
CONSUMERISM AND GENDER IDENTITY: A MEDIATION ANALYSIS ON ONLINE SHOPPING IN CHINA

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ABSTRACT

Benefiting from rapid growth of economy and expansion of the internet, Chinese people are enjoying the convenient of online shopping in every aspect of the daily life. Such growth also facilitates the development of consumerism. Yet, the associations between online shopping and consumerism still need more research regarding the current Chinese context. This research explores the mediating effect of online shopping on consumerism, in particular, its role in generating gendered identity. This paper utilizes the data from CFPS (China Family Panel Study) wave 2018, which is one of the most up-to-date social survey data in China. The mediating effect is tested by SEM (structural equation modelling). The findings suggest that a clear gender differences regarding online shopping behaviors exists in the Chinese context. Online shopping mediates the effect of other social-economic indicators, such as income and education, on gender identity.

Key Words: online shopping, consumerism, gender, gender identity, socioeconomic status .

1. INTRODUCTION

To discuss consumerism and its influence in China, it is essential to introduce the background of rapid economy growth after the Reform and Opening-up. China has been one of the fastest growing economies since the Reform and Opening up in 1978. The National Bureau of Statistics shows that China's average GDP growth since 1990 has been 9 per cent every year, based on the World Bank's standards set. During this period of fast economy growth, consumption and consumerism also rise in China. To stimulate economic development, the government launches laws and regulations to encourage consumption.

In the past decade, Chinese economy was marked by a remarkable expansion of internet and mobile APPs. Increasing internet and mobile APP coverage reshape individuals' daily life, where online shopping becomes an essential aspect of our everyday activities. Frequent online shopping promotes people's desire of consumption and persuade them to consume more, thus further triggering the rise of consumerism. The association between online shopping and consumerism is very necessary for us to better interpret current Chinese economy.

Gender identity is an essential feature of consumerism; therefore, this paper adopts gender identity as the consequence of consumerism. To explore factors that influence online shopping behaviors and the role of online shopping in shaping people's gender identity, I conducted the research using both multivariate linear regression and mediation analysis with SEM (structural equation modeling). First, using multivariate linear regression, this research first examines the effect of gender, age, income level, employment status, and years of education on online shopping behaviors. Second, I used mediation analysis to investigate the mediation effect of online shopping behaviors on the association between gender and gender identity. To thoroughly examine the factors that might influence gender identity, I also incorporated age, income level, and years of education as independent variables.

2. BACKGROUND OF RISING CONSUMERISM IN POST-REFORM CHINA

China has been largely affected by consumerism when the economy grows rapidly. This process is featured by an increase in household income and a decrease in household saving (Zhao et al. 2018). A study using a sample taken from 1982 to 2014 shows that every 1 percentage point increase in real GDP growth was associated with a 0.28 percentage point increase in real household disposable income growth. Meanwhile, the household saving rate decreased by 3.6 percentage points in the period of 2010-2013 and was forecasted to decline 1 percentage point each year from 2016 to 2020 (Nie, J., & Palmer, A. 2016). The increase in household income, along with the decline of saving rate, indicates that consumption is taking an increasing weight in household finance.

In addition, a shift of government priority in recent years further catalyzed the rise of consumerism. After rapid economic growth brought by net exports and investments, China has now shifted to a consumer-powered economy to sustain economic development in the long run, albeit at a slower rate (Wang, 2014). Under a consumption-driven model, the government has launched new policies that promote household income growth, improve the social safety net, and support the expansion of small and midsize private enterprises (McKinsey & Company, 2013). Moreover, the rising number of young population and a higher young dependency ratio, changes in technology and demographic shifts, further growth of urban areas, etc, all contribute to rising consumption and consumerism in China (Cheng, 2021; Nie, J., & Palmer, A. 2016). Morgan Stanley Research found that private consumption in China will nearly double from \$4.4 trillion in 2016 to \$9.7 trillion by 2030, and that by 2030, China's private consumption is set to more than double to reach \$12.7 trillion (Skelly, 2017).

The market-based economy also catalyzed consumer protection movement. After the Reform and opening-up, Chinese government launched the Consumer Protection Law in 1993, Anti-Unfair Competition Law in the same year, and Advertisements Law in 1994 (Zheng & Liao, 2013). It also established institutions to better protect consumers' rights. For example, China Consumers Association (CCA) and the National Consumer Rights Day emerged to keep pace with the new market structure that largely depended on supply and demand (Zhao et al. 2018).

3. LITERATURE REVIEW

3.1. Online shopping in China

With the strong influence of consumerism, China also rises as a global leader in online shopping and e-commerce. With more than 710 million digital consumers, China’s online retail transactions reached \$1.93 trillion in 2019 and are forecasted to reach \$4.09 trillion by 2023 (International Trade Administration, 2021). The COVID-19 pandemic further prompted this trend, as consumers increasingly shift to online platforms for purchases. According to the National Bureau of Statistics of China, though total retail sales of consumer goods in the country decreased by 3.9% in 2020, online retail sales of physical goods increased by 14.8% in the same year. The trend of retail e-commerce sales and value in China are shown in figure 1 and figure 2.



