*Environment and Social Psychology (2025) Volume 11 Issue 3* ISSN: 2424-8975 (O)
doi: 10.59429/esp.v11i3.4682 2424-7979 (P)

**RESEARCH ARTICLE**

# Women's Education and Household Consumption Allocation: Evidence from a Cognitive Decision-Orientation Framework

**Yuanyuan Chen, Tae-hwan Rhee***

*Department of Economics, Sejong University, Seoul, South Korea*

*** Corresponding author:** Tae-hwan Rhee;thrhee@sejong.ac.kr

## ABSTRACT

Household consumption decisions are shaped not only by income constraints but also by cognitive orientation and decision framing. Drawing on educational psychology and behavioral decision theory, this study conceptualizes women's education as a cognitive reweighting mechanism that reshapes how households evaluate trade-offs between short-term necessities and long-term developmental investments. Rather than treating education solely as a source of human capital and earnings, we emphasize its role in influencing intertemporal evaluation, information processing, and perceived investment returns within family decision contexts.Using nationally representative data from the 2019 China Household Finance Survey (CHFS), we examine the association between married women's educational attainment and household consumption allocation. Each additional year of schooling is associated with a 3.7% increase in total household consumption. More importantly, the association is substantially stronger for enjoyment-oriented and education-related expenditures than for subsistence consumption, indicating a systematic shift in spending priorities rather than a proportional expansion of overall consumption.Mediation analyses show that women's income and formal household authority account for only a modest share of the overall association. This suggests that income gains and institutional roles function as supportive pathways rather than dominant mechanisms. The findings are consistent with a decision-orientation interpretation in which education strengthens future orientation and investment sensitivity in family economic behavior.By reframing women's education as a cognitive determinant of consumption structure rather than merely a driver of income, this study contributes to the integration of household economics and educational psychology, highlighting the behavioral foundations of consumption upgrading in developing institutional contexts.

***Keywords:*** Women's education; household consumption; decision orientation; cognitive capacity; consumption allocation; China Household Finance Survey

## 1. Introduction

This study is situated at the intersection of household economics and educational psychology, with education conceptualized as a cognitive and decision-orientation factor rather than a directly measured psychological construct.Education is traditionally examined within the framework of human capital theory, which emphasizes productivity and income returns[1,2]. However, education also produces durable cognitive and psychological changes that extend beyond labor market outcomes. Schooling influences how individuals

**ARTICLE INFO**
Received: 26 February 2026 | Accepted: 20 March 2026 | Available online: 31 March 2026

**CITATION**
Chen YY, Rhee TH. Women's Education and Household Consumption Allocation: Evidence from a Cognitive Decision-Orientation Framework. *Environment and Social Psychology* 2026; 11(3): 4682. doi:10.59429/esp.v11i3.4682

interpret information, evaluate risks, and form expectations about the future. These cognitive transformations may play a central role in household economic behavior.From a cognitive psychology perspective, education strengthens information-processing capacity. Education improves analytical reasoning and decision strategies[3]. Higher levels of formal education are associated with improved analytical reasoning and more structured decision strategies. Individuals with greater cognitive capacity are better able to compare alternatives, anticipate long-term consequences, and evaluate trade-offs. In the context of household consumption, such abilities may influence how resources are allocated across competing needs.Decision-making research further distinguishes between short-term intuitive choices and long-term reflective choices. Dual-process models suggest that reflective, deliberative thinking requires cognitive effort and is more likely to incorporate future consequences Kahneman suggests that reflective thinking requires cognitive effort[2]. Education is closely linked to the development of reflective thinking skills. More educated individuals are therefore more likely to adopt forward-looking consumption strategies rather than focus solely on immediate gratification.

This study proposes that women's education reshapes the cognitive decision frame through which households evaluate consumption trade-offs, leading to systematic differences in consumption allocation rather than proportional changes in consumption scale.Intertemporal choice theory provides additional insight. Studies show that individuals differ in their time discounting tendencies, meaning the extent to which they value present versus future outcomes. Frederick et al.[5] show that individuals differ in time discounting tendencies. Lower discount rates are associated with greater investment in education, health, and other future-oriented expenditures. Education itself has been found to correlate negatively with time discounting, suggesting that more educated individuals are more willing to delay consumption in favor of long-term benefits. This mechanism may help explain shifts from subsistence spending toward developmental consumption within households.Education may also shape intra-household dynamics through psychological empowerment. Bandura proposed the concept of self-efficacy—individuals' belief in their ability to influence outcomes—which affects behavioral engagement and persistence in decision contexts[4]. Higher educational attainment is often linked to stronger perceived competence and greater participation in decision-making processes. Within families, this may translate into increased bargaining power and influence over resource allocation. Collective models of household decision-making emphasize that consumption outcomes reflect negotiation between members rather than a single unified preference[7]. Education may therefore affect not only preferences but also the ability to assert those preferences.

Taken together, these perspectives suggest that women's education may influence household consumption through multiple psychological channels. It may enhance cognitive capacity, strengthen long-term orientation, and increase perceived decision authority. These mechanisms operate alongside income effects but are not reducible to them. In settings where families serve as primary providers of long-term security, such as in China's partially developed welfare system, cognitive and decision-related factors may be especially salient in shaping consumption allocation.

Building on educational psychology and behavioral decision-making theories, this study conceptualizes women's education as a factor that reshapes the cognitive decision frame underlying household consumption. Rather than operating through a single channel, education influences how households evaluate consumption trade-offs, distinguish short-term necessities from long-term investments, and assign priority to different expenditure categories. Cognitive capacity, time orientation, and perceived decision competence are viewed as interrelated components of this decision frame, while income and formal institutional roles function as supporting constraints. From this perspective, differences in consumption structure reflect not merely

changes in purchasing power, but systematic differences in how households interpret the meaning and future returns of consumption choices.

