

Research on the Development and Application of New Social Stratification Indicators from a Consumer Behavior Perspective

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Abstract. With the profound changes in the global economy and consumption patterns, consumption is no longer limited to meeting basic living needs, but has become an important symbol of personal social status and economic strength. This article aims to develop a new set of social stratification indicators based on the consumption perspective, and explore the role of consumption behavior and consumption patterns in contemporary social stratification through empirical investigation. By constructing a theoretical framework, compiling scales, conducting large-scale surveys, and conducting data statistical analysis, the feasibility and internal structure of measurement indicators were thoroughly explored. The results indicate that there is good internal structural evidence between indicator dimensions, and feasibility has been demonstrated in small-scale applications. This study not only enriches the research content in the field of social stratification and has rich theoretical significance, but also provides useful references for government policy-making, improving social inequality, and individual class cognition.

Keywords: Consumption behavior stratification, social stratification, Consumption patterns, Consumer mindset, Scale preparation.

1. Introduction

Social stratification, as an important concept in the field of sociology, has always attracted scholars' attention. It is like a multi-faceted prism, reflecting the multiple structure and complex features of society. There have been numerous theoretical and empirical studies on social stratification. However, with the changes of The Times, especially in the post-modern consumer society, the traditional measurement methods of social stratification appear to be inadequate in some aspects [1]. This paper attempts to re-examine social stratification from the perspective of consumption, and explore the compilation of a new set of social stratification indicators.

Traditional social stratification measurement methods, such as Wright's Neo-Marxist method, Goldthorpe's Neo-Weberist method, and the Socioeconomic Status Scale (SEI), mostly focus on the measurement of economic resources, occupational status and power from the perspective of production [2]. These methods have been widely used in the last century and have yielded rich research results. In today's post-industrial era dominated by consumption, collective values have disappeared, individual cognition has become fragmented, and individual psychological factors such as consumption behavior and consumption pattern have become important markers of individual social status. Therefore, it is particularly necessary to measure social stratification from the perspective of consumption behavior [3].

Some scholars have attempted to develop measurement methods from a consumption perspective, using household consumption patterns, household durable goods index, etc. to reflect social stratification structure, such as Li Chunling (2003) [4]. Such research undoubtedly provides us with a new perspective and approach. However, these measurement methods also have some issues. [5] On the one hand, the effectiveness of consumer perspective indicators may change with social changes. For example, whether a household owned a car in 2003 and whether they plan to purchase a car in the future may be important consumption indicators, but in 2024, with the popularity of cars, this indicator may no longer have significant hierarchical significance. On the other hand, this measurement method also has certain operational issues, such as a lack of internal structure analysis

and consideration of indicator weights. In view of this, on the basis of Chunling Li's research, combined with the background of the current times, this paper tries to develop a more scientific and reasonable hierarchical index of consumption behavior. The research will sort out the shortcomings of existing research through literature review, and clarify the goal and significance of this research. Then the compiling process of the scale is elaborated, including the selection of indicators, the implementation of the scale, the reliability and validity test and the final application analysis.

In the literature review part, the research status and application of traditional social stratification measurement methods such as economic income measurement, occupational prestige measurement, Wright's Neo-Marxist measurement and Goldthorpe's Neo-Weberism measurement are systematically reviewed. At the same time, the theory of stratification of consumer behavior and its empirical research in China will be discussed in depth, especially Chunling Li's consumption stratification scale and its criticism. In the compiling and implementing part of the scale, the selection basis and compiling process of the new consumption stratification index are explained in detail. The research will combine China's current consumption characteristics and the background of The Times, select representative consumer behavior indicators, and use statistical methods to screen and optimize the indicators. In addition, the implementation process of the scale, including sample selection, data collection and processing methods, will be introduced. In the reliability and validity test part, the reliability and validity test of the scale is carried out by various statistical methods to ensure the reliability of the scale. Finally, in the application scale part, the new consumer behavior stratification index is used to investigate and analyze the current stratification status of our society. Through descriptive statistics, one-way analysis of variance and other methods, this paper discusses the difference of consumption behavior among different social groups and the social significance behind it. At the same time, the application prospects and limitations of the new consumer behavior stratification indicators will also be discussed, in order to provide a new perspective for sociological research.

