SIN-CHN
SCIENTIFIC PRESS PTE.LTD.

Molecular & Cellular Biomechanics 2025, 22(4), 1066.
https://doi.org/10.62617/mcb1066

Article

College students' biomechanical behavior on online music purchase intention a mediating role model

Kai Song

College of Music and Dance, Aba Teachers University, Aba 623002, China; abwcsm@163.com

CITATION

Song K. College students' biomechanical behavior on online music purchase intention a mediating role model. Molecular & Cellular Biomechanics. 2025; 22(4): 1066. https://doi.org/10.62617/mcb1066

ARTICLE INFO

Received: 10 December 2024
Accepted: 24 February 2025
Available online: 10 March 2025

Abstract: The biomechanical behavior of college students, particularly their physical interactions with digital devices, significantly influences their intention to purchase online music, with the perceived ergonomic value of online music platforms playing a crucial role in this influence process. College students' perception of online music is closely related to their biomechanical habits, such as posture, hand-eye coordination, and repetitive motion patterns during device usage. This study establishes a mediating model to investigate the relationship between college students' biomechanical behavior and their intention to purchase online music. The findings indicate that factors such as ergonomic comfort, movement efficiency, and physical fatigue positively predict college students' intention to purchase online music. Perceived ergonomic value acts as a mediator between biomechanical behavior and purchase intention, partially mediating the impact of physical comfort, movement efficiency, and fatigue reduction on online music purchase decisions. This study highlights the importance of integrating biomechanical principles into the design of online music platforms to enhance user experience and purchase intention.

Keywords: biomechanical behavior; perceived value; online music purchase intention; mediation model; posture; movement efficiency

1. Introduction

Online music service refers to the process that users pay music fees through membership subscription and digital music purchase. The implementation of the online music service comes from the process after the user's online music purchase. With the continuous improvement of the copyright environment and the increasing willingness to pay, online music purchases have also developed rapidly. According to statistics, the number of online music client users in China reached 744 million in 2023, an increase of 3.7% year-on-year. Among them, the post-90s and post-00s users account for up to 54%, and they are also contemporary college students, becoming the main force of the market [1].

The relationship between college students' purchasing behavior and biology is a topic worth exploring. Individual purchasing behavior, including the purchase of online music, is not only the result of socioeconomic factors, but also deeply influenced by biological characteristics. For example, individual neurotic traits, that is, individual differences in emotional stability, may influence their intention to purchase online music. Individuals with higher neuroticism may be more susceptible to mood swings and thus more inclined to seek emotional gratification by purchasing online music [2]. In addition, an individual's music preference and purchasing behavior may also be related to the structure and function of their brain, which further emphasizes the important role of biological factors in individual purchasing

behavior [3]. At the same time, online music can also bring music related to the mood of college students, arouse their resonance. Some studies also show that consumers' lifestyles have a significant impact on their purchase decisions [4]. They are more likely to be influenced by their own living environment and peers in the purchase process, resulting in different purchase attitudes and perceived utility, which ultimately have a positive indirect impact on purchase behavior. Studying the relationship between college students' online music purchases and biology can help us to understand more deeply the complex mechanisms behind this behavior. Especially in the era of online music payment, how about college students' willingness to buy online music? What factors affect college students' intention to buy online music? Among many factors, different lifestyles may lead to different purchase intentions of college students. In addition to the lifestyle of college students, what factors are affected by it urgently needs further research and analysis so as to provide certain references and a basis for the improvement of college students' purchase intention of online music.

For example, perceived value and neuroticism will affect college students' purchase intention of online music to some extent. Then, what is the relationship between these factors? Further literature review is needed and relevant hypotheses are proposed.

2. Literature review and hypothesis formulation

College students' purchase intention of online music is influenced by their lifestyle, neuroticism and perceived value of online music. How these factors influence each other and apply to purchase intention still needs to be further clarified.

2.1. Lifestyle and online music purchase intention

The online music market is a dynamic market, which not only reflects the development trend of the music industry but also reveals the consumption habits and preferences of consumers, especially college students. The lifestyle of college students, as a multi-dimensional concept, covers many aspects such as their values, interests, and daily behaviors, which together shape their views and needs for online music. Lifestyle refers to the life characteristics of a certain group or social grassroots. At the same time, lifestyle is also a characteristic of an individual's attitudes, beliefs, expectations, and even prejudices, which are reflected in the daily control of time, money, and energy. Behind consumers' individual attitudes are their different lifestyles. Lifestyle can reflect the habits of individuals in life practice and the way of using time and money. Choi [5] believes that lifestyle significantly promotes consumers' purchase satisfaction and purchase intention. Consumers' different ways of living will have different effects on their purchase intention and behavior [6,7]. The pursuit lifestyle of consumers further increases consumers' repurchase intention [8]. For college students, their lifestyle will also have a more significant impact on their purchase intention [9]. In the research on the relationship between lifestyle and purchase intention, Iliana [10] believes that purchase intention shows a positive correlation with a healthy, optimistic, family-oriented and diligent

lifestyle. Studies have shown that different lifestyles also have a certain impact on the purchase intention prediction process of online products [11]. From the perspective of the theory of planned behavior, consumer purchase behavior can be understood as a purposefully planned activity in which individual attitudes, subjective norms and perceived behavioral control work together to affect their purchase intention and actual purchase behavior [12]. Under the framework of the theory of planned behavior, consumers' lifestyles, as an important factor affecting their attitudes and subjective norms, further shape their purchase intention. Other studies have shown that the development of music is also related to people's lifestyles. In particular, with the continuous development of online music, consumers choose to buy music to satisfy their own lifestyle [13]. From the above research, we can see that college students' lifestyle is one of the important factors affecting their music purchase intention. However, what kind of lifestyle can effectively improve college students' online music purchase intention? There is no more research to prove. Pan [14] believes that the lifestyle can be fashion taste, perfectionism and freedom, as well as aggressive, moderate and reserved. The effects and consequences of different lifestyles are also different. According to Maslow's hierarchy of needs theory, college students will pay more attention to social needs, respect needs and self-realization needs after meeting the basic physiological needs and safety needs. Correspondingly, college students prefer music that is consistent with their self-identity and social affiliation. According to Hassani and Jafari [4], lifestyle is significantly related to online shopping decisions, which provides a theoretical basis for this study. Therefore, college students may pay more attention to the spiritual satisfaction and emotional resonance brought by music when choosing an online music purchase.