Figure 1. Retail e-commerce sales in China 2018-2023

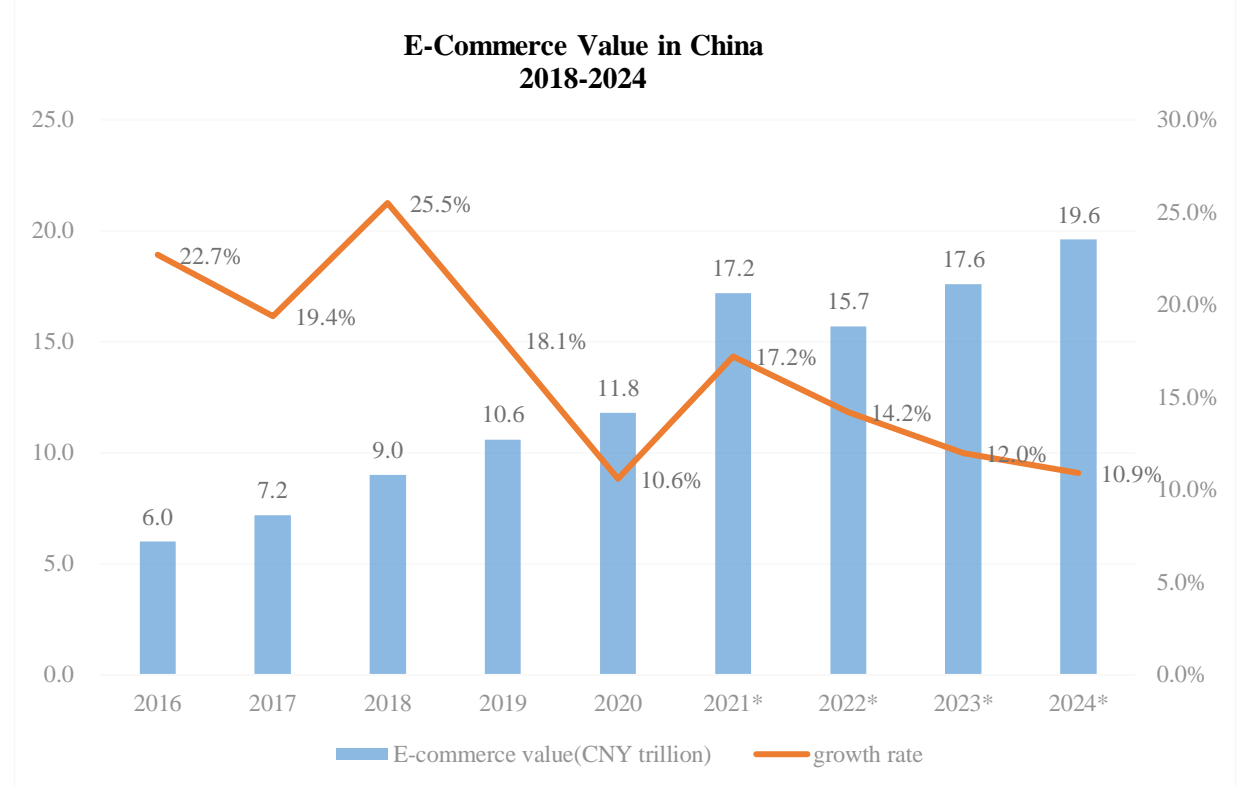


Figure 2. E-Commerce value in China 2018-2024

3.2. Gender differences in online shopping

Research has demonstrated gender differences regarding online shopping behaviors. The gender division of internet users in China is approximately 52.4% men and 47.6 women (CNNIC, 2016), which gradually corresponds with the gender ratio of the total population. However, the gender distribution of deeply engaged online shopping consumers is largely uneven, with men constituting 61.6% of the consumer and women only 38.4% (Dai, W. et al. 2019).

Men and women also differ in terms of attitudes towards online shopping. Research has shown that women hold more favorable attitudes toward offline shopping than online shopping, while men’s attitudes vary little between offline and online shopping (Dittmar et al., 2004; Hasan, 2010). Meanwhile, however, a study find that Chinese women hold a generally implicit negative affective attitude towards online shopping (Dai, W. et al. 2019). Chinese women tend to explicitly rate their appreciation toward online shopping yet implicitly devalue online shopping. Those results support Dittmar et al. (2004) study which suggests that females appreciate and fear online shopping at the same time.

The phenomenon is possibly related to gender traits during the shopping process. According to Dittmar et al. (2004) study, women place greater emphasis on the emotional experiences associated

with online shopping. Specifically, their devaluation of online shopping results from its lack of social and interpersonal interactions, while men's appreciation of online shopping derives from the functional benefits of online platforms, such as efficiency and convenience.

3.3. Online shopping and consumerism

According to Lucius (2016), consumerism has three definitions: 1. the organized efforts to help protect consumer rights and maintain fair business practices; 2. the doctrine that "ever-increasing consumption of goods and services" lays the basis of a sound economy; 3. continual expansion of people's needs and wants for goods and services. Here we take the third definition. In the digital era, the changing role of media, emerging methods of sales promotion and customer relationship management have transformed the way businesses reaching their potential customers, inviting them to purchases, engaging them in the online network, and encouraging more consumption. The Internet boosts consumerism by continually exploiting consumers' needs and demands and exposing them to a wide variety of goods and services. In specific, the Internet enhances "the right to be informed" by allowing consumers to browse the internet before making a purchase, thus increasing their access to product information. It also enhances "the right to choose" by providing consumers with various search engines and destinations (Kucuk and Krishnamurthy 2007). Thus, consumers are exposed to a more diverse pool of choices and are likely to make thorough consideration before making the purchase.