2. Literature Review

2.1. Review of existing social stratification theories and measurement methods

The study of social stratification has always been a core issue in the field of sociology, its purpose is to reveal the unequal distribution of social resources and the resulting differences in social status. The following is a review of several mainstream theories and measures of social stratification:

Economic income measurement. This method classifies social classes by measuring an individual's economic income. This is done by dividing citizens into groups based on their income. For example, international institutions such as Asian Development Bank and Credit Suisse, as well as domestic scholars such as Peilin Li and the National Development and Reform Commission, have tried to divide social classes by setting certain economic income standards [6]. Peilin Li ranked urban residents according to their annual income and defined 26-95 percent of residents as the middle-income group. Credit Suisse defines the middle class as those with an individual income of \$50,000 to \$200,000. This method is simple and easy to implement, and widely adopted by scholars. Among them, Li Wei studies poverty alleviation according to the low-income group defined by this method, and then puts forward the policy path to improve income. [7] However, it is a kind of economic determinism, ignoring other dimensions of social stratification and other social resources except economic income.

Occupational prestige measurement. This method originated from the theories of Durkheim and Parsons, and was further developed by Blau et al. [8]. It mainly divides social classes by investigating the prestige of different professions in people's minds. Durkheim proposed that the difference between people in modern society is the occupational difference caused by the social division of labor. Parsons posited that society shared values. This approach therefore assumes that actors in a society value different occupations in the same way. In this method, respondents are asked to rate each occupation. Nan Lin and Xiaolan Ye (1997) divided 81 occupations into 8 groups with 11 in each

group, and primary school teachers appeared in each group (as the reference group). The investigators ranked 1-11 points, and then integrated and compared them to obtain the occupational reputation score. [9]

The socioeconomic status scale is an extension of the occupational prestige method, developed by Blau. The practice is to make multiple regression between occupational prestige score and education level and income. The regression coefficient is the weight, and then the total score is added. Qiang Li applied this method to investigate social stratification in China twice, and found that the stratification structure of Chinese society has changed from "inverted T-shape" to "earth shape" in 10 years, and thus concluded that Chinese society is currently in structural tension [10] This method has been widely used in the past few decades, and has drawn a lot of meaningful conclusions. However, it also has certain limitations. First, make or lose Parsons. With the rise of relativism, the bankruptcy of first philosophy and the rise of globalization, the assumption of shared values is increasingly questionable, and the applicability of this approach to an era of intense modernity is only questionable. Secondly, with the change and development of society, some emerging occupations may not yet be included in the traditional occupational prestige scale, which may lead to bias in the measurement results. Therefore, when using the occupational prestige measurement method, we need to constantly update and improve the scale to adapt to the changes and development of society. Finally, the most important point is that this is still a method divided from the perspective of production, but today, the importance of consumption has gradually surpassed that of production.

Wright's neo-Marxist method of measurement. From a neo-Marxist perspective, Wright proposed a measure of social stratification based on class position [11]. The approach of this method is to first divide into three classes according to whether they own the means of production: capitalists, small employers and petty bourgeoisie. Secondly, organizational assets and technical assets are grouped into contingency tables to form nine classes. This is a classification system that adheres to the main body of Marx's theory and absorbs Weber's view of bureaucracy. As a result, some scholars have commented that followers of Marx's theory and followers of Weber's theory gradually converged. Xiao Chen, Chunling Li and other scholars applied this method in the Chinese context and added the entrepreneur class, comprador class, migrant workers and other classes with Chinese characteristics on the basis of Wright's theory [[12-13]. It emphasizes the role of production data in social stratification, but its applicability in contemporary society is debatable. Wright's neo-Marxist measurement method is one of the important tools for understanding the structure of social stratification. It can help us to analyze class relations, social inequality and the relationship between different classes in a more in-depth way, which is also the tradition and advantage of classification, and provide useful references for policy making and social planning, especially adapting to Chinese characteristics. However, this method is also suffering from the impact of the new era. Because it is based on Marxism, it is also a theory from the production side, for example, with special emphasis on the possession of the means of production. However, with the development of The Times, the importance of the means of production is being weakened, and some groups that do not need the means of production, organizational resources and technical resources can also obtain social status and wealth, and cannot be explained in this framework, such as e-commerce with goods.