Based on the above research background and theoretical basis, this paper puts forward the following hypotheses:

H1: Lifestyle can significantly affect college students' online music purchase intention.

H1a: Fashion taste, perfectionism and free lifestyle can positively predict college students' online music purchase intention.

College students' online music purchase intention is not only related to their lifestyle but also related to perceived value. Perceived value can be used for a consumer's perception of the value of a certain good or service. As for the definition of perceived value, Zeithaml [15] believes that perceived value is the comprehensive evaluation that consumers finally obtain after comparing and weighing their perceived value benefits with the cost of goods and services in the purchase process. This definition has been recognized by more scholars. For example, perceived value refers to consumers' comprehensive evaluation and preference for product performance. Similarly, Lee [7] proposed that perceived value is the comprehensive evaluation obtained by consumers after comparing their actual consumption with the quality of consumption experienced. This comprehensive evaluation will have a certain impact on the consumer's purchase intention [16]. When consumers perceive the value of online music experiences, they will be stimulated to generate purchase preferences [17]. Other studies have shown that perceived value is affected by consumers' lifestyles, and when consumers pay attention to products that are in line

with their lifestyles, the perception of product value is more conducive to consumers' perception of product value [18,19]. Akkaya [20] empirically analyzed the relationship between lifestyle, brand value perception and purchase intention by selecting product categories and adopting a variety of analysis methods. The study points out that lifestyle segmentation cannot be defined as the main and direct driver of brand purchase intention, while the perceived value of consumers influenced by lifestyle significantly affects purchase intention, and this value mapping varies across product categories.

Similarly, according to Maslow's hierarchy of needs theory, college students will pay more attention to social needs, respect needs and self-actualization needs after meeting the basic physiological needs and safety needs. Therefore, their perceived value of online music is not limited to the quality of the music itself, but also includes the lifestyle and emotional resonance that the music represents. College students may be more inclined to choose music products that can reflect their personality, values and attitude towards life. When college students face online music, they are affected by their own perceived value of online music, which includes cognitive value, emotional value and social value. Therefore, this study proposes a hypothesis:

H2: Perceived value plays a mediating role between college students' lifestyle and online music purchase intention.

H2a: Cognitive value plays a mediating role between college students' lifestyle and online music purchase intention.

H2b: Emotional value plays a mediating role between college students' lifestyle and online music purchase intention.

H2c: Social value plays a mediating role between college students' lifestyle and online music purchase intention.

2.2. Lifestyle, neuroticism and online music purchase intention

Fashion taste, perfectionism, and advocacy of freedom are common dimensions of lifestyle among contemporary college students, which have shaped their consumption concepts and behavior patterns to a large extent. Fashion taste represents the pursuit of popular culture and novelty, and this pursuit is particularly significant in the online music market because online music is often closely linked to popular culture and can quickly reflect social hot spots and aesthetic trends of youth groups. Therefore, college students with fashion taste are more likely to show their personality and taste by buying online music.

Neuroticism is a personality trait that is often associated with mood instability, anxiety, and impulsive behavior [21]. Studies have shown that neuroticism may affect consumers' purchasing decisions [22] and thus consumer behavior [23]. It is not difficult to see that neuroticism will affect the purchase intention of consumers to a certain extent. In addition, to some extent, neuroticism shows the individual's own emotional stability. Individuals with higher levels of neuroticism are less susceptible to external environmental factors, such as brands and friends [24]. For individuals with low levels of neuroticism, they may change their purchase intention in surface communication and exchange. Some scholars have clearly found in their research

that neuroticism plays a certain role in promoting consumers' online purchase processes; that is, neuroticism plays a regulatory role in the relationship between consumers' perceived value and attitudes, trust and behavioral tendency [1]. Online music purchase is a typical online consumption model, which is influenced by music reviews and netizens in the online environment. The different levels of individual neuroticism bring different purchase experiences, which affect the individual's perceived value and online music purchase intention. Therefore, this paper puts forward the following hypothesis:

H3: Neuroticism has a positive moderating effect between perceived value and online music purchase intention of college students.

3. Research design

3.1. Variable measurement

Dependent variable: Online music purchase intention (PI). The purchase intention questionnaire prepared by Tang [25] was used in this study to take into account the purchase characteristics of online music. The questionnaire was revised to form 4 items, namely, "I am willing to buy online music", "When I need music, online music is my first choice", "I will recommend the purchased online music to my friends" and "I will continue to buy online music in the future". Variables were measured using Linket 5-point scoring, with options including strongly disagree, somewhat disagree, uncertain, somewhat agree, and strongly agree, assigned a value of 1 to 5, respectively. After preliminary questionnaire distribution and testing, Cronbach's α coefficient was 0.841.

Independent variable: Lifestyle (LS). Since the respondents in this study are all college students in China, and the online music purchased by many college students includes not only modern pop music, but also classical music. The specific dimension of the lifestyle chosen in this study should be able to reflect the characteristics of modern pop music, and should reflect the characteristics of classical music. Therefore, the lifestyle scale developed by Pan [26] was used in this study, including five dimensions of fashion taste (FT), moderation (MD), perfectionism (PF), aggressiveness (AG) and advocation of freedom (AF). These factors are considered to be significantly representative of the contemporary group of college students and to be closely related to their consumption behavior. Fashion taste reflects college students' pursuit of trends and new things, while moderation reflects the conservative and sedated life attitude of some college students. Perfectionism reveals college students' persistence in the pursuit of excellence and detail, while aggressiveness reveals their desire for personal growth and success. Advocating freedom reflects college students' emphasis on individuality expression and self-realization. Variables were measured using Linket 5-point scoring, with options including strongly disagree, somewhat disagree, uncertain, somewhat agree, and strongly agree, assigned a value of 1 to 5, respectively. After preliminary questionnaire distribution and testing, Cronbach's α coefficients of each dimension were 0.868, 0.634, 0.782, 0.763, 0.759, respectively.