To integrate the psychological mechanisms discussed above, this study conceptualizes women's education as a factor that reshapes the cognitive decision frame underlying household consumption. Rather than operating through a single isolated pathway, education influences how households define consumption objectives, evaluate trade-offs between short-term needs and long-term returns, and prioritize different expenditure categories. Cognitive capacity, time orientation, and perceived decision competence are treated as interrelated components of this decision frame, while income and formal household roles function as contextual constraints. From this perspective, differences in household consumption structure reflect systematic differences in decision framing rather than proportional responses to income changes.In essence, this study argues that women's education functions as a cognitive reweighting mechanism that systematically alters how households evaluate consumption trade-offs between immediate necessity and long-term developmental returns.

To clarify the concept used in this study, cognitive reweighting refers to a decision process in which education systematically changes the relative importance assigned to different attributes of consumption choices. Specifically, education may increase the weight placed on delayed returns, investment value, and intergenerational benefits, while reducing the relative emphasis on immediate utility.This mechanism is conceptually related to behavioral economics frameworks such as intertemporal choice and mental accounting, but differs in emphasis. Intertemporal choice models primarily focus on discount rates over time, while mental accounting emphasizes how individuals categorize expenditures. Cognitive reweighting instead highlights how education reshapes the evaluation criteria applied to competing consumption options, thereby altering the allocation of household resources across categories.

# 2. Current Situation and Theoretical Background of Women's Education in China

## 2.1. Development and Remaining Gaps in Women's Education in China

Women's education in China has experienced profound change over the past century. This finding contributes to broader discussions on consumption inequality and household heterogeneity Attanasio and Pistaferri[19]. Early expansion of female schooling weakened traditional gender norms and increased women's access to social and economic participation. Over time, education became one of the most important channels through which women improved their status within both the labor market and the family.Aguiar and Bils[7].Recent official statistics show significant progress. According to the Statistical Monitoring Report of the Outline for the Development of Chinese Women (2011–2020) released by the National Bureau of Statistics of China in 2021, women now account for more than half of students in several levels of higher education. In 2020, the gross enrollment rate of higher education reached 54.4%, representing a substantial increase compared with 2010. Female students accounted for 50.9% of postgraduate enrollment and more than half of undergraduate enrollment in several categories.

However, progress at higher levels of education coexists with persistent structural inequality. Due to long-standing historical and regional disparities, women remain overrepresented among individuals with very low educational attainment. In 2018, women accounted for more than 70% of residents who had never attended school. This contrast reveals a dual structure. While many women benefit from expanded higher education, others still face limited access to formal schooling. Continued improvement in women's education therefore remains both necessary and socially significant.

Recent empirical studies have examined how women's education and bargaining power influence household expenditure patterns in developing economies, including Berniell et al.[8], Kang et al.[9], and Sun et al.[10]. These studies highlight the growing importance of gendered decision-making dynamics in shaping consumption allocation.

## 2.2. Education, Consumption, and Cognitive Foundations

The relationship between education and consumption has been discussed for centuries. Classical economists such as Adam Smith noted that education enhances productive capacity, which indirectly influences consumption. Keynes[11] later formalized consumption behavior through the consumption function and emphasized systematic determinants of spending. The permanent income hypothesis further emphasized lifetime income expectations as determinants of consumption smoothing Friedman developed the permanent income hypothesis[12]. Relative income considerations were also highlighted in early behavioral consumption theory Duesenberry proposed the relative income hypothesis[13].These early contributions primarily focused on income and macroeconomic mechanisms.

Human capital theory further strengthened this perspective. Schultz and Becker[14]. argued that education increases productivity and earnings by improving knowledge and skills. Schultz also pointed out that the broader value of education is often underestimated when only wage returns are considered. Although these theories clarified economic benefits, they did not fully explain how education shapes household decision processes.

Educational psychology provides additional insight. Education changes how individuals process information and evaluate alternatives. Cognition can be understood as the process by which individuals acquire, organize, and use knowledge. Formal schooling strengthens analytical reasoning and improves the ability to compare options. These cognitive improvements may influence daily decisions, including how families allocate consumption across different categories.

More educated individuals are generally better able to interpret complex information and anticipate consequences. They may also adopt more structured decision strategies. In household contexts, this can affect how resources are distributed between immediate needs and long-term goals. Education therefore influences not only income capacity, but also the way decisions are made.

## 2.3. Education, Time Orientation, and Consumption Choices

Time orientation is another important psychological dimension. Research on intertemporal choice shows that individuals differ in how they value present and future outcomes. Andreoni et al.[21] highlight heterogeneity in time preferences, and Laibson[10] further shows that present bias, as described in hyperbolic discounting models, can distort long-term planning. Lower time discounting is associated with stronger preferences for future benefits[5]. Individuals with lower discount rates are more willing to delay immediate gratification.

Education has been linked to lower time discounting. Empirical studies link financial literacy and time preferences to economic decision-making behavior Meier and Sprenger[14]. More educated individuals tend to value long-term returns more strongly than short-term gains. This tendency has direct implications for household consumption behavior. Subsistence consumption primarily satisfies immediate needs. Education-related and quality-enhancing expenditures, by contrast, generate benefits over a longer time horizon.

Women with higher educational attainment may therefore prioritize long-term investments, such as children's education and health expenditures. Such choices are not solely driven by higher income. They

may reflect stronger future orientation and greater awareness of long-term returns. In this sense, education shapes preferences as well as constraints.