Goldthorpe's neo-Weberist measure. Goldthorpe's theory was born in response to the conflict between the hierarchy school (ranking people by occupation, not caring about internal relations, focusing on differences) and the relational school (classifying people according to certain criteria, such as ownership of the means of production, focusing on the relationship between classes, because it is classification, so there is no hierarchy). By merging the two schools mentioned above (occupational prestige and Marx's classification). First, people are divided into 36 occupations. Then, using criteria such as Lockwood's market position and job status, society is divided into seven classes. [14] Qiang Li believes that the stratification method of Xueyi Lu and Chunling Li in the report of China's top ten social grass-roots levels also belongs to this category. [15] In the study of China's Ten social strata report, residents were first divided into seven groups according to occupation. Secondly, it was believed that there were three most important assets in China's society at that time:

organizational assets, economic assets and cultural assets. Among them, according to Chinese characteristics, the importance of organizational assets is greater than that of economic assets, followed by cultural assets. The occupational groups are reclassified and ranked according to this order. [16] This method is by far the most widely used, and aims to synthesize the two traditions of the past. However, there are some problems. As Qiang Li points out, whether the forced integration of two conflicting paradigms can really be integrated. For example, in the report of China's Top Ten strata, organization, economy and culture are just a category. Is there really any order among them? So, in the report of the ten strata, there is even a phenomenon that the employee level is higher than the boss level. Because the manager has cultural and organizational resources, he must be greater than the private business owner level. For this reason, he prefers Wright's approach. [17] But the most important point in this paper is that it is also unable to adapt to the new era, or the era of radical modernity as Giddens calls it [18]. With the increase in the capacity of society across time and space, there are some phenomena that cannot be explained by traditional theories. For example, a person can hold multiple jobs at the same time, and at the same time, he can obtain social status without relying on organization. All these cannot be explained by the traditional stratification theory.

2.2. Review of research on the stratification of consumption behavior

In recent years, the study of social stratification from the perspective of consumer behavior has gradually attracted attention. The earliest literature on the idea of social stratification from the perspective of consumption behavior can be seen in Peilin Li and Qiang Li. They first put forward the hypothesis of fragmentation theory, believing that the current international society has entered the post-modern era, the identity of identity is gradually dissolved, and the hierarchical division of various dimensions will lead to different groups, among which more individualized indicators should be relied on, especially the dimension of personal consumption. [19]

Among them, Li Chunling absorbed the individualization and fragmentation views of Peilin Li and Qiang Li, and innovatively compiled a set of social stratification scale of consumer behavior, trying to reveal the hierarchical structure of Chinese society from the perspective of consumer behavior. She classifies social classes by investigating people's household durable goods index, consumption concept and consumption pattern. She also conducts surveys on Chinese society and draws enlightening conclusions. [20] This approach has been widely praised by scholars at home and abroad, but some scholars oppose it, arguing that this scale cannot withstand the test of social changes, such as "Does a family own a car in 2003?" The effect measured by items such as "I prefer to go to high-end restaurants compared with ordinary restaurants" is different from that measured by such indicators in 2024, and the scale configuration is also different. [21] At the same time, the author found that the method also has many shortcomings in measurement theory, such as: no internal structure analysis (confirmatory factor analysis), simple total scale in processing method, ignoring the weight of indicators.

2.3. The shortcomings of the existing research and the direction of future research

Although the traditional social stratification theories and measurement methods have their own advantages, they still have some shortcomings in common. First, most methods focus too much on one aspect of social resources (such as economic income or professional reputation), while ignoring other factors; Secondly, the existing consumption measurement methods are often difficult to adapt to the rapidly changing social environment, especially in terms of consumption patterns and structure. Moreover, most of them are not rigorous and simple in operation. For example, simple use of total scale, no internal structure analysis and so on. Finally, the traditional social stratification method emphasizes the factors at the production end, such as the means of production, occupation, organization, etc., which is difficult to adapt to the new characteristics of modern society and cannot be explained.

In view of the above shortcomings, future research directions can include: 1) Explore a more comprehensive and comprehensive measurement method of social stratification, combining

economic income, career reputation, education level, consumption concept and other dimensions; 2) In-depth research on the role of consumption behavior, consumption concepts and patterns in social stratification and their relationship with other social resources; 3) Pay attention to the impact of social changes on consumption stratification, and how to maintain the stability and validity of measurement methods in a dynamic social environment. Through these studies, we can gain a deeper understanding of stratification in contemporary society and its changing trends.