3.4. You Are What You Buy - How Identity Relates to Consumerism

The widespread usage of internet and the resulting mass consumption also shapes individuals' self-identity. On the one hand, companies utilize internet for branding and advertising, which generate and spread new concepts and life-styles. On the other hand, access to vast resources online makes it easier for consumers to generate self-identity. In the following sections, I will review literatures on consumerism and self-identity to provide theoretical background for this research.

Research studying consumption and consumerism has proven that consumption could be a reflection of our identities. It is not only a symbol of who we are as a person but also a demonstration of how we perceive ourselves in the society (Todd, 2012). For example, in green consumerism, consumers who identify as advocates for environmental protection tend to buy green products (Sharma, N. et al. 2020). Research by Stok et al. (2014) found that self-identification moderated the influence of social norms on the subjects' self-reported vegetable intake. Identities concerned with gender, family, and position in the society also influence people's consumption choices (Jackson, 1999). These findings indicate the powerful role of self-identification in predicting and facilitating consumer behaviors. Therefore, it is likely that self-identification significantly affect consumer behaviors and is reflected in the choices of purchase.

3.5. Gender identity

Gender identity is one of the most notable identities on which abundant research has been performed. Spence (1985) has pointed out that "gender is one of the earliest and most central components of the self-concept and serves as an organizing principle through which many experiences and perceptions of self and other are filtered." As children grow up being socialized within a cultural context, information they receive from the outside world gradually shape their

concept about gender. They develop a cognitive network which associates their biological sex with the culturally defined gender traits (Palan, 2001). Instrumental/Agentic personality traits such as “independence, assertiveness, reason, rationality, competitiveness, and focus on individual” are associated with masculinity, while communal/expressive traits such as “understanding, caring, nurturance, responsibility, considerateness, sensitivity, intuition, passion, and focus on communal goals” are hallmarks of femininity (Parsons and Shils, 1952; Palan, 2001). The culturally defined gender traits might explain women’s less favorable attitude toward online shopping due to its lack of communal and emotional interaction. In addition, note that either in the West or the East, traditional gender role of women was restrained within the domestic sphere, as fertility and nurturing skills were considered two necessary qualities of women (Dimulescu, 2015). Thus, women are historically not expected to engage actively in the economy, which explains their less participation in online shopping even today. However, it is necessary to point out that most research regarding gender identities is done in Western societies, little is done based on the Chinese context.

3.6. Change in identity - Rise of She-economy

Despite women’s historically low participation in the economy, recent years have seen their skyrocketed engagement in online shopping. Aside from feminist movements that have freed women from the domestic sphere, this change is also featured by the rise of beauty industry. With the emergence of modern consumerism, female beauty has evolved into an industry that has penetrated the economy. According to Dimulescu in 2015, there is a significant cultural change in the public perception of gender identity: female beauty has shifted from a “representation of woman as reproductive force and object in the preserving power of the social institution of the family” to the image of woman as a “sexually assertive subject for whom physical beauty is a form of Empowerment.” Access to beauty has even become a human right, a form of social equality among all women to have an “emancipatory lifestyle” (Dimulescu, 2015).

Partly influenced by Western hegemony, gender role and female identity in China have gone through a transformation as well. According to a survey jointly released by Putuo-based Global Harbor and Jade International, Chinese women under 30 years old are expected to be the primary driving force of consumption, largely due to their reliance on cosmetics (Yang, 2021). Besides the beauty industry, female consumption has risen in many other areas of the economy as well. Women now contribute 75% of the total household consumption in China and purchase half of the male-targeted products. The rise of female power, i.e. increasing purchasing power and socioeconomic status, has led to the rise of "she economy." Moreover, female consumption showed a trend of "pleasing myself": on Tmall, the number of women buying boxing gloves on Tmall has doubled in the past year, more than 70% of AJ consumers are women, and 80 percent of the consumers of suits are women, as shown in the Tmall report. According to CBN Data, the female consumer market in China has exceeded \$1.53 trillion in 2020 (Global Times, 2021)

According to the statistics mentioned at the beginning of this research, Chinese women contribute more to the online shopping market, and that a change in identity might have triggered their consumer behaviors. However, there is the possibility of survival/selective bias: young women with relatively high socioeconomic status are likely to be the main contributor. Therefore, we will

compare males and females in terms of online shopping and explore whether shopping online plays a role in shaping their self-identity in contemporary China.

To answer the research question, this research raises three hypotheses.

1. Women adopt online shopping less than men do.
2. Gender and socioeconomic status affect gender identity.
3. Online shopping behaviors will have a mediating influence on gender identity.