The mediating variable is perceived value (PV). This study is adjusted based on Zeithaml's perceived value dimension, and divides college students' perceived value

of online music into three dimensions, namely cognitive value (CV), emotional value (EV) and social value (SV). The fitting index of the structural model is 1. χ^2/df = 2.99, RMR = 0.032, RMSEA = 0.045, GFI = 0.874, CFI = 0.841, TLI = 0.745. Among them, the online music satisfaction and online music engagement scales were selected as the criterion scales. The results showed that the correlation coefficients of the total scale of perceived value of online music, each subscale and the criterion scale were from 0.361 to 0.705, which had good construct validity. The internal consistency reliability of the total scale of college students' perceived value of online music was 0.896, which had good reliability.

Moderating variable: Neuroticism (NE). In this study, the Chinese Big Five Personality (CBE-PI-B) compiled by Wang [27] was selected, including 8 questions, and Likert 1–6 was used for scoring. A higher score on the scale indicates a higher level of individual neuroticism. The Cronbach's α coefficient of the scale was 0.838.

Control variables: According to existing studies, demographic variables such as gender, whether the only child, and monthly disposable income may have an impact on college students' lifestyle, agreeability, and online music purchase intention. Gender and single child were dichotomous variables (1 = male, 0 = female; 1 = an only child, 0 = not an only child); monthly disposable income was used as a continuous variable, and the monthly disposable income of college students was directly asked. The effect of other psychological variables was not considered in this study, mainly because of the limited scope and objectives of the study. In the context of limited research resources and time, focusing analysis on specific demographic variables can provide clearer and more specific findings.

The questionnaire design was reviewed by a panel of experts to ensure the relevant content validity of the selected questions.

3.2. Data collection and sample characteristics

In this study, a questionnaire was used to collect data. The questionnaire was distributed through the network platform, and students from 5 colleges and universities in ** area were interviewed. A total of 1440 valid questionnaires were collected in this questionnaire distribution. The sample statistics results are as follows:

In terms of gender characteristics, males accounted for 61.25%, higher than females 38.78%; Whether the only child, only child accounted for 39.79%, non-only child accounted for 60.21%; Monthly disposable income, less than 500 yuan accounted for 10.83%, 501–1000 yuan accounted for 27.08%, 1001–2000 yuan accounted for 31.25%, 2001–3000 yuan accounted for 18.75%, more than 3000 yuan accounted for 12.08%.

3.3. Statistical methods

In this study, SPSS 26.0 was used for descriptive statistics, difference analysis, and mediating effects. Specifically, the Harman single-factor test was used to evaluate common method variation. Descriptive statistical analysis was conducted on college students' lifestyle, neuroticism, perceived value, online music purchase intention, and all dimensions, and the difference analysis was conducted by

independent sample *t*-test and *F*-test. The Poisson model is used to replace the Poisson model, and its robustness is tested. Regression analysis was used to test the model and further verify the mediated model between the variables.

4. Research results

4.1. Common method bias test

The data obtained in this study came from questionnaires of college students and were realized by self-reports of college students, which may suffer from common method bias. Harman's one-factor test was used to evaluate common method variation in this study. Using principal component analysis with maximum variance rotation, there are 10 factors whose eigenvalues are greater than 1, and the first factor explains 23.01% of the variance. This variation is less than 40%. Therefore, this study does not suffer from severe common method bias.

4.2. Descriptive statistics and correlation analysis

Table 1 shows the mean, standard deviation and variable correlation coefficient of each variable. Lifestyle and online music purchase intention ($r = 0.388$, $p < 0.001$; $r = 0.114$, $p < 0.001$; $r = 0.220$, $p < 0.001$; $r = 0.182$, $p < 0.001$; $r = 0.187$, $p < 0.001$). Perceived value and online music purchase intention ($r = 0.262$, $p < 0.001$; $r = 0.254$, $p < 0.001$; $r = 0.300$, $p < 0.001$; $r = 0.296$, $p < 0.001$). The analysis data show that the relationship is basically consistent with the prediction theory, which provides preliminary data and theoretical support for the following hypothesis testing work.

Table 1. Mean value, standard deviation and correlation coefficient of each variable ($n = 1440$).

Variables	Mean	Sd.	FT	MD	PF	AG	AF	CV	EV	SV	PI	NE
FT	2.80	0.89	1									
MD	3.21	0.87	0.240***	1								
PF	3.43	0.96	0.327***	0.341***	1							
AG	3.51	0.93	0.266***	0.266***	0.682***	1						
AF	3.75	1.32	0.177***	0.312***	0.602***	0.682***	1					
CV	3.62	1.01	0.262***	0.232***	0.318***	0.346***	0.337***	1				
EV	3.65	1.02	0.300***	0.379***	0.354***	0.363***	0.301***	0.243**	1			
SV	3.59	0.98	0.368***	0.361***	0.329***	0.327***	0.325***	0.272**	0.228***	1		
PI	2.81	1.05	0.388***	0.114***	0.220***	0.182***	0.187***	0.254***	0.300***	0.296***	1	
NE	2.75	0.98	0.243***	0.357***	0.129***	0.134***	0.112***	0.101***	0.041	0.001	0.138***	1

*, **, *** indicate significant correlations at the 0.05, 0.01, and 0.001 levels (two-tailed), respectively.