3. Theoretical framework and research hypothesis

Through the above literature review. This study aims to explore new approaches to social stratification from the perspective of consumer behavior; therefore, it is essential to construct a clear theoretical framework. The theoretical framework of this study is based on several core ideas:

(1) The relationship between consumption behavior and social status. This study holds that consumption behavior is not only the behavior of satisfying individual needs, but also the embodiment of social status and economic strength. Therefore, the analysis of consumption behavior can provide insight into the individual's social level.

(2) The dimension of consumption behavior, as an index of social stratification, is feasible and more suitable for the current modernization situation.

(3) Multidimensional consumption behavior cost index. To fully reflect individual consumption concepts and consumption patterns, consumption indicators need to be selected from multiple dimensions, including but not limited to the quality of consumer goods, prices, brands, consumption places, etc. These indicators will together form the basis of consumption stratification.

(4) Stratification of consumption behavior can reflect the overall stratification structure and provide meaningful insights.

When selecting consumer behavior indicators, the research follows the following principles to ensure the scientific and validity of the selected indicators: Representativeness, the selected indicators should be able to represent the core characteristics of individuals in terms of consumption, including consumption concepts, consumption habits and consumption tastes. Objectivity: The selection of indicators should avoid subjective bias and ensure the objectivity and authenticity of data. Research is based on large-scale market research and data analysis to determine specific consumption indicators. Operability, the selected indicators should be easy to quantify and measure, in order to facilitate subsequent data collection and analysis work. Comprehensiveness: The selection of indicators should cover multiple aspects of consumer behavior, including but not limited to consumption type, consumption frequency, consumption amount, etc., so as to fully reflect the characteristics of individual consumption behavior.

Based on the above principles, this study comprehensively uses qualitative and quantitative research methods to screen out the most representative consumption indicators, and then builds a scientific system to measure social stratification from the perspective of consumption.

According to the proposed theoretical framework and the selection principle of consumption indicators, the following research hypotheses are proposed in this paper:

Hypothesis 1: There is internal correlation among the four conceptual dimensions of consumption frequency, consumption expenditure, consumption pattern and consumption concept.

Hypothesis 2: Through comprehensive analysis of multi-dimensional consumption indicators, social stratification can be more effectively divided and measured.

Hypothesis 3: There is a significant correlation between the stratification of consumption behavior and traditional social stratification. Individuals at different social levels show obvious differences in consumption behavior.

4. Research methods and data sources

4.1. The process of scale preparation

Scale development is the core part of this research method. This article is based on existing research ideas and combines the shortcomings of these studies to make improvements. Existing research divides social classes by investigating people's household durable goods index, consumption attitudes, and consumption patterns. This article first chooses the following two dimensions, consumer attitudes and consumption patterns, and abandons the household durable goods index. The reason is that foreign criticism of it mainly focuses on the household durable goods index. Secondly, increase consumption support and frequency in these two dimensions. The reason for choosing the consumption amount is to refer to the traditional economic income stratification method. Although this method is too one-sided, it is still an important dimension to indicate personal identity, which is particularly important for building a comprehensive and comprehensive scale goal. The consumption frequency dimension is based on the results obtained from references, which believe that a consumption level can be objectively determined by the consumption frequency of consumers. [22-23] Based on the above steps, this article selects the following consumption indicators: consumption frequency, consumption amount, consumption mode, consumption expenditure, etc.

Considering the complexity and diversity of consumption behaviors, Likert Scale is chosen as the main type of scale, because it can provide more information and facilitate statistical analysis. Set five rating options, "strongly disagree," "disagree," "neutral," "Agree," and "strongly agree," and assign a score of 1 to 5 to facilitate quantitative analysis. Each consumption indicator is translated into a specific item, and make sure that the item is clearly stated, easy to understand, and avoid ambiguity. In order to test the validity of the questionnaire, this paper specially designed some reverse items, and processed the data in the forward direction, to ensure that the respondents can read and understand the items carefully.

The items in Table 1 below are designed based on the dimensions of the consumption stratification scale, aiming to reflect the social level of the respondents through different consumption behaviors and consumption concepts. Each item has been carefully selected to ensure that it is closely related to the purpose of the study.