4. DATA AND METHOD

4.1. Sample used in research

The study uses data from CFPS (China Family Panel Studies), a nationally representative, annual longitudinal survey of Chinese communities, families, and individuals launched in 2010 by the Institute of Social Science Survey (ISSS) of Peking University, China. Five provinces, each with 1600 families, were chosen for initial oversampling to make regional comparisons. The remaining 8000 families were selected from the other provinces to make the overall sample representative of Chinese population. The data was collected on individual, family, and community level and covers areas such as economic activities, education outcomes, migration, family relations, etc. Follow-up of all core members of the CFPS takes place on a yearly basis (China Family Panel Studies, 2013). This research utilizes the data from 2018 wave, which is the newest of CFPS. The research sample contains 8860 individuals aged over 16 years.

4.2. Measurement of variables

To analyze the relationship between gender and online shopping behaviors, this research first ran multivariate linear regression. Second, this study adopted mediation analysis to investigate the association between consumerism and online shopping, where online shopping variables are mediators. All the variables used in the study are displayed in Table 1 and 2.

For the multivariate linear regression, gender is the main independent variable, measured as biological sexes: male and female. Other independent variables include years of education, income, and employment status as so to represent the subjects' socioeconomic status.

The outcome variable of the multivariate linear model is online shopping behavior. It is measured by three variables: 1. The frequency of online shopping; 2. Attitude regarding the importance of online shopping; 3. The amount of money spent on online shopping. The frequency of online shopping and attitudes towards online shopping is a scale variable from 1 to 5, where 1 indicates the lowest/worst while 5 indicates the highest/best.

For the mediation analysis, the variable of interest is gender, and outcome variable is gender identity. As mentioned by Palan (2001), male and female gender identities are featured by instrumental/agentive personality traits and communal/expressive traits, respectively. Thus, we choose "innovative" as the variable representing male identity (masculinity), while "considerate for others" represents female identity (femininity). Each subject ranks themselves in terms of the

variables using numbers 1 to 5, where 1 indicates the least fit for the description, while 5 indicates the fittest. The mediation variable is an online shopping variable, I would choose the one variable that has the greatest association with gender as shown in the multivariate linear regression.

Table 1. Summary of binary variables

	frequency	percentage
Gender		
female	4,267	48.16
male	4,593	51.84
Place of residence		
rural	3,065	34.59
urban	5,795	65.41
Employment status		
unemployed	1,939	21.88
employed	6,921	78.12

Table 2. Summary of continuous and scale variables

	observation	mean	standard deviation	min	max
Amount of money spent in online shopping	8,860	6249.85	85855.33	0	7200000
Attitudes towards online shopping	8,860	2.47	1.87	0	5
Frequency of online shopping	8,859	2.84	1.37	1	5
Age	8,860	37.50	11.66	16	65
Income	9,984	35731.31	41327.06	0	840000
Years of education	14,105	11.09	3.69	0	23

4.3. Analytical strategy

Multivariate regression

We can first estimate the effect of gender and online shopping on gender identity through multivariate linear regression. Let us denote online shopping variables by Y_i : frequency of online shopping is represented by Y_1 , attitude toward the importance of online shopping by Y_2 , and the amount of online shopping by Y_3 . For the independent variables, let us denote gender by X , age by A , income by I , employment status by E , years of education by D , and place of residence(urban/rural) by U . The reduced form linear model gives us the influence of gender and online shopping variables on gender identity:

$$Y = \delta_1 X + \delta_2 A + \delta_3 I + \delta_4 E + \delta_5 N + \delta_6 U$$

Mediation analysis

Then I used mediation analysis to estimate the influence of gender and online shopping on gender identities. I also include other independent variables, including age, income, and years of education. Figure 3, figure 4, and figure 5 demonstrate the mechanism of mediation analysis. X represents independent variables. Y represents gender identity, and M represents online shopping behavior. Assume that it is previously proven that X, the independent variable, is associated with Y, the outcome variable, as shown in figure 3.

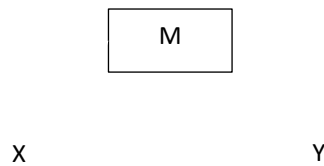


Figure 3. Association between X and Y

We have an equation:

$$Y = b_0 + b_1 X + e$$

Meanwhile, X is also associated with M, the mediating variable. See figure 4.

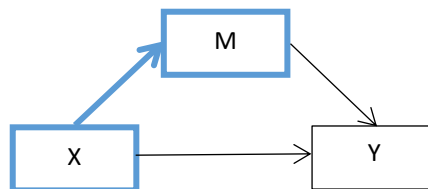


Figure 4. Association between X and M

We can derive an equation for X and M:

$$M = b_0 + b_2 X + e$$

Now a mediation effect exists if M affects the value of Y. In this case, the effect of X on Y is influenced by M, a third factor in between. See figure 5.

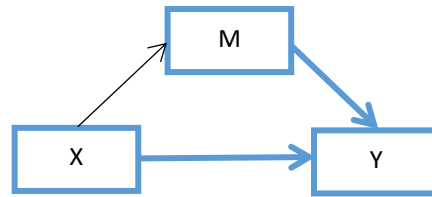


Figure 5. Association between X and Y

The equation could be

$$Y=b_0+b_4X+b_3M+e$$

Under the influence of M, if the effect of X on Y completely disappears, we say that M fully mediates between X and Y; if the effect of X on Y still exists, though in a smaller magnitude, M partially mediates between X and Y.