### 2.4. Education, Self-Efficacy, and Intra-household Influence

Education may also influence household consumption through psychological empowerment. The concept of self-efficacy refers to individuals' belief in their ability to influence outcomes[4]. Self-efficacy affects persistence, engagement, and confidence in decision-making situations. Higher educational attainment is often associated with stronger perceived competence and greater confidence in judgment.

Household consumption decisions are rarely made by a single individual. Collective models of household behavior emphasize negotiation and interaction among members Lundberg and Pollak propose collective models[7].Differences in resources, information, and perceived authority can influence outcomes. Education may strengthen an individual's ability to articulate preferences and evaluate trade-offs during family discussions.

Even when formal decision authority is limited, cognitive advantages and higher self-confidence may still shape household outcomes through informal influence. Women with higher education may participate more actively in consumption decisions and may advocate for expenditures that align with long-term family goals. This influence does not necessarily require dominant authority. It can operate through persuasion, information, and negotiation.

### 2.5. Women's Education and Consumption Allocation under Institutional Constraints

Traditional consumption theory often assumes that households act as unified decision-making units. Within this framework, education increases consumption primarily by raising income and relaxing budget constraints. However, this assumption becomes less realistic in contexts where families must plan carefully for long-term security.

In China, public welfare systems remain incomplete in several areas. Families bear primary responsibility for education, healthcare, and old-age support. Consumption decisions therefore involve strategic allocation rather than automatic responses to income changes. Under such institutional conditions, psychological factors may play a stronger role.

Women's education may affect not only how much a household spends, but also how it distributes spending across categories. By enhancing cognitive capacity, strengthening long-term orientation, and increasing perceived decision competence, education can shift household priorities toward developmental and future-oriented expenditures. These mechanisms operate alongside income effects, but they are not reducible to them.

Building on this perspective, the present study examines how women's education differentiates between subsistence consumption and enjoyment- or education-related expenditures. This allocation-focused approach provides a more nuanced understanding of educational returns within household economic behavior and highlights the psychological foundations of consumption decisions.

## 3. Data Sources, Variables, and Descriptive Evidence

### 3.1. Data Source and Sample Construction

This study is based on data from the 2019 China Household Finance Survey (CHFS). The survey covers 29 provinces, 343 counties or districts, and 1,360 neighborhood or village committees across China. It adopts a stratified random sampling strategy and collects detailed information on household demographics, income,

consumption, assets, insurance participation, and employment status. The CHFS is widely used in studies of household economic behavior and provides reliable micro-level evidence for consumption-related research.

To ensure that the analyzed individuals are actively involved in household decision-making, the sample is restricted to married women aged between 20 and 65. The upper age limit reflects the fact that women within ten years after retirement in China often remain engaged in household economic activities. The lower limit corresponds to the minimum legal age of first marriage and is consistent with existing research focusing on women's family roles. After applying these restrictions, the final analytical sample retains substantial variation in education, income, and consumption behavior.

### 3.2. Main Variables and Behavioral Interpretation

The core dependent variable is household consumption expenditure. Total household consumption is measured as the logarithm of annual consumption reported in the CHFS, including food, housing, clothing, daily necessities, transportation and communication, entertainment, healthcare services, education, and medical expenditures.

To capture differences in consumption priorities, household consumption is further divided into subsistence consumption and enjoyment consumption, following existing classification practices. Subsistence consumption includes expenditures that mainly satisfy basic living needs, such as food, housing, clothing, daily necessities, and medical care. Enjoyment consumption includes transportation and communication, entertainment, healthcare services, and education. Education expenditure is also examined separately, as it reflects long-term and intergenerational investment decisions.

From an educational psychology perspective, this classification distinguishes between short-term necessity-oriented consumption and future-oriented or quality-enhancing consumption. Such a distinction allows the analysis to focus on consumption allocation rather than consumption scale.

The key explanatory variable is women's educational attainment. Education is measured in years of schooling converted from the original categorical classification in the CHFS. When more than one adult woman is present in a household, the highest educational level among them is used to represent women's education. This approach reflects the assumption that the most educated woman is more likely to influence household decision processes. In behavioral terms, years of schooling are treated as a stable proxy for cognitive capacity, information processing ability, and long-term orientation.

Control variables include women's age, employment status, and self-reported health status, as well as household size, dependency ratio, total household income, pension participation, medical insurance coverage, credit card ownership, housing ownership, spouse's education, and an urban–rural indicator. These variables capture individual, household, and regional characteristics that may influence consumption behavior.

Two mediating variables are used to explore potential pathways. Women's personal income captures economic capacity. Registered household headship is used to indicate women's formal economic authority within the household. This variable reflects an institutional designation rather than actual bargaining dominance and is therefore interpreted as a proxy for formal economic role rather than a direct measure of psychological decision power.

### 3.3. Descriptive Statistics

Table 1 reports descriptive statistics for the main variables. Substantial variation exists in household consumption, indicating heterogeneous consumption behavior across Chinese households. The average years of schooling for women is 10.518, which is below the level of high school completion. This suggests that, despite progress in higher education, overall educational attainment among adult women remains uneven.

Household size averages 3.765 persons. The mean self-reported health status is relatively high, reflecting improvements in living standards and health awareness. Importantly, the large dispersion in education and income provides sufficient variation for subsequent empirical analysis.