Table 1. Dimensions and items of the Consumption Behavior Stratification Scale

Dimensions	Item
Frequency of consumption	A1. I often buy high-end brands.
	A2. I buy new clothes or shoes every month.
	A3. I eat out every week.
	A4. I often spend money in entertainment places
	A5. Generally speaking, I often spend money on non-necessities
Consumer expenditure	B1. When I shop, I only like to buy high priced products.
	B2. I spend a lot on service goods.
	B3. I spend a lot of money on entertainment.
	B4. I'm under a lot of pressure to spend on necessities.

Dimensions	Item
	B4. In general, I spend a lot of money on non-essentials.
Consumption pattern	C1. I prefer to shop at high-end malls or specialty stores.
	C2. I often buy products of international brands through online platforms.
	C3. I like to shop in distinctive independent designer stores.
	C4. I prefer shopping that shows my own personality.
	C5. I prefer entertainment consumption to life consumption.
Consumption concept	D1. I pay great attention to the quality of products when I buy them.
	D2. I prefer to buy luxury goods rather than necessities.
	D3. I spend a very large percentage of my total expenditure on luxury goods.
	D4. I think I pay more attention to quality than to cost performance.

4.2. Sample source and data structure

The data collection methods adopted in this study mainly include questionnaire survey and in-depth interview to ensure the comprehensiveness and accuracy of the data. In order to ensure the universality and representativeness of the study, stratified random sampling was used to select samples. First, according to the purpose and background of the study, the target population is divided into different levels, and multiple residential communities are selected as sample points in different areas of the city (including downtown, suburban and new development zones). Stratified sampling was conducted within each residential district according to residents' age, occupational background and income level to ensure the diversity and representativeness of the sample.

Six residential communities in three different regions of Hebei Province (Handan, Baoding and Chengde) were selected for this study. Geographically, it covers the province from south to north. 100 households were randomly selected as potential survey subjects within each district, and then further screened and stratified sampled according to their age (such as 20-30 years old, 31-40 years old, 41-50 years old, etc.), occupation (such as white collar, blue collar, freelancer, etc.) and income level (such as low income, middle income, high income, etc.). Finally, 300 respondents were identified as the study sample.

A combination of questionnaire survey and field interview was adopted. Questionnaire surveys are mainly used to collect quantitative data, while on-the-spot interviews are used to gain an in-depth understanding of respondents' consumption motivations and attitudes. Design an 18-question questionnaire covering multiple aspects such as purchase intention, frequency of use, brand preference and price sensitivity of smart home products. The questionnaire is distributed both online and offline. The online questionnaires are mainly disseminated through the wechat group of the owners of the community and the community forum, while the offline questionnaires are distributed and collected by the investigators face to face in the community.

On the basis of the questionnaire survey, 30 representative respondents were selected for on-the-spot interviews. The interview place was selected in the public rest area of the interviewees' home or community. A recording pen and notebook were used to record the interviews to ensure the completeness and accuracy of data. The interviews mainly covered the respondents' cognition of smart home products, their experience of using them, their purchase decision-making process, and their expectations and suggestions for the future smart home market.

In terms of age distribution, the samples in this paper tend to be younger, mostly concentrated in the range of 25-30 years old. The distribution in different age groups is as follows: 40% in the group of 20-29 years old, 20.5% in the group of 31-39 years old, 30% in the group of 40-49 years old, 9.5% in the group of 50-59 years old. The gender distribution of the sample was as follows: 126 males accounted for 63%, and 74 females accounted for 37%. In terms of education distribution, 9 people had high school education or below, accounting for 4.5%; 55 people had junior college education, accounting for 27.5%; 117 people had undergraduate education, accounting for 58.5%; 19 people had graduate education or above, accounting for 9.5%.

The sample structure is very similar to the structure of the provincial statistical yearbook, which is very consistent with the reality and the overall characteristics of Hebei residents. It can be seen that the sample is representative.