4.3. Difference analysis

In order to test the difference analysis of each variable in demography, the variables and their dimensions were subjected to an independent sample *t*-test on gender and whether they were the only child, and a one-way ANOVA was performed on monthly disposable income. The results showed that the scores of moderation ($t = -5.473$, $p < 0.001$) and advocating freedom ($t = -2335$, $p < 0.05$) of males were

significantly lower than those of females. Only children showed significant differences in perceived value ($t = 4.513$, $p < 0.001$), online music purchase intention ($t = 7.523$, $p < 0.001$), fashion taste ($t = 2.347$, $p < 0.001$), perfectionism ($t = 3.672$, $p < 0.001$ $p < 0.001$) and advocating freedom ($t = 2.472$, $p < 0.001$) were significantly higher than those of non-only children. Perceived value ($F = 9.122$, $p < 0.001$), online music purchase intention ($F = 21.552$, $p < 0.001$), fashion taste ($F = 19.523$, $p < 0.001$), perfectionism ($F = 7.235$, $p < 0.001$), aggression ($F = 12.412$, $p < 0.001$) and advocation of freedom ($F = 17.632$, $p < 0.001$) had significant differences in monthly disposable income. This shows that the lower the monthly disposable income, the lower the score of the above scale and its dimensions. Due to the significant differences in gender, whether the only child and monthly disposable income, in the subsequent research, this study takes gender, whether the only child and monthly disposable income as control variables for research and analysis.

4.4. Model checking

4.4.1. The predictive effect of lifestyle and perceived value on online music purchase intention

As can be seen from the correlation analysis in the previous section, the dimensions of lifestyle and perceived value have a significant correlation with the purchase intention of online music. In order to further explore the predictive effect of lifestyle on the purchase intention of online music, this study defined the control variables, and carried out the regression analysis of PV and PI, respectively, as shown in **Tables 2** and **3**.

Table 2. Regression analysis of PV.

Variables	Unstandardized coefficient		Coefficient of standard Beta distribution	*t*	*p*
	Estimated value of *B*	Standard error			
Constant	1.239	0.085	-	13.412	0.000***
Sex	0.002	0.002	0.027	1.07	0.007**
Single-child	0.026	0.023	0.024	1.146	0.001**
Income	0.185	0.021	0.233	8.963	0.000***
FT	0.245	0.020	0.278	11.262	0.000***
MD	0.219	0.020	0.286	10.322	0.000***
PF	0.312	0.022	0.352	12.026	0.000***
AG	0.295	0.023	0.265	9.265	0.000***
AF	0.265	0.011	0.159	8.621	0.000***

Dependent variable: PV. * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

The results in **Table 2** show that lifestyle has a significant positive impact on perceived value ($\beta = 0.278$, $p < 0.001$; $\beta = 0.286$, $p < 0.001$; $\beta = 0.352$, $p < 0.001$; $\beta = 0.265$, $p < 0.001$; $\beta = 0.159$, $p < 0.001$). When college students' lifestyles show fashion taste, moderation, perfectionism, aggressiveness, and advocation of freedom, their perceived value of online music will be higher.

Table 3. Regression analysis of PI.

Variables	Unstandardized coefficient		Coefficient of standard Beta distribution	*t*	*p*
	Estimated value of *B*	Standard error			
Constant	−1.320	0.162	-	−8.160	0.000***
Sex	0.553	0.066	0.262	8.355	0.000**
Single-child	0.572	0.058	0.300	9.844	0.000**
Income	0.367	0.049	0.206	7.572	0.000**
FT	0.219	0.000	0.202	2.188	0.000***
MD	0.297	0.000	−0.044	2.969	0.092
PF	0.941	0.116	0.086	8.105	0.000***
AG	0.172	0.000	−0.038	1.719	0.152
AF	0.282	0.348	0.160	8.105	0.000***
CV	0.219	0.000	0.204	2.188	0.000***
EV	0.297	0.000	0.282	2.969	0.000***
SV	−0.156	0.000	0.114	−1.563	0.000***

Dependent variable: PI. * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

The results in **Table 3** showed that fashion taste, perfectionism and freedom had significant predictive effects on online music purchase intention ($\beta = 0.202$, $p < 0.001$; $\beta = 0.086$, $p < 0.05$; $\beta = 0.160$, $p < 0.001$), while moderation and aggressiveness had no significant predictive effect on online music purchase intention ($\beta = -0.044$, $p > 0.05$; $\beta = -0.038$, $p > 0.05$). Cognitive value, emotional value and social value had significant predictive effects on online music purchase intention ($\beta = 0.204$, $p < 0.001$; $\beta = 0.282$, $p < 0.001$; $\beta = 0.114$, $p < 0.001$).

When the beta was 0.202, the positive effect of perceived value on online music purchase intentions increased by 20.2% for every one-unit increase in the fashion taste score.

4.4.2. Robustness test

Table 4. Robustness tests.

Variables	Replacement of model	
	(1)	(2)
LS	1.084*** (4.124)	1.512*** (3.121)
Controls	Y	Y
Term of intercept	−0.078*** (−10.021)	−0.046*** (−10.023)
N	1440	1440
Adj-R^2/LR chi2	163.120***	186.215***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

This paper further uses model replacement to improve the robustness of the estimation results. The lifestyles of college students studied in this paper are all positive numbers that are not zero, so there is no missing situation. On the one hand, this paper uses a Poisson model replacement to test its robustness. The results are

shown in **Table 4** (1), which shows that the promoting effect of sports events on the release of residents' consumption potential is still significant. This further validates the robustness of the previous findings. On the other hand, the negative binomial regression model was tried to test, and the results are shown in column (2) of **Table 4**, which also supports the conclusion that fashion taste, perfectionism and advocating a free lifestyle can positively predict college students' online music purchase intention.