After running the approach with STATA, let’s look for Average Causal Mediation Effects in the results. Note that b1 is the total effect of X on Y without the mediation effect of M, while b4 is the direct effect of X on Y after taking into account the effect of M. The mediation effect (ACME), therefore, is the difference between total effect and direct effect, that is, (b1–b4), which equals to a product of a coefficient of X in the second step and a coefficient of M in the last step: b2×b3. The flow of model is shown in figure 6.

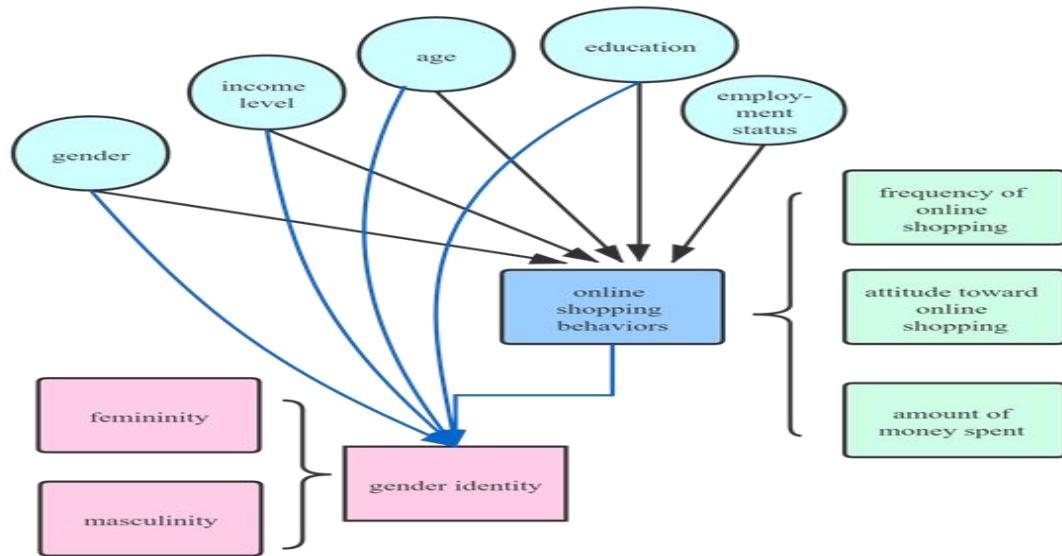


Figure 6. Flow of model

5.RESULTS

5.1. Results of Multivariate Linear Regression

The results of multivariate linear regression are shown below. Table 3 demonstrates the results of the multivariate linear regression run on Y1, the frequency of online shopping, Y2, attitudes towards the importance of online shopping, and Y3, the amount of money spent on online shopping.

First, as shown in the table, gender, age, income, education, and place of residence all have statistically significant associations with the frequency of online shopping. Men's frequency of online shopping is 0.24 points lower, meaning that they tend to engage in online shopping less frequently than women. People with higher education, tend to shop online more frequently: one extra year of education results in 0.09 points higher in terms of the frequency of online shopping. Also, younger people are inclined to engage more frequently in online shopping. Employment status, however, does not have a significant association.

Second, the associations between attitudes towards online shopping and gender, age, income, employment status, years of education, and place of residence are all statistically significant. Specifically, men are 0.37 points lower in terms of attitudes towards online shopping. Urban residents and people with higher socioeconomic tend to hold more favorable attitudes toward the importance of online shopping.

However, the associations between indicators and the amount of money spent on online shopping are rather different. All the indicators except income and education are not significant. More specifically, people with higher income and longer time of education tend to spend more on online shopping. With 1 extra year of schooling, respondents will spend around 750 more Yuan on online shopping. For income, when it increases by 1 Yuan, the amount of money spent on online shopping will increase by 0.09 Yuan. Other variables, with p-values over 0.05, are considered to have no statistically significant association with the amount of money spent on online shopping. Notably, whether a person lives in urban or rural areas does not significantly impact his or her spending on online shopping.

Note that Y1 and Y2, that is, the frequency of online shopping and attitude toward its importance, reflect subjective view. The amount of money spent on online shopping, on the other hand, is rather objective. Although women subjectively favor online shopping and thus more frequently engage in the activity, there is no evidence that they actually shop more online.

Next, I examined the results of the multivariate linear regression on gender identities. As seen in table 4, the attitude towards online shopping, gender, income, and place of residence are significantly associated with both variables representing femininity and masculinity. One point increase in the attitude towards online shopping will result in 0.048 points increase in femininity and 0.066 increase in masculinity. Females score 0.069 higher in femininity and 0.288 lower in masculinity. People living in urban areas score 0.051 lower in femininity and 0.060 lower in masculinity. There are also some differences. An extra year of age results in 0.011 point higher in femininity, while age does not significantly associates with masculinity; one extra year of

education results in 0.011 point higher in masculinity, while years of education does not significantly associates with femininity.

