

Tableware Design Based on Life Style of Urban Residents Who Were Born in 80s

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ABSTRACT

Based on the study of urban residents who were born in 80s, this paper explores the relationship among lifestyle, eating behavior and requirements of design. The method is designing a questionnaire through interviews. By means of Chi-square test, it shows that different ethnic groups have diversified home eating behavior and requirements. There are four factors: freshness and friendliness, health and practicality, significant pressure, and efficient career. Through cluster analysis, the "free style" group and the "life style" group are defined. Based on the difference between home eating behavior and requirements of design, the strategy of tableware design is summarized. The "free style" group likes the "convenient and efficient" and "indoor and outdoor inclusiveness" design. The "life style" group focuses on the design of inclusive, emotional communication and health guidance.

Keywords: tableware design, life style, design, data analysis

I. INTRODUCTION

As a necessary product in eating lifestyle, the tableware can carry people's pursuit of better life, and its' design gradually develops from basic functional demand to personalized demand. Because diversified lifestyles affect design positioning of products, the designers begin to pay attention to how to make the product design be adaptable to individualized family lifestyle. By investigating the lifestyle of urban residents who were born in 80s, this paper explores the potential demand of design and puts forward targeted innovative tableware design strategy.

II. LIFESTYLE AND PRODUCT DESIGN

A. Lifestyle

The psychologist Adler put forward the concept of lifestyle which was used to represent the morphological characteristics of people in the same culture. Now, the concept of lifestyle has been widely applied in the field of sociology and marketing. In 1963, Lazer applied lifestyle to marketing and proposed that the lifestyle could be used to describe the psychological characteristics of consumers. In the 1990s, the concept began to be used in the design field to explore the potential needs of customers.

B. Lifestyle and tableware design

This paper observes the environment and behavior of customers and finds the common characteristics to

design the questionnaires. Based on the questionnaire survey data, it completes quantitative analysis and identifies the typical characteristics of the lifestyles. According to the ethnic characteristics of different lifestyles, it proposes the design strategy.

III. RESEARCH ON THE RELATIONSHIP BETWEEN LIFESTYLE AND CUTLERY DESIGN REQUIREMENTS

In this study, 86 questionnaires are collected, and the factor analysis and cluster analysis are performed on the data by way of SPSS statistical analysis software. The Chi-square test is used to analyze the correlation among the background information, design requirements of tableware and the lifestyles.

A. Data analysis

Because of the correlation between lifestyle test statements, the factor analysis can extract the main factors from the sentences with large correlation to prepare for the clustering analysis.

1) *Factor analysis operability test:* In order to ensure the factor analysis is operable, it is necessary to complete the KMO (Kaiser-Meyer-Olkin) test. The result shows that KMO value is 0.682n which is greater than 0.5. If the associated probability value of Sphericity test of Bartlett is less than 0.01, it means the result is fit for factor analysis. ("Table I")

TABLE I. KMO AND BARTLETT TEST

	Sufficient degree of Kaiser-Meyer-Olkin metric	.682
	Approximate chi square	234.185
Sphericity test of Bartlett	df	78
	Sig.	.000

2) *Factor extraction and naming*: Thirteen test sentences should be selected for the purpose of lifestyle survey. The absolute value of variable load coefficient is greater than 0.6 after maximum variance orthogonal rotation. Four principal component factors are extracted

from research, and the principal component factor contains ten variables. According to the specific content of the factor principal component factor, the study names the factor. ("Table II", "Table III", "Table IV")

TABLE II. THE SUMMARY OF LIFE FORM FACTORS STATISTICAL CHARACTERISTICS

	Characteristic value	Variance contribution rate	Cumulative variance contribution rate
<i>Factor 1</i>	3.148	24.219	24.219
<i>Factor 2</i>	1.848	14.215	38.434
<i>Factor 3</i>	1.312	10.093	48.526
<i>Factor 4</i>	1.263	9.715	58.241