**Table 1.** Descriptive Statistics of Main Variables

| Variable | Obs. | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| ln Household Consumption | 47,495 | 10.981 | 0.856 | 7.08 | 18.949 |
| ln Subsistence Consumption | 47,495 | 10.636 | 0.769 | 6.777 | 14.484 |
| ln Enjoyment Consumption | 47,195 | 9.089 | 1.587 | 0 | 18.948 |
| ln Education Consumption | 37,765 | 8.039 | 1.98 | 0 | 18.948 |
| Women's Education (years) | 47,495 | 10.518 | 5.69 | 0 | 19 |
| Spouse's Education (years) | 31,726 | 8.851 | 4.405 | 0 | 19 |
| Household Size | 47,495 | 3.765 | 1.743 | 1 | 15 |
| Health Status | 47,495 | 2.327 | 0.744 | 1 | 3 |
| Dependency Ratio | 47,495 | 0.118 | 0.215 | 0 | 1 |
| Household Head (female) | 47,495 | 0.169 | 0.375 | 0 | 1 |
| ln Income (female) | 47,495 | 2.034 | 4.074 | 0 | 13.816 |

## 3.4. Education and Consumption Structure: Descriptive Patterns

**Table 2** presents annual average household consumption by women's educational level. A clear education gradient emerges. Total household consumption increases steadily with women's education and shows a pronounced jump at higher education levels.

Differences across consumption categories are also evident. Expenditures on basic items such as food, housing, clothing, and medical care vary relatively little across education groups. In contrast, expenditures on transportation and communication, education, culture, and entertainment increase sharply with women's educational attainment.From a behavioral perspective, these patterns are consistent with differences in time orientation and consumption priorities. Higher educational attainment is associated with greater emphasis on future-oriented and developmental expenditures, particularly education-related spending. This suggests that women's education is more strongly linked to consumption allocation than to proportional increases in subsistence consumption.

**Table 2.** Annual Average Household Consumption by Women's Education Level (Yuan)

| Women's Education (years) | Total Consumption | Food | Clothing | Housing | Medical & Health | Transport & Communication | Education, Culture & Entertainment |
|---|---|---|---|---|---|---|---|
| 0 | 73,166 | 19,280 | 1,480 | 6,582 | 10,245 | 7,791 | 22,135 |
| 6 | 95,097 | 21,575 | 1,707 | 6,912 | 9,921 | 10,394 | 38,051 |
| 9 | 77,798 | 26,408 | 2,264 | 8,365 | 9,942 | 15,079 | 6,965 |
| 12 | 95,593 | 30,525 | 2,899 | 10,235 | 9,395 | 19,527 | 10,456 |
| 16 | 127,818 | 34,723 | 4,304 | 13,872 | 9,292 | 30,858 | 18,002 |
| ≥18 | 149,333 | 31,856 | 3,380 | 11,595 | 10,274 | 23,529 | 53,378 |

The descriptive evidence suggests that women's education is closely associated with shifts in household consumption priorities. These patterns provide intuitive support for the subsequent regression and mediation

analyses and are consistent with educational psychology theories emphasizing cognition, time preference, and decision orientation.

# 4. Model and Analysis Results

## 4.1. Model Specification

This section examines how women's educational attainment is associated with household consumption and consumption allocation. The baseline model is specified as:

$$\ln C_i=\beta_0+\beta_1 FEDU_i+\beta_2 X_i+e_i \quad (1)$$

where, $\ln C_i$ is the dependent variable, representing the logarithm of the total consumption of household i in 2019; FED $U_i$ is the main independent variable of the analysis, representing the educational level of adult married women within household i ; $X_i$ are control variables, including age, the wage levels of the individual and their spouse, household size, health status, etc. $e_i$ is the error term.

Previously, two paths through which educational level affects consumption were proposed, namely the annual total income of women and women's decision-making status in economic activities. The annual total income of women themselves is mainly personal wage income. In the CHFS survey data, the head of household is defined as "the main bearer of the family's economic source". Here, this head of household variable is used to measure whether a woman is the main decision-maker in economic activities (head of household is 1, non-head of household is 0).

Mediation Framework (Supportive Pathways)

To explore potential pathways, two mediators are examined: women's personal income and women's registered household headship. The mediation models are:

$$Z_i=\gamma_0+\gamma_1 FEDU_i+\gamma_2 X_i+e_{i1} \quad (2)$$

$$C_i=\lambda_0+\lambda_1 FEDU_i+\lambda_2 \widehat{Z}_i+\lambda_3 X_i+e_{i2} \quad (3)$$

The stepwise regression approach is used. First, equation (1) is estimated. Second, equation (2) examines whether women's education predicts the mediator. Third, equation (3) adds the mediator to the consumption equation to evaluate whether the indirect pathway is statistically detectable.

It is important to clarify the behavioral meaning of the mediators. Women's income captures economic capacity and resource access. Registered household headship captures formal economic authority. It reflects an institutional designation rather than a direct measure of intra-household bargaining power. Therefore, this mediator is interpreted as a proxy for formal role, not a precise indicator of decision dominance.

When household headship is used as a mediator, it is a binary variable. Following Iacobucci (2012), equation (2) is estimated using logistic regression. Because coefficients in logistic and OLS models are not directly comparable, mediation is evaluated using the significance of component paths and confidence intervals .

## 4.2. Baseline Results: Education and Consumption Allocation

**Table 3** reports OLS estimates of equation (1). Women's education is positively associated with total household consumption. A one-year increase in women's schooling is linked to a 3.7% increase in total household consumption. This association is statistically strong. It also appears meaningful in magnitude.More importantly, the association differs across consumption categories. The estimated coefficient is smaller for subsistence consumption (0.033) and larger for enjoyment consumption (0.054).

Education expenditure shows an even larger association (0.057). This pattern supports the allocation-centered interpretation. Basic consumption is relatively rigid once household size and health needs are accounted for. The stronger association for enjoyment and education spending suggests a shift in household priorities.