5.2. Results of mediating analysis

According to the multivariate linear regression, attitudes towards online shopping not only is statistically significant associated with gender but also has the greatest coefficient (measured by absolute value). Thus, it is reasonable to believe that gender differences in online shopping behaviors are representative. I therefore used attitudes towards online shopping as the mediation variable. For convenience, I will use “attitudes” as the abbreviation of the attitudes towards online shopping. “Femininity” is used as that of the female identity, which means the extent to which the subject is “considerate for others.”. “Masculinity” is used as that of male identity, which means the extent to which the subject is “innovative.”

I performed mediation analysis twice, using both female and male identity variable as outcome variable. First, the results using “femininity”, represented by “considerate for others,” are shown in table 5 and 6. The results show that age, gender, and years of education all have an effect on “femininity”, yet the attitudes towards online shopping mediates very little on the effect of age and education on female identity. However, it does mediate the effect of gender-on-gender identity. To examine the mediation effect, the calculated proportion of total effect mediated is: $-0.01/-0.07 = 0.14$. It indicates that around 14% of the gender effect on “femininity” is mediated by online shopping attitudes. The ratio of indirect to direct effect is $-0.01/-0.06 = -0.17$, and the ratio of total to direct effect is $-0.07/-0.06 = 1.17$. With p-value less than 0.05, the indirect effect, direct effect, and total effect are all significant. The results are summarized in figure 7-10.

Second, the results using “masculinity”, represented by “innovative,” are shown in table 7 and 8. As seen in the table and the figure, gender, age, and years of education all have significant association with the trait of masculinity. However, only the effects of gender and years of education are mediated by attitudes towards online shopping. To investigate the mediation effect on gender and masculinity, it will first calculate the proportion of total effect mediated: $-0.03/0.27 = -0.11$. It indicates that about 11% of the gender effect on “masculinity” is mediated by online shopping attitudes. The ratio of indirect to direct effect is $-0.03 / 0.30 = -0.10$, and the ratio of total to direct effect is $= 0.27 / 0.30 = 0.90$. For years of education, the proportion of total effect mediated is $0.01/0.02$, the ratio of indirect to direct effect is $0.01/0.01=1.00$, and the ratio of total to direct effect is $0.02/0.01=2.00$. The association path is summarized in figure 11-14.

Table 3. Multivariate linear regression on online shopping behaviors

	Frequency		Attitudes		Amount of money	
	coefficient	P-value	coefficient	P-value	coefficient	P-value
Gender (ref. female)	-0.24	0.00	-0.37	0.00	390.11	0.84
Age	-0.04	0.00	-0.05	0.00	-161.09	0.05
Income	0.00	0.00	0.00	0.00	0.09	0.00
Employment (ref. unemployed)	0.08	0.03	0.17	0.00	-3549.48	0.16

Education	0.09	0.00	0.09	0.00	749.60	0.01
Place of residence (ref. rural)	0.19	0.00	0.12	0.00	2908.35	0.15
Adj R-squared	0.28		0.26		0.0041	

Table 4. Multivariate linear on gender identity

	Femininity		Masculinity	
	Coef.	P-value	Coef.	P-value
Amount of money	0.000	0.890	0.000	0.607
Attitudes	0.048	0.000	0.066	0.000
Frequency	-0.024	0.084	0.023	0.175
Gender				
Male	-0.069	0.002	0.288	0.000
Age	0.011	0.000	0.000	0.882
Income	0.000	0.248	0.000	0.001
Employment status				
Employed	0.021	0.460	0.037	0.292
Educational level	-0.005	0.130	0.011	0.004
Residence status				
Urban	-0.051	0.027	-0.060	0.032
_cons	3.581	0.000	2.584	0.000
Adj R-squared	0.017		0.041	

Table 5. Mediation effect analysis of online shopping on femininity

	Coef.	OIM		
		Std. Err.	P-value	
Structural				
Attitudes				
Gender		-0.36	0.04	0.00
Age		-0.05	0.00	0.00
Income		0.00	0.00	0.00
Education		0.13	0.00	0.00
_cons		3.04	0.09	0.00
Femininity				
Attitudes		0.03	0.01	0.00
Gender		-0.06	0.02	0.00
Age		0.01	0.00	0.00

	Income	0.00	0.00	0.22
	Education	-0.01	0.00	0.02
_cons		3.57	0.06	0.00
var(e.attitudes)		2.60	0.04	
var(e.femininity)		0.92	0.01	

Table 6. Direct, indirect and total effects of mediation analysis

	Direct effects			Indirect effects			Total effects		
	Coef	Std. Err.	P-value	Coef	Std. Err.	P>z	Coef	Std. Err.	P>z
Structural									
Attitudes									
Gender	-0.36	0.04	0.00	0.00	(no path)		-0.36	0	0.00
Age	-0.05	0.00	0.00	0.00	(no path)		-0.05	0	0.00
Income	0.00	0.00	0.00	0.00	(no path)		0.00	0	0.00
Education	0.13	0.00	0.00	0.00	(no path)		0.13	0	0.00
Femininity									
Attitudes	0.03	0.01	0.00	0.00	(no path)		0.03	0.01	0.00
Gender	-0.06	0.02	0.00	-0.01	0.00	0.00	-0.07	0.02	0.00
Age	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Income	0.00	0.00	0.22	0.00	(constrained)		0.00	(constrained)	
Education	-0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.33