4.3. Data analysis

SPSS25.0 and Amos24.0 were used for all data analysis

5. Scale reliability and validity test

5.1. Structural validity and common method bias of the questionnaire

All the data in this study came from self-reports, and all variables were collected at the same time, so there may be common method bias in the measurement. The common method test and source identification method uses the addition of covariant factor method, that is, a common factor is added to the CFA model, and it is loaded on all indicators, and all paths are bound to be equal, so it is equivalent to reducing one degree of freedom. As a result, when comparing CFA models without a common method bias factor, the difference between the two models at the significance level of 0.05 and the χ^2 value at 1 degree of freedom is less than 3.84, indicating that the common method bias does not exist. [24] In essence, this method further decomposed the error into random error and systematic bias according to the error characteristics, which is a further extension of the Spearman-Brown classical measurement model, that is, X (observed value) = T (true value) + e_1 (random error) + e_2 (systematic bias). If the source of common method bias is suspected, the common method factor can be continued to increase, and this model is known as the MTMM model. [25]

Table 2. Final results of confirmatory factor analysis adaptation indicators

Fitting indicators	χ^2	DF	χ^2/DF	NFI	CFI	GFI	AGFI	RMSEA
Standard value	-	-	< 3	> 0.9	> 0.9	> 0.85	> 0.9	< 0.08
No covariant factor model added	365.53	146	2.50	0.919	0.921	0.869	0.901	0.0678
Add the covariant factor model	364.45	145	2.51	0.919	0.921	0.869	0.968	0.0677

The results in Table 2 show that compared with the above model without common method bias factor, the difference between the two models at the significance level of 0.05 and the χ^2 value of 1 degree of freedom is 0.1, which is far less than 3.84. The difference between the two models is one step significant, that is, common method bias is not a problem in this measurement.

In this study, the chi-square value is 365.53, and the ratio to degrees of freedom is 2.50, which is less than the ideal standard of 3.0, indicating that the model fits the data well. The CFI (Comparative fit Index) represents the difference from the zero model and indicates how much better the model proposed in this paper is compared to the difference between the zero model and the observed covariance matrix. The closer to 1 from its value, the better the fit. In this study, the CFI is 0.921,

which exceeds the ideal standard of 0.90, indicating excellent model fitting's (root mean square of approximate error) is a measure of model fitting error, with a smaller value indicating a better fit. The RMSEA in this study is 0.0678, which is less than the ideal standard of 0.08, indicating a good fit of the model.

Table 3. Results of confirmatory factor analysis and reliability test

Variables	Indicators	Standardized load	Average Variance Extraction (AVE)	Composit reliability (CR)
Consumption frequency	A1	0.82	0.540	0.849
	A2	0.69		
	A3	0.77		
	A4	0.78		
	A5	0.72		
Consumer spending	B1	0.78	0.560	0.860
	B2	0.77		
	B3	0.80		
	B4	0.75		
	B5	0.70		
Consumption patterns	C1	0.69	0.541	0.861
	C2	0.77		
	C3	0.81		
	C4	0.69		
	C5	0.72		
Consumption concept	D1	0.81	0.540	0.825
	D2	0.70		
	D3	0.69		
	D4	0.81		

According to the results in Table 3, in the adaptation results of each index of the CFA model, the standardized load of the explicit variable corresponding to each latent variable is greater than 0.5 (standardized regression coefficient), and has aggregate validity. The average variance extraction value of each concept is greater than 0.5, that is, indicators under the same concept have correlation and convergence validity. The CR value of the Conpositreliability is greater than 0.7, indicating that the measurement questions have good consistency and the measurement reliability can be guaranteed.

Table 4. Comparison of fitting indicators for confirmatory factor analysis of competitive models

No.	Fit Metrics	X2	DF	X2/DF	CFI	RMSEA	Model comparison	Δ X2	Δ df
1	Original model	365.53	146	2.500	0.921	0.0669	-	-	-
2	Three factor model one	898.21	150	5.988	0.841	0.1069	2 vs 1	532.68 ***	4
3	Three factor model two	1508.11	150	10.054	0.746	0.1523	3 vs 1	1142.58 ** *	4
4	Three factor model three	1061.42	150	7.076	0.818	0.1361	4 vs 1	695.89 ** *	4
5	Two-factor model	1318.51	151	8.732	0.776	0.1421	5 vs 1	952.98 ** *	5
6	Single factor model	2549.18	152	16.771	0.591	0.1842	6 vs1	2183.65 ** *	6

Note: *** means p is less than 0.01

3 Factor Model one: A+B, C, D

Three-factor Model two: A, B+C, D

Three-factor Model two: A, B, C+D

Two-factor model: A+B, C+D

One factor model: A+B+C+D

After meeting the convergence validity test, the discriminative validity test is carried out. The verification method is to compare the fitting indexes of competitive models, that is, to form a new model through dimensionality reduction of the conceptual structure of the original model and compare it with the fitting indexes of the original model. The results in Table 4 show that from the original four-factor model to the single-factor model, the fitting indexes gradually deteriorate and cannot reach the acceptance level. In order to further add evidence for the rationality of the original model. There is no correlation between the indicators that measure different concepts.