4.4.3. Endogeneity test

In theory, college students' lifestyle is the core element to improve their online music purchase intention, and the change of their lifestyle will directly affect the perceived value of college students, thus having a significant impact on their online music purchase intention. At the same time, the change of online music purchase intention may also affect college students' lifestyles to some extent. In addition, the mechanism will be affected by other control variables, forming a potential endogeneity problem. In addition, in the empirical analysis of this paper, considering the limitation of data or research perspective, there may be the omission of important explanatory variables, which further increases the endogeneity problem and causes the ambiguity of causal relationship identification. In order to solve the above problems, the instrumental variable method, PSM and Heckman two-stage estimation method were introduced to test the endogeneity. The test results are shown in **Table 5**.

Table 5. Endogeneity tests.

Indicators	Instrumental variable method			(4) PSM	Heckman two-stage regression method	
	(1) First-stage OLS regression	(2) Test of exclusivity	(3) Second-stage OLS regression		(5) First-stage Probit regression	(6) Second-stage OLS regression
LS		0.276*** (4.068)	0.285* (1.087)	0.587*** (3.026)	0.691*** （3.037）	3.029*** (18.097)
LS_Mean	0.954*** (29.021)	0.142 (0.027)				
Mills						6.032*** (22.029)
Controls	Y	Y	Y	Y	Y	Y
Term of intercept	−0.039*** (11.123)	−0.037*** (13.098)	−0.041** (14.033)	−0.038** (10.067)	−0.045** (19.419)	−0.043** (20.187)
N	2400	2400	2400	2400	2400	2400
Adj-R^2/LR chi2	0.085	0.085	0.085	0.089	187.566***	0.102

Note: *t*-values after heteroscedasticity adjustment are in parentheses. ***, **, and * indicate significance of the two-tailed test at the 1%, 5%, and 10% level, respectively; the following tables are the same.

1) Instrumental variable method. In this paper, the mean score of the lifestyle survey is used as the instrumental variable, and the test results are reported in columns (1)~(3) of **Table 5**. It can be seen that the estimation results of the significant correlation between the instrumental variable in column (1) and the online music purchase intention and the exclusivity test results in column (2)

indicate that the instrumental variable in this paper is selected appropriately. Under the estimation of the instrumental variable method, the estimation results of the second stage in column (3) show that college students' lifestyles still have a significant impact on their online music purchase intention.

2) Propensity score matching (PSM). According to the PSM method to control the problem of sample selection bias, the median lifestyle score of college students was used as a grouping variable to construct the treatment group and the control group. The treatment group was the data greater than the median, and the control group was the data less than the median. At the same time, gender, whether the only child, and monthly disposable income were used as matching variables (through the balance test), and the influence of college students' lifestyle on online music purchase intention was estimated again based on the 1:1 nearest neighbor matching method. The estimation results in **Table 5** (4) show that under the estimation of the PSM method, college students' lifestyles still have a significant impact on their online music purchase intention.
3) Heckman two-stage regression method. A Heckman two-stage regression method was used to control the sample self-selection problem, and columns (5) and (6) of **Table 5** report the estimation results under the Heckman two-stage regression method. The results show that college students' lifestyles still have a significant impact on online music purchase intention, indicating that the model estimation result of this study has certain robustness, and further verifying that the endogeneity problem of the model has been effectively controlled, so as to make the identification of causality more clear.

4.4.4. Test of mediation effect

To realize the mediation effect test, this study was conducted by hierarchical regression analysis. In this study, direct effects and mediating effects were tested according to the hierarchical regression method, and the regression equations constructed were shown in Equations (1)–(3) below.

$$Y = cX + e_1 \tag{1}$$

$$Me = aX + e_2 \tag{2}$$

$$Y = c'X + bMe + e_3 \tag{3}$$

Table 6 shows that fashion taste, perfectionism and advocating freedom have significant positive predictive effects on online music purchase intention (c = 0.214; c = 0.318; c = 0.211); Fashion taste also had a significant positive predictive effect on cognitive value, emotional value and social value (a = 0.257; a = 0.202; a = 0.183); perfectionism had a significant positive predictive effect on cognitive value, emotional value and social value (a = 0.222; a = 0.246; a = 0.252); advocating freedom had a significant positive predictive effect on cognitive value, emotional value and social value (a = 0.181; a = 0.112; a = 0.267). Cognitive value, emotional value and social value also had significant positive predictive effects on online music purchase intention (b = 0.082; b = 0.112; b = 0.161); when the perceived value was put into the model as a mediator variable, the positive predictive effect of each

dimension of lifestyle on online music purchase intention became less significant (*c*' = 0.165; *c*' = 0.224; *c*' = 0.230).

Table 6. Analysis of mediating effects.

	PI	**CV**	**EV**	**SV**	**PI**
Constant	−0.514** (−4.565)	1.531** (6.449)	1.236** (6.336)	0.628** (3.212)	−1.056** (−5.396)
Sex	0.118* (2.419)	−0.035 (−0.659)	0.022 (0.429)	0.049 (0.929)	0.111* (2.355)
Single-child	0.321** (8.450)	0.184** (2.727)	0.016 (0.264)	0.047 (0.653)	0.387** (7.563)
Income	0.021 (0.766)	−0.027 (−0.875)	−0.046 (−1.520)	−0.000 (−0.017)	0.029 (1.115)
FT	0.214** (7.063)	0.257** (5.510)	0.202** (7.223)	0.183** (5.699)	0.165** (5.540)
PF	0.318** (10.258)	0.222** (7.036)	0.246** (8.824)	0.252** (8.866)	0.224** (7.579)
AF	0.211** (11.875)	0.181** (6.402)	0.211** (7.656)	0.267** (8.574)	0.230** (8.281)
CV					0.082** 4..273)
EV					0.112** (3.147)
SV					0.161** (5.027)
Sample size	1440	1440	1440	1440	1440
R^2	0.462	0.243	0.316	0.319	0.407
Adjust R^2	0.478	0.234	0.307	0.304	0.398
F value	*F* (13.1033) = 72.265, *p* = 0.000	*F* (13.1033) = 21.236, *p* = 0.000	*F* (13.1033) = 35.124, *p* = 0.000	*F* (13.1033) = 37.382, *p* = 0.000	*F* (16.1030) = 69.233, *p* = 0.000

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$, Each variable in the table is put into the regression equation using the mean (*t*-value in parentheses).