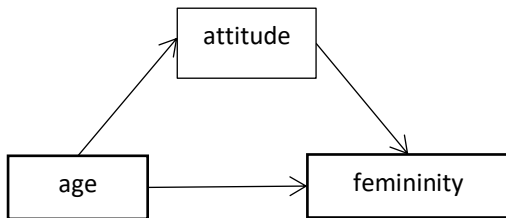


Figure 8. The mediation effect of online shopping behavior on the association between age and femininity

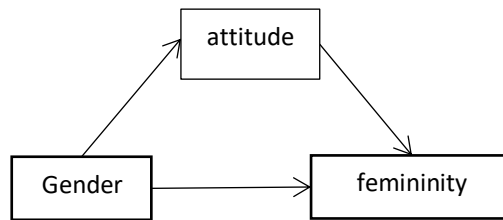


Figure 7. The mediation effect of online shopping behavior on the association between gender and femininity

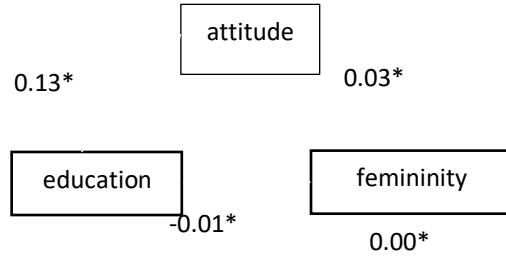


Figure 10. The mediation effect of online shopping behavior on the association between years of education and femininity

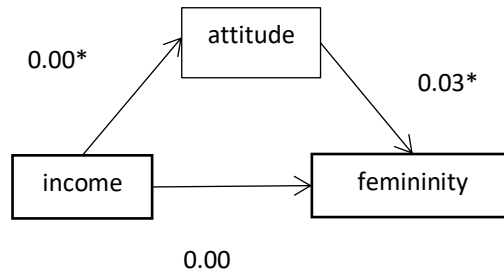


Figure 9. The mediation effect of online shopping behavior on the association between income level and femininity

Table 7. Mediation effect analysis of online shopping on masculinity

		OIM		
		Coef.	Std. Err.	P-value
Structural				
Attitudes				
	Gender	-0.36	0.04	0.00
	Age	-0.05	0.00	0.00
	Income	0.00	0.00	0.00
	Education	0.13	0.00	0.00
	_cons	3.04	0.09	0.00
Masculinity				
	Attitudes	0.08	0.01	0.00
	Gender	0.30	0.03	0.00
	Age	0.00	0.00	0.49
	Income	0.00	0.00	0.00
	Education	0.01	0.00	0.01
	_cons	2.65	0.07	0.00

var(e.attitude)	2.60	0.04
var(e.masculinity)	1.38	0.02

Table 8. Direct, indirect and total effects of mediation analysis

	Direct effects			Indirect effects			Total effects		
	OIM			OIM			OIM		
	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value
Structural									
Attitudes									
Gender	-0.36	0.04	0.00	0.00	(no path)		-0.36	0.04	0.00
Age	-0.05	0.00	0.00	0.00	(no path)		-0.05	0.00	0.00
Income	0.00	0.00	0.00	0.00	(no path)		0.00	0.00	0.00
Education	0.13	0.00	0.00	0.00	(no path)		0.13	0.00	0.00
Masculinity									
Attitudes	0.08	0.01	0.00	0.00	(no path)		0.08	0.01	0.00
Gender	0.30	0.03	0.00	-0.03	0.00	0.00	0.27	0.03	0.00
Age	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.00
Income	0.00	0.00	0.00	0.00	(constrained)		0.00	0.00	0.00
Education	0.01	0.00	0.01	0.01	0.00	0.00	0.02	0.00	0.00

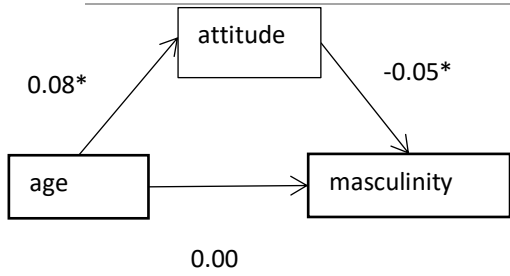


Figure 12. The mediation effect of online shopping behavior on the association between age and masculinity

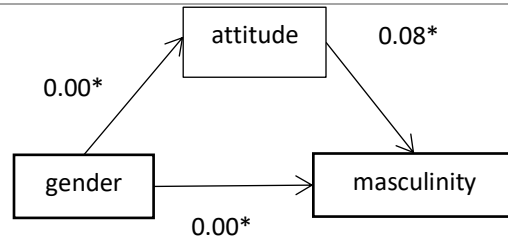


Figure 11. The mediation effect of online shopping behavior on the association between gender and masculinity

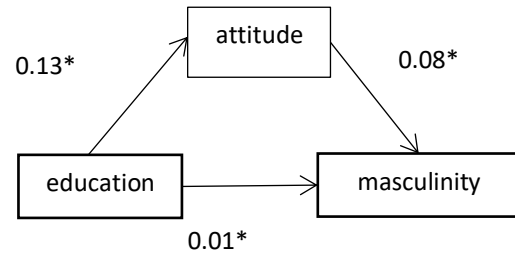


Figure 14. The mediation effect of online shopping behavior on the association between years of education and masculinity