From an educational psychology perspective, this heterogeneity is consistent with differences in time orientation and decision style. Education is often linked to stronger future orientation and improved capacity to evaluate long-term returns. This can lead households to allocate more resources to developmental and quality-enhancing consumption. Education-related spending fits this profile. It is future-oriented and intergenerational in nature.Health status, medical insurance, and credit card use also show expected associations. Better health is linked to higher enjoyment and education spending. Medical insurance is positively associated with consumption. Credit card ownership has a large coefficient, consistent with higher liquidity and easier spending capacity. These covariates help reduce confounding, but they do not replace causal identification.

**Table 3.** Baseline OLS Results: Women's Education and Household Consumption Outcomes

| Dependent variable (log) | (1) Total | (2) Daily | (3) Subsistence | (4) Enjoyment | (5) Education |
|---|---|---|---|---|---|
| Women's education (years) | 0.037*** (0.002) | 0.037*** (0.002) | 0.033*** (0.002) | 0.054*** (0.003) | 0.057*** (0.005) |
| Spouse's education (years) | 0.026*** (0.002) | 0.025*** (0.002) | 0.023*** (0.002) | 0.036*** (0.003) | 0.044*** (0.005) |
| Household size | 0.135*** (0.003) | 0.141*** (0.003) | 0.105*** (0.003) | 0.268*** (0.005) | 0.291*** (0.008) |
| Health status | 0.046*** (0.006) | 0.038*** (0.006) | 0.008 (0.006) | 0.168*** (0.010) | 0.109*** (0.017) |
| Dependency ratio | −0.171*** (0.029) | −0.157*** (0.029) | 0.023 (0.028) | −1.232*** (0.051) | −0.899*** (0.089) |
| Medical insurance | 0.129*** (0.008) | 0.133*** (0.008) | 0.126*** (0.008) | 0.177*** (0.015) | 0.205*** (0.024) |
| Credit card | 0.435*** (0.012) | 0.427*** (0.012) | 0.286*** (0.011) | 0.855*** (0.021) | 0.878*** (0.031) |
| Age | 0.002*** (0.000) | 0.002*** (0.000) | 0.003*** (0.000) | −0.003*** (0.001) | −0.002*** (0.001) |
| Female household head | 0.104*** (0.011) | 0.107*** (0.011) | 0.107*** (0.011) | 0.096*** (0.020) | 0.210*** (0.032) |
| ln Income (female) | 0.006*** (0.001) | 0.006*** (0.001) | 0.001 (0.001) | 0.017*** (0.002) | 0.023*** (0.004) |
| ln Income (spouse) | 0.002* (0.001) | 0.002 (0.001) | 0.001 (0.001) | 0.009*** (0.002) | 0.007** (0.003) |
| Constant | 9.559*** (0.035) | 9.406*** (0.035) | 9.470*** (0.033) | 6.802*** (0.061) | 5.311*** (0.099) |
| N | 31,711 | 31,711 | 31,711 | 31,534 | 24,342 |
| $R^2$ | 0.315 | 0.301 | 0.213 | 0.4 | 0.237 |

***Notes:** Standard errors in parentheses. *p<0.1, **p<0.05, **p<0.01.*

The heterogeneous effects across consumption categories suggest a change in the underlying decision process rather than a uniform income response. From a behavioral perspective, women's education appears to alter the decision rule applied to household consumption. Basic subsistence expenditures are evaluated

using a sufficiency-based criterion, where once minimum needs are met, additional education has limited marginal influence. In contrast, enjoyment and education-related expenditures are evaluated using an investment-oriented criterion, where expected future returns and quality-of-life improvements receive greater weight. As a result, higher educational attainment shifts the relative weighting of trade-offs between immediate utility and delayed benefits, leading to systematic reallocation toward long-term and developmental consumption.These results are consistent with a two-stage evaluation process in household consumption decisions. In the first stage, basic needs are assessed against sufficiency thresholds, limiting the marginal impact of education once minimum standards are met. In the second stage, discretionary expenditures are evaluated based on expected future returns and subjective quality improvements. Education appears to influence primarily this second evaluative stage, thereby shifting consumption allocation without proportionally increasing subsistence expenditure.

The stronger association between women's education and developmental consumption categories can be interpreted through three complementary mechanisms.First, education may reshape household preference structures. More educated women tend to place greater emphasis on long-term welfare, child development, and human capital investment. As a result, households may allocate relatively more resources toward education, culture, and quality-of-life expenditures rather than basic subsistence goods whose marginal utility is already saturated.Second, education may alter intra-household bargaining dynamics. Previous studies show that women with higher educational attainment often possess greater informational advantages and decision confidence in family discussions[6,7] Even without formal authority, this informational advantage may increase their influence over consumption decisions related to children's education, health, and long-term household welfare.Third, education is closely associated with stronger long-term investment orientation. Educational attainment is linked to lower time discounting and greater willingness to allocate resources to delayed-return investments[5,8] Expenditures on education and quality-enhancing services generate benefits over longer horizons, making them more sensitive to differences in time orientation than subsistence consumption.Together, these mechanisms suggest that women's education may influence not only the level of household consumption but also the decision criteria used to evaluate different types of expenditures.