The total dimensions of college students' lifestyle and perceived value were tested, and the results of the mediating effect analysis are shown in **Table 7**.

Table 7. Summary of the mediation effect test results.

Item	***c***	***a***	***b***	***a* × *b***	***a* × *b* (Boot SE)**	***a* × *b* (z)**	***a* × *b* (*p*)**	***a* × *b* (95% BootCI)**	***c*'**	**Conclusion**
FT → CV → PI	0.214**	0.257**	0.082**	0.021	0.006	2.591	0.010	0.004~0.027	0.165**	Partial mediation
FT → EV → PI	0.214**	0.202**	0.112**	0.023	0.007	3.507	0.000	0.010~0.040	0.165**	Partial mediation
FT → SV → PI	0.214**	0.183**	0.161**	0.030	0.008	3.711	0.000	0.013~0.044	0.165**	Partial mediation
PF → CV → PI	0.318**	0.222**	0.082**	0.029	0.007	2.651	0.008	0.006~0.036	0.224**	Partial mediation
PF → EV → PI	0.318**	0.246**	0.112**	0.028	0.009	3.424	0.001	0.013~0.050	0.224**	Partial mediation
PF → SV → PI	0.318**	0.252**	0.161**	0.041	0.010	4.560	0.000	0.025~0.064	0.224**	Partial mediation
AF → CV → PI	0.211**	0.181**	0.082**	0.015	0.007	2.546	0.011	0.006~0.034	0.230**	Partial mediation
AF → EV → PI	0.211**	0.112**	0.112**	0.013	0.008	3.294	0.001	0.011~0.043	0.230**	Partial mediation
AF → SV → PI	0.211**	0.267**	0.161**	0.043	0.011	4.481	0.000	0.027~0.068	0.230**	Partial mediation

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

Table 8 shows that college students' lifestyle has a significant positive predictive effect on online music purchase intention (c = 0.462). College students' lifestyle also had a significant positive predictive effect on the perceived value of the mediating variable (a = 0.453). The mediating variable perceived value also had a significant positive predictive effect on online music purchase intention (b = 0.389). When the perceived value was added into the model as a mediator variable, the positive predictive effect of the independent variable on the dependent variable became less significant (c' = 0.404).

Table 8. Analysis of mediating effects for the total dimension.

	PI	**PV**	**PI**
Constant	−0.514** (−4.565)	1.231** (8.365)	−1.056** (−5.396)
Sex	0.118* (2.419)	0.014 (0.388)	0.111* (2.355)
Single-child	0.321** (8.450)	0.064 (1.784)	0.387** (7.563)
Income	0.021 (0.766)	−0.025 (−1.368)	0.029 (1.115)
LS	0.462** (26.5867)	0.453** (27.663)	0.404** (25.083)
PV			0.389** (11.572)
N	1440	1440	1440
R^2	0.470	0.451	0.514
Adjust R^2	0.465	0.445	0.509
F	F (11.1035) = 83.448, p = 0.000	F (11.1035) = 77.268, p = 0.000	F (12.1034) = 91.364, p = 0.000

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$, The t value is in parentheses.

The mediating effect of this study was tested, and the results are shown in **Table 9**:

Table 9. Summary of the mediation effect test results.

Item	***c***	***a***	***b***	***a* × *b***	***a* × *b* (Boot SE)**	***a* × *b* (*z*)**	***a* × *b* (*p*)**	***a* × *b* (95% BootCI)**	***c*'**	**Conclusion**
LS → PV → PI	0.462**	0.453**	0.389**	0.176	0.022	11.532	0.000	0.147~0.232	0.404**	Partial intermediary

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

In conclusion, perceived value and its dimensions partially mediate the relationship between college students' lifestyle (fashion taste, perfectionism and advocating freedom) and online music purchase intention. In other words, college students' lifestyle (fashion taste, perfectionism and advocation of freedom) has a significant positive effect on the perceived value of online music, and the perceived value has a significant positive effect on the purchase intention of online music, so the perceived value has a mediating effect on the purchase intention of online music.

However, college students' lifestyle (fashion taste, perfectionism and advocation of freedom) also plays a significant positive role in the purchase intention of online music. Therefore, the mediating effect of perceived value is not a complete mediating effect, but a partial mediating effect.

The relationship between college students' lifestyle (fashion taste, perfectionism and advocation of freedom) and online music purchase intention is not only affected by perceived value, but also by many other factors. For example, influenced by college students' gender, whether they are the only child, monthly disposable income and other factors, the chain effect of lifestyle and perceived value on online music purchase intention is weakened to a certain extent, and perceived value plays a partial mediating role between the two.

4.4.5. Moderation effect test

Neuroticism moderated the relationship between perceived value of online music and online music purchase intention of college students. When the perceived value of college students increases, their purchase intention will be greatly increased. College students with higher levels of neuroticism have a higher perceived value of online music and can improve their purchase intention. Then, the results of this regulatory effect analysis are shown in **Table 10**.

Table 10. Analysis of moderating effects.

Variables	**NE**
PV	0.365*** (3.422)
NE	0.325*** (3.635)
CV × NE	0.089** (2.365)
FT	0.286*** (3.632)
EV × NE	0.098** (2.632)
PF	0.325*** (3.695)
SV × NE	0.092*** (3.654)
Controls	Y
Term of intercept	−0.885*** (−14.632)
N	1440
Adi-R^2	0.090

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

As can be seen from **Table 10**, the results of the moderating effect of neuroticism on the relationship between perceived value and online music purchase intention of college students show that the regression estimation coefficients of the interaction terms between perceived value and each dimension and neuroticism are significantly positive at the 5% confidence level, indicating that neuroticism plays a

positive moderating role in the relationship between perceived value and online music purchase intention of college students. The higher level of neuroticism will help to promote college students to buy online music.