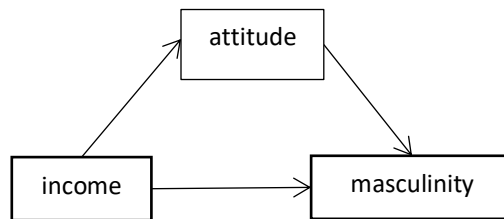


Figure 13 The mediation effect of online shopping behavior on the association between income level and masculinity

6. DISCUSSION

6.1. Gender Discrepancy

The results show a clear gender gap in online shopping behaviors. Women tend to regard online shopping as more favorable and shop online more frequently, but the amount of money they spent online does not significantly differ from that of men. This phenomenon probably results from the rise of “she-economy”, where businesses target female consumers, boosting their consumption through intensive marketing. Those businesses typically manipulate color, text, typography, symbols, and icons to psychologically influence potential consumers and convey messages of their interests (Chen & Cheung, 2020).

However, women’s socioeconomic status has not significantly improved, as seen in the amount of money they eventually spend online. Even if they shop more frequently online and enjoy this activity, they have a budget constraint. The budget constraint mainly results from gender pay gap: on average, a working woman in China gets paid 78.2 cents for every dollar a man earns (Zheng, 2019). Workplace inequality led to the facts that women receive lower salary than their male counterparts for the same work. The other reason is gender stratification in career choice, where women tend to hold occupations with lower salaries. In fact, the term pink-collar job was framed to describe care-oriented jobs that are historically female-dominated and pay less than blue-collar and white-collar jobs. In addition, women share a large proportion of domestic chores and caregiving as unpaid labors.

The mediation analysis also reveals some interesting results. The statistics show that gender identity is indirectly influenced by gender with the mediation of the attitudes towards online shopping. The association is reasonable: gender roles affect people’s perception of online shopping; favorable attitude toward online shopping stimulates more purchases online, increasing exposure to the products and advertisements online. In addition, favorable attitude toward online shopping promotes acceptance of the information conveyed by the products and advertisements. Either way, online shopping influences people’s gender identity, strengthening their self-perception based on their biological gender.

6.2. Rural vs urban

The multivariate linear regressions show that urban/rural residency does influence the attitudes towards online shopping and the frequency of online shopping, which is possibly because rural residents are more conservative in terms of purchasing habits. It might also be a result of Inconvenience. On the one hand, rural areas typically have weaker transportation system, thus making logistics inconvenient. On the other hand, since buildings and facilities in rural areas are usually more scattered, the residents might need to travel farther for the delivery box, making online shopping subjectively less appealing.

However, the place of residency does not significantly influence the amount of money spent on online shopping, which is a more objective reflection of the person’s online purchasing ability. There are several potential explanations. First, it might indicate that the government’s efforts of poverty elimination have improved the income level of rural residents. With rising income, the purchasing power discrepancy between rural and urban residents is narrowing. Second, the place

of residency might not accurately reflect the person's hukou, the Chinese household registration system, which in many circumstances differentiate the public services that urban and rural residents receive. Some people might live in urban areas but still hold rural hukou, which hinders them from receiving the public services enjoyed by people with urban hukou, and vice versa. Thus, the purchasing power discrepancy is not fully illustrated by the statistics.

6.3. Other variables

As suggested by the results of the multivariate linear regressions, age is significantly associated with the frequency of and attitude toward online shopping. The results align with our commonsense: younger generations are more open to new ideas and technologies. Generation Z, which refers to people born between 1997 and 2012, are especially familiar with the internet. Nevertheless, age is not significantly associated with the amount of money spent on online shopping, indicating that even the young prefer online shopping, their spending online does not significantly exceed the old because they have limited financial abilities.

The multivariate linear regressions also demonstrate that employment status and years of education, which largely indicate a person's socioeconomic status, are associated with the frequency of and attitudes towards online shopping. The results again make sense: higher level of education makes people more open-minded when confronting new things and thereof potential risks; also, people with higher educational generally earn higher income, thus having greater purchasing power to shop online. With respect to employment status, employed people might have greater purchasing power and better future expectations. Thus, they shop online more frequently and hold more positive attitude toward the activity. Unemployed people, in contrast, might lack stable source of income and suffer from have greater anxiety, so they engage less frequently in online shopping and hold relatively negative attitude toward it. Interestingly, employment status is not significantly associated with the amount of money spent on online shopping. This is probably because people tend to make a certain amount of purchases online to satisfy their needs and wants regardless of employment status. Also, employment status alone might not accurately reflect a person's ultimate purchasing power and expectations, because some employed people might have very low or unstable income, while some who are unemployed might in fact have handsome income due to unemployment compensations.

Regarding the mediation analysis, the effects of age, income, and years of education are hardly mediated by online shopping behaviors. The mediation effect is only present in the association between years of education and the masculine trait. A possible explanation is that education level significantly affects the extent to which people are open to new ideas. While masculine traits, i.e., communal/expressive personality traits, have been traditionally valued over feminine traits, mass media online will likely spread masculinity more abundantly. Therefore, people with greater years of education will more easily accept the messages encouraging masculinity

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