### 4.3. Mediation Results: Supportive Pathways Rather Than Dominant Mechanisms

**Table 4** reports mediation results for total household consumption. Women's education significantly predicts women's income. A one-year increase in schooling is associated with a 15.7% increase in women's income. This is consistent with human capital logic. It is also consistent with educational psychology in a broader sense, because education can enhance skill acquisition, information processing, and problem-solving ability, which influence labor market outcomes.However, the indirect pathway through income explains only a small share of the overall association between education and consumption. Using the stepwise calculation, the indirect component is about 2% of the total effect. The pathway through registered household headship is also statistically detectable, but it explains about 1% of the total effect.These proportions are modest. This matters for interpretation. The results suggest that income and formal institutional roles are supportive pathways rather than dominant mechanisms. A behavioral explanation fits this pattern. Education may change consumption choices through cognitive and preference-related processes that are not fully captured by observed income or administrative role indicators. Examples include future orientation, the ability to evaluate long-term returns, and the tendency to allocate resources toward developmental goals.

**Table 4.** Mediation Analysis for Total Household Consumption

| | **Income pathway** | | | **Formal authority pathway** | |
|---|---|---|---|---|---|
| Dependent variable | (1) ln Total consumption | (2) ln Income (female) | (3) ln Total consumption | (5) Female household head | (6) ln Total consumption |
| Women's education (years) | 0.038*** (0.002) | 0.157*** (0.008) | 0.038*** (0.002) | 0.005*** (0.001) | 0.038*** (0.002) |
| Spouse's education (years) | 0.028*** (0.002) | −0.082*** (0.008) | 0.027*** (0.002) | 0.009*** (0.001) | 0.027*** (0.002) |
| ln Income (female) | | | 0.006*** (0.001) | | |
| Female household head | | | | | 0.106*** (0.011) |
| Controls | Yes | Yes | Yes | Yes | Yes |
| N | 31,711 | 31,711 | 31,711 | 31,711 | 31,711 |
| $R^2$ / Pseudo $R^2$ | 0.312 | 0.52 | 0.313 | 0.053 | 0.314 |

***Notes:** Standard errors in parentheses. *p<0.1, **p<0.05, **p<0.01.*

## 4.4. Mediation Results for Education Expenditure: A More Future-Oriented Outcome

Education expenditure is conceptually close to future-oriented allocation. It reflects long-term planning and intergenerational investment. **Table 5** reports mediation results with education expenditure as the dependent variable.Women's education shows both direct and indirect associations with education spending. The indirect pathway via women's income accounts for about 6% of the overall association. This share is larger than in the total consumption model. The result is psychologically plausible. Education spending is typically a planned expense. It requires future orientation and willingness to delay immediate consumption. Education can strengthen both.The pathway via registered household headship remains positive and statistically significant. Yet it remains modest in size. Again, this supports a cautious interpretation. Formal authority helps, but it does not dominate. Many education-related decisions in families may be shaped by informal influence, information advantages, and confidence in judgment. These mechanisms are consistent with self-efficacy theory Bandura introduced the concept of self-efficacy[9]. and with research on intertemporal choice .

**Table 5.** Mediation Analysis for Household Education Expenditure

| | **Income pathway** | | | **Formal authority pathway** | |
|---|---|---|---|---|---|
| Dependent variable | (1) ln Education expenditure | (2) ln Income (female) | (3) ln Education expenditure | (5) Female household head | (6) ln Education expenditure |
| Women's education (years) | 0.062*** (0.005) | 0.157*** (0.008) | 0.059*** (0.005) | 0.005*** (0.001) | 0.061*** (0.005) |
| Spouse's education (years) | 0.049*** (0.005) | −0.082*** (0.008) | 0.046*** (0.005) | 0.009*** (0.001) | 0.047*** (0.005) |
| ln Income (female) | | | 0.022*** (0.004) | | |
| Female household head | | | | | 0.218*** (0.032) |
| Controls | Yes | Yes | Yes | Yes | Yes |
| N | 24,342 | 31,711 | 24,342 | 31,711 | 24,342 |

| | Income pathway | | | Formal authority pathway | |
|---|---|---|---|---|---|
| $R^2$ / Pseudo $R^2$ | 0.233 | 0.52 | 0.236 | 0.053 | 0.234 |

**Table 5.** (*Continued*)

***Notes:** Standard errors in parentheses. *p<0.1, **p<0.05, **p<0.01.*

## 4.5. Robustness Analysis

Two robustness checks are conducted to evaluate whether the main results are driven by specific subsamples.First, extreme education groups are excluded (no schooling; postgraduate and above). The estimated coefficient for women's education remains positive and statistically significant (0.045). This suggests that the association is not driven by a small number of outliers. It is present across the broad middle range of educational attainment.Second, rural samples are excluded. The estimated coefficient remains significant but becomes smaller (0.019). This pattern is consistent with the idea that the behavioral returns to schooling depend on context. In rural settings, education may have weaker links to labor market opportunities and consumption options. Constraints may also reduce the extent to which cognitive and future-oriented preferences translate into observable spending patterns.

**Table 6.** Robustness Checks for Total Household Consumption

| | (1) Excluding extreme education | (2) Excluding rural samples |
|---|---|---|
| Women's education (years) | 0.045*** (0.002) | 0.019*** (0.003) |
| Spouse's education (years) | 0.032*** (0.002) | 0.009*** (0.003) |
| Household size | 0.129*** (0.003) | 0.161*** (0.004) |
| Health status | 0.048*** (0.006) | 0.016** (0.008) |
| Dependency ratio | −0.055* (0.033) | −0.599*** (0.043) |
| Medical insurance | 0.124*** (0.009) | 0.068*** (0.012) |
| Credit card | 0.405*** (0.012) | 0.440*** (0.022) |
| Age | 0.001 (0.000) | −0.001 (0.001) |
| Female household head | 0.103*** (0.012) | 0.041** (0.021) |
| ln Income (female) | 0.003** (0.001) | 0.008*** (0.002) |
| ln Income (spouse) | 0.001 (0.001) | 0.007*** (0.002) |
| Constant | 9.499*** (0.039) | 9.783*** (0.050) |
| N | 27,304 | 14,425 |
| $R^2$ | 0.277 | 0.302 |