5. Discussion

5.1. The predictive effect of lifestyle on online music purchase intention

College students' lifestyle is an important influencing factor for the formation of online purchase intention and behavior. This study also reached a consistent result, that is, lifestyle can indeed affect college students' online music purchase intention. Fashion taste, perfectionism and advocating freedom have significant positive predictive effects on online music purchase intention. Fashion taste is reflected in the individual's popular style and emotional style of online music. They are willing to buy even if the price is expensive [28]. The unrestrained appeal of network music is highly consistent with the style of advocating freedom. The legal quality music resources provided by the online platform are also in line with the needs of perfectionist individuals to pursue an exquisite life [29]. Therefore, individuals who advocate freedom and perfectionism have higher online music purchase intentions. Moderation and aggressiveness have no significant effect on the prediction of online music purchase intention, which is similar to the conclusion of previous studies. The characteristics of moderation and introversion are stable but not public, and they are cautious and conservative towards novel online music consumption. However, enterprising individuals devote more time and energy to their work and do not have too much time and energy. College students with these two lifestyles have low intention to buy online music. Therefore, this study further detailed the mechanism of lifestyle influence on online music purchase intention.

5.2. Mediating effect of perceived value of online music

In order to deeply understand the mechanism of lifestyle on college students' online music purchase intention, this study introduced the mediating variable of perceived value, and the mediating effect analysis obtained meaningful results: Perceived value plays a partial mediating role in the influence of fashion taste, perfect attention, and advocation of freedom on purchase intention, while perceived value has no mediating effect in the influence of moderation and aggressiveness on purchase intention. This may be due to the fact that moderate and aggressive lifestyles are more practical and efficient, and are not as sensitive to the perceived value of online music as fashion taste, perfectionism, and reverence for freedom. For moderate and introverted college students, they may be more inclined to choose traditional or classic music, while for new and popular online music, their perceived value is not high, so the perceived value does not play a mediating role between moderate and purchase intention. Similarly, motivated college students may pay more attention to study and work, and the consumption of online music is not an important part of their lives. Therefore, perceived value does not have a mediating effect between aggressiveness and purchase intention [30]. However, the perceived

value of online music is higher among free-minded consumers than perfectionists, which may be related to their preference for personalized and customized content.

For college students with fashion taste, perfectionism and freedom, online music not only meets their aesthetic needs for music, but also reflects their lifestyle and values. Therefore, their perceived value of online music is high, and this high perceived value further promotes their purchase intention. Perceived value acts as a bridge between fashion taste, perfectionism and advocating freedom and purchase intention, enabling these lifestyle characteristics to better predict purchase behavior. This study also proves that perceived value can positively affect college students' purchase intention of online music, which supports existing theoretical views and empirical studies .

In addition, for the rapidly developing market, this study understands the lifestyle of college students and its impact on perceived value, which is helpful to develop more accurate marketing strategies. In addition to promoting music products directly, purchase intentions can also be promoted indirectly by enhancing the user's perception of the overall value of the platform. For example, by optimizing the user interface design, providing personalized recommendations, and increasing social interaction functions, users' satisfaction and loyalty to the platform can be enhanced, so as to improve their perceived value of online music. This study further explores the perceived value of college students with different lifestyles in other types of online consumption behaviors and their impact mechanisms, thereby providing broader theoretical support and practical guidance for the online market, and providing valuable insights into the impact of online music platforms and marketers.

5.3. Regulation of neuroticism

The value perception of online music can stimulate consumer purchase intention, and the relationship with biology is an area worthy of in-depth discussion. The regulation of neuroticism comes from the explanation of the theory of human biology. Neuroticism can significantly affect an individual's behavioral performance [31]. Compared with college students with higher emotional stability, college students with lower emotional stability are more likely to stimulate their purchase intention when they perceive the value of online music, which confirms the hypothesis of the study. Generally, neuroticism is regarded as a negative personality trait, and individuals with high neuroticism scores tend to show emotional characteristics such as anxiety, tension, mood swings, and depression. These individuals are prone to anxiety, anger, and insecurity in daily life, which makes it difficult to maintain their social relationships in a healthy way [32]. Music has the function of improving mood. For college students with large emotional fluctuations, listening to music can help improve their emotional state and mental outlook. Value is a core component of the consumption experience [33]; therefore, from the perspective of value perception, college students can feel the rich value of music from the online music consumption experience. Therefore, college students with low emotional stability are more sensitive to the value perception of online music (including social value, cognitive value and emotional value), and their online music value perception has a more significant impact on purchase intention. The results

show that neuroticism provides a new way to study college students' online music purchasing behavior, and fills an important gap in the field of online music consumption behavior.

6. Conclusions

1) Fashion taste, perfectionism and advocation of freedom positively predict college students' online music purchase intention.
2) Perceived value plays a mediating role between lifestyle and college students' online music purchase intention. Perceived value plays a partial mediating role in the influence of fashion taste, perfect attention, and advocation of freedom on purchase intention. Perceived value has no mediating effect on the influence of moderation and aggressiveness on purchase intention.
3) Neuroticism plays a moderating role between perceived value and online music purchase intention of college students. Neuroticism plays a moderating role between cognitive value, emotional value, social value and college students' intention to buy online music.

The limitation of this study is that the sample is limited to Chinese college students and may not be generalized to consumers from other cultural backgrounds.

Ethical approval: Not applicable.

Conflict of interest: The author declares no conflict of interest.