6. Empirical analysis and results discussion

6.1. Data processing method

In the index processing of social stratification method, there are many kinds, not systematic. For example, Chunling Li used the summation scale to calculate scores [26]. At the same time, some scholars keep the original scale dimensions, do not process them, and finally calculate the correlation [27]. However, taken together, these two approaches have certain limitations. The total price scale cannot handle error, and it is unrealistic to assume that the internal weights between items are equal. Although maintaining the original problem can be avoided, the results will be too scattered (with many dimensions), and cannot provide a more overall intuitive description, and lose the original research significance. Therefore, in order to deal with the disadvantages of the above two methods, this paper first adopts the exploration factor analysis model (EFA) for factor extraction, adopts the principal component analysis method to solve the data, and then uses the maximum variance method to rotate the principal component, and retains the factor whose eigenvalue is greater than 1. The results show that the corresponding dimensions of the index and the CFA model are greater than 0.7 in the corresponding dimension and less than 0.3 in the non-corresponding dimension.

Table 5. Total variance interpretation for each consumption behavior dimension

Factors	Eigenvalues	Interpretive variance ratio	Cumulative interpretation variance ratio
Perceptions of consumption	4.52	30.50%	30.50%
Consumption patterns	3.03	21.21%	51.71%
Consumer spending	2.22	15.25%	66.96%
Frequency of consumption	1.80	9.02%	75.98%

Table 5 above reflects the importance of the five factors extracted through exploratory factor analysis in explaining indicators of social stratification from a consumer behavior perspective. These factors not only coincide with the theoretical dimensions of the study, but together explain a considerable portion of the variation in the data, providing a solid foundation for further research and analysis.

After completion, the four factors were saved as variables and converted to a percentage-scale, then the corresponding factors were weighted according to the proportion of the explanatory variance of each factor. Finally, the weighted factors are added together to form 1 new variable. Similar to what is done with the International Scale of Socioeconomic Status (ISEI). Finally, following Li Qiang's point of view, this paper does not artificially summarize the scores into the essays of the

upper, middle and lower levels, which can avoid the subjective division factors and show the score distribution of the respondents more intuitively. [28]