***Notes:** Standard errors in parentheses. *p<0.1, **p<0.05, **p<0.01.*

## 4.6. Endogeneity Concerns and Interpretation of Results (Behaviorally Framed)

Several endogeneity issues should be acknowledged. First, households that already value developmental consumption may invest more in women's education. This introduces possible reverse causality. Second, unobserved factors such as family culture, intergenerational values, and early-life socioeconomic conditions may influence both education and consumption. Omitted variables may therefore bias the estimates.The CHFS 2019 data are cross-sectional. This limits causal claims. The results should be interpreted as associations rather than identified causal effects. This does not invalidate the behavioral interpretation, but it sets boundaries.From a decision-process perspective, education does not merely shift consumption upward but alters the weighting scheme applied to competing consumption attributes. Specifically, higher

educational attainment is associated with greater emphasis on delayed returns, perceived investment value, and intergenerational benefits, while the relative weight placed on immediate consumption utility becomes less dominant.Even under these limits, the results show a clear and consistent pattern. Women's education is more strongly linked to enjoyment and education expenditure than to subsistence consumption. This allocation pattern is not what a pure income story would predict. It aligns better with educational psychology mechanisms. Education is often associated with improved information processing , stronger reflective decision-making[10], and lower time discounting[5]. These traits can shift spending toward long-term and quality-enhancing categories.The mediation results support this interpretation. Income and formal authority are statistically relevant, but their shares are modest. They appear to be partial pathways. A broader decision-orientation channel remains plausible. Future studies can test causality more directly using panel data, policy shocks, or quasi-experimental designs.

# 5. Conclusion

This study uses nationally representative microdata from the 2019 China Household Finance Survey (CHFS) to examine the association between married women's educational attainment and household consumption, with particular attention to consumption allocation. The empirical results show a robust positive association between women's years of schooling and total household consumption. A one-year increase in women's education is associated with a 3.7% increase in household consumption expenditure. More importantly, the association is heterogeneous across consumption categories. Women's education is more strongly linked to enjoyment consumption and education-related expenditure than to subsistence consumption. This pattern suggests that women's education is not only related to the scale of household spending, but also to how households prioritize and allocate resources across short-term necessities and long-term, quality-enhancing uses.

We conceptualize this mechanism as a cognitive reweighting model of household consumption, in which women's education systematically reshapes how families balance short-term necessities against long-term developmental investments.The psychological mechanisms emphasized in this study may be particularly salient in the Chinese context. In welfare states with comprehensive public provision, long-term risks related to education, healthcare, and old-age security are partially externalized. In contrast, Chinese households continue to rely heavily on family-based strategies to manage long-term uncertainty. Under such institutional conditions, household consumption decisions require active planning and prioritization. Education-related cognitive resources—such as future orientation, information evaluation, and confidence in judgment—therefore play a more pronounced role in shaping allocation choices. Women's education, by strengthening these psychological capacities, may exert a stronger influence on consumption structure in China than in contexts where institutional arrangements reduce the need for household-level decision framing.

From an educational psychology perspective, these findings are consistent with a decision-orientation interpretation of schooling. Education is closely related to improved information processing and reflective evaluation of trade-offs[3]. Education is also associated with stronger future orientation and lower time discounting, which increases willingness to allocate resources to delayed-return investments such as education and health[5]. In family settings, these cognitive and motivational characteristics can translate into systematic shifts in consumption structure. In this sense, the stronger association between women's education and education-related consumption may reflect a psychological pathway of intergenerational investment, rather than a purely income-driven expansion of spending.

The mediation analyses provide further clarification. Women's income and registered household headship both show statistically significant mediating roles. However, the mediation proportions are modest (approximately 1–2% for total consumption, and around 6% for education expenditure through income). These results imply that income gains and formal institutional roles operate as supportive pathways rather than dominant mechanisms. This is important for interpretation. If women's education primarily acted through income, the indirect share would be expected to be much larger. The observed pattern is more consistent with broader cognitive and preference-related mechanisms that are difficult to capture using administrative role indicators or short-run income measures. Education may shape households' perceived returns to different consumption categories, their planning horizons, and the confidence with which preferences are articulated and defended in family decision contexts.Compared with welfare-state contexts where long-term risks are partially socialized, households in China must internalize future uncertainty within family decision-making. Under such conditions, cognitive orientation and time preference play a more decisive role in shaping consumption allocation, amplifying the behavioral implications of women's education.The findings also carry practical implications. Policies that expand women's educational opportunities may influence consumption upgrading not only by increasing earnings, but also by strengthening decision competence and long-term planning in family life. In applied terms, education can enhance financial literacy, improve risk evaluation, and support a more future-oriented consumption mindset. These are psychological capacities that matter for household welfare. Therefore, policy efforts aimed at women's education should not be framed solely as human capital accumulation for the labor market. They can also be viewed as investments in cognitive and decision-making resources that shape household allocation choices and intergenerational development. At the same time, the stronger association with enjoyment consumption suggests that improving women's education may increase demand for services that support quality of life. Future consumption growth may thus depend not only on supply-side expansion, but also on whether households feel secure enough to allocate spending toward developmental and experiential categories.

