paper.

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