References

1. Abu AH, Siti WDM, Nor OA. Does Personality Influence the Frequency of Online Purchase Behavior? International Journal of Online Marketing. 2022; 12(1): 1–15.
2. Dave M. Neuroticism, musical emotion regulation, musical coping, mental health, and musicianship characteristics. Psychology of Aesthetics, Creativity, and the Arts. 2024; 18(6): 921–939.
3. Osorio NA, Escorihuela RM. The relationship between neuroticism as a personality trait and mindfulness skills: A scoping review. Frontiers in Psychology. 2024; 15: 1401969–1401969.
4. Hassani NS, Jafari SM. Relationship between academic consumer lifestyle and the decision to purchase from virtual stores. International Journal of Business Innovation and Research. 2021; 25(2): 242.
5. Choi SI, Kawak JH. A Study on Effect of Silver Consumer's Lifestyle on Purchase Satisfaction and Repurchase Intention of the Health Functional Foods. The Korean Journal of Food and Nutrition. 2007; 20(3): 334–340.
6. Qaiser S, Bashir MA, Ramish MS, et al. Impact of consumer consumption adjustments on habits and purchase behavior during COVID-19. Cogent Business & Management. 2023; 10(3).
7. Lee J, Park DH, Han I. The effect of negative online consumer reviews on product attitude: An information processing view. Electronic Commerce Research and Application. 2016; 7(3): 341–352.
8. Shaharudin MR, Pani JJ, Mansor SW, et al. Purchase Intention of Organic Food; perceived Value Overview. Canadian Social Science. 2010; 6(1): 70–79.
9. Park HR. College students' experience and intention to purchase organic clothes according to their lifestyle characteristics. Journal of the Korea Academia-Industrial cooperation Society. 2015; 16(5): 3087–3098.
10. Iliana EAR, Leopoldo GAB. Lifestyle and Purchase Intention: The Moderating Role of Education in Bicultural Consumers. Journal of International Consumer Marketing. 2023; 35(1): 30–46.
11. Kala D, Chaubey DS. Impact of Product Presentation on Purchase Intention: Moderating Role of Mood in Online Shopping of Lifestyle Products. Research Anthology on E-Commerce Adoption, Models, and Applications for Modern Business. 2021; 1477–1491.
12. Worthington AK. Theory of planned behavior. University of Alaska Anchorage Press; 2021.

13. Hassan SH, Ramayah T, Mohamed O, Maghsoudi A. E-lifestyle, customer satisfaction, and loyalty among the generation Y mobile users. Asian Social Science. 2015; 11(4): 157–168.
14. Pan Y, Gao L, Wang FH. Influence of lifestyle and customer perceived value on Chinese consumers' purchasing behavior. Journal of Systems Management. 2009; 18(6): 601–607.
15. Zeithaml VA. Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. Journal of Marketing. 1988; 52(3): 2–22.
16. Sheth JN, Newman BI, Gross BL. Why we buy what we buy: A theory of consumption values. Journal of Business Research. 1991; 22(2): 159–170.
17. Pebriani WV, Sumarwan U, Simanjuntak M. The effect of lifestyle, perception, satisfaction, and preference on the online re-purchase intention. Independent Journal of Management and Production. 2018; 9(2): 545–561.
18. Sung J, Woo H. Investigating male consumers' lifestyle of health and sustainability (LOHAS) and perception toward slow fashion. Journal of Retailing and Consumer Services. 2019; 49: 120–128.
19. Jeon S, Bae M. The impact of lifestyle-congruence on affective image, perceived value, satisfaction, and festival loyalty. 2019; 31(2): 173–191.
20. Akkaya M. Understanding the impacts of lifestyle segmentation & perceived value on brand purchase intention: An empirical study in different product categories. European Research on Management and Business Economics. 2021; 27(3): 100155.
21. Eysenck SBG, Eysenck HJ. An improved short questionnaire for the measurement of extraversion and neuroticism. Life Sciences. 1964; 3(10): 1103–1109.
22. Copas GM. Can Internet shoppers be described by personality traits. Usability News. 2003; 5(1): 1–4.
23. Watjatrakul B. Online learning adoption: Effects of neuroticism, openness to experience, and perceived values. Interactive Technology and Smart Education. 2016; 13(3): 229–243.
24. Ali A, Tarofder AK, Azam SF. Neuroticism Indifference to Brand Familiarity and Social Influence Towards Purchase Intention in Social Networking Services (SNS) in Malaysia. Asian Journal of Marketing. 2018; 12(1): 1–11.
25. Tang WD. The Moderating Effect of Customer Experience on Customer Perception and purchase Intention: A Case study of mobile wireless music. Journal of Social Sciences. 2010; 1: 108–112.
26. Pan Y, Luo LJ, Liu D, Lv TJ. Cloud service purchase intention of individual users based on online lifestyle. Journal of System Management. 2013; 22(4): 477–486.
27. Wang MC, Dai XY, Yao SK. The Preliminary development of the Chinese Big Five Personality Inventory III: Development of a simplified version and its reliability and validity test. Chin. J. Clinical. Psychology. 2011; 19(4): 454–457.
28. Song HY. Study on the tendency of interest of wearable textile products according to college students' fashion life style. Journal of Fashion Business. 2018; 22(1): 41–55.
29. Levinson J. The Value of Music. Journal of Central Conservatory of Music. 2014; 1: 36–45.
30. Lee HJ. The effect of anti-consumption lifestyle on consumer's attitude and purchase intention toward commercial sharing systems. Asia Pacific Journal of Marketing and Logistics. 2019; 31(2): 1422–1441.
31. Juman I, Shameen S, Kumar M. Unleashing the missing link between neuroticism and compliance behavior among quick service restaurant employees. International Journal of Hospitality Management. 2023; 114.
32. Gonda X, Fountoulakis KN, Juhasz G, et al. Association of the s allele of the 5-HTTLPR with neuroticism-related traits and temperaments in a psychiatrically healthy population. European Archives of Psychiatry and Clinical Neuroscience. 2009; 259(2): 106–113.
33. Gan CM, Wang WJ. The influence of perceived value on purchase intention in social commerce context. Internet Research. 2017; 27(4): 772–785.