Several limitations should be acknowledged. First, household headship is only a proxy for formal economic authority. In China, headship registration may follow administrative conventions and may not fully reflect actual bargaining dynamics. This can attenuate the estimated mediation effect and may understate informal influence within households. Second, the CHFS 2019 data are cross-sectional. The results should therefore be interpreted as associational rather than strictly causal.From an educational psychology perspective, schooling may be viewed as a long-term intervention that shapes not only skills but also decision habits. Repeated exposure to abstract reasoning, delayed evaluation, and rule-based judgment in educational settings may gradually cultivate a preference for reflective decision-making. These habits can extend beyond academic contexts and influence everyday economic choices, including how households plan, prioritize, and allocate consumption.

This study examines the relationship between married women's educational attainment and household consumption allocation using nationally representative data from the 2019 China Household Finance Survey. The results show that women's education is positively associated with total household consumption and more strongly related to enjoyment and education-related expenditures than to subsistence consumption.

These findings suggest that education may influence household consumption not only through income but also through broader cognitive and behavioral mechanisms, including future orientation, information evaluation, and decision confidence. By reshaping how households evaluate trade-offs between immediate needs and long-term developmental investments, women's education may alter the allocation of consumption across categories.

Several limitations should be acknowledged. The analysis relies on cross-sectional data and therefore cannot establish strict causal relationships. Future research could strengthen causal identification by using panel data, instrumental variables based on education policy reforms, or other quasi-experimental approaches.

## Conflict of interest

The authors declare no conflict of interest.

## References

1. Friedman, M. (1957). A theory of the consumption function. Princeton University Press.
2. Duesenberry, J. S. (1949). Income, saving, and the theory of consumer behavior. Harvard University Press.
3. Becker, G. S. (1965). A theory of the allocation of time. The Economic Journal, 75(299), 493–517.
4. Becker, G. S. (1964). Human capital: A theoretical and empirical analysis, with special reference to education. University of Chicago Press.
5. Thaler, R. H. (1985). Mental accounting and consumer choice. Marketing Science, 4(3), 199–214.
6. Browning, M., Bourguignon, F., Chiappori, P.-A., & Lechene, V. (1994). Income and outcomes: A structural model of intrahousehold allocation. Journal of Political Economy, 102(6), 1067–1096.
7. Lundberg, S., & Pollak, R. A. (1993). Separate spheres bargaining and the marriage market. Journal of Political Economy, 101(6), 988–1010.
8. Lundberg, S. J., Pollak, R. A., & Wales, T. J. (1997). Do husbands and wives pool their resources? Evidence from the United Kingdom child benefit. Journal of Human Resources, 32(3), 463–480.
9. Dynarski, S., Gruber, J., Moffitt, R. A., & Burtless, G. (1997). Can families smooth variable earnings? Brookings Papers on Economic Activity, 1997(1), 229–303.
10. Laibson, D. (1997). Golden eggs and hyperbolic discounting. The Quarterly Journal of Economics, 112(2), 443–477.
11. Carroll, C. D. (2001). A theory of the consumption function, with and without liquidity constraints. Journal of Economic Perspectives, 15(3), 23–45.
12. Hirano, K., & Imbens, G. W. (2005). The propensity score with continuous treatments. Wiley.
13. Doss, C. (2013). Intrahousehold bargaining and resource allocation in developing countries. The World Bank Research Observer, 28(1), 52–78.
14. Meier, S., & Sprenger, C. D. (2013). Discounting financial literacy. Journal of Economic Behavior & Organization, 95, 159–174.
15. Aguiar, M., & Bils, M. (2015). Has consumption inequality mirrored income inequality? American Economic Review, 105(9), 2725–2756.
16. Keynes, J. M. (1936). The general theory of employment, interest and money. Macmillan.
17. Chiappori, P.-A., & Meghir, C. (2014). Intrahousehold inequality. NBER Working Paper No. 20191.
18. Majlesi, K. (2016). Labor market opportunities and women's decision-making power within households. Journal of Development Economics, 119, 34–47.
19. Attanasio, O. P., & Pistaferri, L. (2016). Consumption inequality. Journal of Economic Perspectives, 30(2), 3–28.
20. Gan, L., Guan, N., Hu, L., & Yang, D. T. (2017). Household finance in China. NBER Working Paper No. 23741.
21. Andreoni, J., Kuhn, M. A., List, J. A., Samek, A., Sokal, K., & Sprenger, C. (2019). Toward an understanding of the development of time preferences. Journal of Public Economics, 177, 104039.
22. Lugauer, S., Ni, J., & Yin, Z. (2019). Chinese household saving and dependent children. China Economic Review, 57, 101091.
23. Basu, B., & Maitra, P. (2020). Intra-household bargaining power and household expenditure allocation. Review of Development Economics, 24(2), 606–627.
24. Berniell, L., de la Mata, D., & Machado, M. P. (2021). The impact of women's education on fertility and family outcomes. Journal of Human Resources, 56(2), 567–603.
25. Alan, S., Boneva, T., & Ertac, S. (2022). Ever failed, try again, succeed better. The Quarterly Journal of Economics, 137(3), 1649–1703.
26. Li, C., & Sun, D. (2023). Women's bargaining power and spending on children's education. International Journal of Educational Development, 100, 102787.

27. Kang, C., Fu, Z., & Zhao, S. (2024). Maternal relative income, bargaining power, and children's education expenditure. Economic Analysis and Policy, 81, 1395–1410.
28. Sun, X., Yang, J., & Liu, H. (2025). Women's bargaining power and household expenditure. Economic Analysis and Policy, 88, 775–800.
29. Abdel-Ghany, M., & Schrimper, R. A. (1978). Food consumption expenditures and education of the homemaker. Home Economics Research Journal, 6(4), 283–292.
30. Abdel-Ghany, M., & Foster, A. C. (1982). Impact of income and wife's education on family consumption expenditures. Journal of Consumer Studies and Home Economics, 6(1), 21–28.