6.2. Application and correlation test of scale

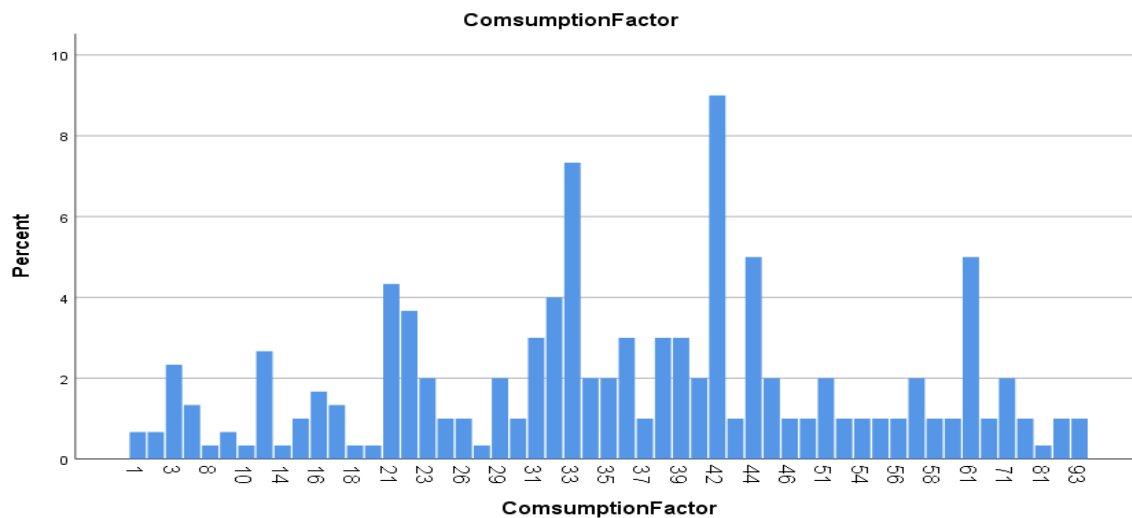


Figure 1. Consumption stratification factor scores of respondents

FIG. 1 shows that the distribution of the sample is olive distribution, that is, more in the middle and less on both sides. It shows that according to the indicators designed in this paper, the consumption of residents is distributed in layers of the bottom, the upper level is small, and the number of middle classes is large. If the whole is inferred from the sample, it shows that the stratified structure of the whole society conforms to the description of the post-industrial theory, rather than a polarization structure or a unipolar structure with relatively tense and conflicting structure. At the same time, it proves that the social stratification index designed in this paper is feasible in practical application.

After the experimental application, hypothesis 3 is tested to explore the correlation between the respondents' consumption behavior stratification scores and traditional social stratification. In the traditional social stratification measurement, this paper uses the international social and economic status (ISEI) to measure. In the literature review, this paper points out that at present, the most widely used methods are Wright model, Goldthorpe model and socioeconomic status scale. According to Qiang Li, Wright model relies on three indicators of ownership, technical assets and organizational assets, while Goldthorpe classifies them based on occupation and Wright's three indicators. The ISEI value depends on occupation, education and income, which is highly overlapping with the above two methods, and can also quantify variables, which is more detailed and intuitive. [29] Therefore, in the traditional social stratification method, this method is also chosen in this paper. After assigning the ISEI value to the interviewees' occupations, referring to Chunling Li's classification method, the interviewees with 80-100 points are classified as the upper class of society, 60-79 in the upper middle class, 40-59 in the middle class, 20-39 in the lower middle class, and 0-19 in the lower class. [30]

Table 6. Consumption behavior stratification scores versus traditional social stratification

Traditional Social Stratification	Mean	SD	f-number	p value
Upper social	71	5.56	15.62	< 0.001
Upper middle-class society	61	3.78		
Middle class	44	1.76		
Middle and lower classes of society	20	2.32		
Lower class	11	1.56		

As can be seen from the ANOVA results in Table 6, the consumption behavior stratification score presents a positive correlation in different traditional social stratification, and increases with the increase of the level of traditional social stratification. The result of F-worthiness test is 15.62, which is far greater than the critical value of significance level under the condition of 0.05. Therefore, it is 95% sure that the consumption behavior stratification score has a statistically significant correlation with traditional social stratification.

7. Conclusions and Suggestions

From the perspective of consumption behavior, this study deeply discusses the compilation and investigation of new social stratification indicators, aiming to provide a comprehensive, objective and scientific perspective to understand the stratification structure of contemporary society. Through systematic theoretical framework construction, scale preparation and large-scale market research, this study successfully screened out a series of representative consumer behavior indicators, and compiled a new set of consumer behavior stratification scale. The research results show that there is a significant correlation between consumer behavior stratification and traditional social stratification. Individuals of different social levels show obvious differences in four dimensions of consumption concept, consumption expenditure, consumption rate and consumption pattern. Through the comprehensive analysis of multi-dimensional consumption indicators, this study can not only effectively divide and measure social stratification, but also reveal the close relationship between the change of consumer behavior stratification and traditional social stratification.

Based on the conclusions of this study, the following suggestions are put forward: Policy makers should pay full attention to the role of consumer behavior in social stratification, and formulate more differentiated policies and measures to meet the needs of consumers at different social levels and promote social harmony and progress. According to the results of consumption stratification, business operators should adjust their market strategies and provide customized products and services for consumers of different social levels to improve market competitiveness. Sociologists should continue to study the phenomenon of social stratification from the perspective of consumption, explore more dimensions of consumption indicators, enrich the theoretical framework of social stratification research, and provide a more comprehensive and in-depth understanding of social change.

This study provides a new perspective and method for understanding contemporary social stratification. The new consumption behavior stratification index scale not only fills the gap of existing research, but also has important theoretical value. At the same time, through this scale, we can further understand the behavioral and psychological characteristics and differences of different consumer groups, so as to provide powerful data support for social policy formulation, market positioning and residents' psychological cognition of individual social classes, which will have positive practical significance for the research on social stratification policy formulation and provide

strong support for building a more fair and harmonious society. In the future, the scale will continue to be optimized and improved, with a view to exerting its application value in a wider range of fields and promoting the in-depth development of social science research.

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