TABLE III. FACTOR INCLUDING VARIABLE AND LOAD FACTOR

Factor	Variable content	Load coefficient
<i>Factor 1</i>	I enjoy chatting with friends and family during a dinner party.	.791
	I pay attention to local food and hospitality customs.	.725
	I want to spend time with my family.	.696
	I like to try different dishes.	.673
<i>Factor 2</i>	I pay attention to eating healthy.	.719
	Practicality is my first consideration in choosing products.	.715
	I like to cook by myself.	.677
<i>Factor 3</i>	I feel stressed about life.	.624
<i>Factor 4</i>	I spend most of my time on work.	.759
	In terms of meals, I pay more attention to saving time.	.737

TABLE IV. NAMING OF FACTORS

Factor	Content	Explanation
<i>Factor 1</i>	freshness and friendliness	Like to try different tastes of food, enjoy the food interaction with relatives and friends, pay attention to the eating lifestyle.
<i>Factor 2</i>	health and practicality	Pay attention to healthy diet and tableware practicability.
<i>Factor 3</i>	significant pressure	Feel the pressure of life.
<i>Factor 4</i>	efficient career	Most of the time is focused on work and time saving.

As the results of factor analysis, classification criteria of ethnic groups are scientifically determined by SPSS rapid clustering (K-mean). The consumers are classified according to the extreme values. Final cluster center shows the significant difference between two groups of consumers. The first group is less conscious of work, social and life than the second group. According to the average score limit of the final cluster

center, these two groups are named that the "free style" group and the "life style" group. ("Table V")

TABLE V. FINAL CLUSTER CENTER

	The free style group	The life style group
<i>freshness and friendliness</i>	13.53	17.01
<i>health and practicality</i>	9.84	11.91
<i>significant pressure</i>	3.58	3.72
<i>efficient career</i>	5.95	6.24

Chi-square test is used to detect the basic information of population. The purpose of Chi-square test is to measure the deviation between the measured data and the theoretical deduced data. If the significance value is 0, it means that they are completely consistent. The result shows that education, occupation and working hours play important roles in analyzing the characteristics of ethnic life style. Most of people belonging to the "free style" group hold junior

college or university respectively degree, at the same time, a lot of people belonging to the "life style" group hold graduate degrees. In terms of occupational distribution, most of the "free style" group members are employees and freelancers who work long hours, and some of the "life style" group members are workers in government agencies and public institutions who have more awareness to focus on the details and quality of life. ("Table VI")

TABLE VI. STATISTICAL RESULTS OF CHI-SQUARE TEST

	Sex	Age	Education	Profession	Work hours
<i>Chi-square test</i>	7.860 ^a	6.930 ^b	61.442 ^b	53.256 ^c	71.581 ^b
<i>df</i>	1	3	3	5	3
<i>Salience</i>	.005	.074	.000	.000	.000
	Sex	Age	Education	profession	Work hours

B. Life style of urban residents who were born in 80s

In view of the different needs, the design can be based on the chi-square test. The result shows that the significant values of all the items surveyed are 0, it

means that deviation between the actual measured value and the theoretical inference value is not significant. The anticipation is consistent with the actual statistics. ("Table VII")

TABLE VII. STATISTICAL RESULTS OF CHI-SQUARE TEST

	Local characteristics	Convenient and convenient	Modern minimalist style	Serialization	Local eating habits	Interesting design
<i>Chi-square test</i>	87.023 ^a	119.814 ^a	98.070 ^a	59.000 ^a	67.395 ^b	45.628 ^b
<i>df</i>	4	4	4	4	3	3
<i>Salience</i>	.000	.000	.000	.000	.000	.000

Based on the analysis of lifestyle, basic information and eating behaviors, the basic characteristics of these

two groups are summarized as follows ("Table VIII", "Table IX") that:

TABLE VIII. STATISTICAL RESULTS OF CHI-SQUARE TEST

	Indoor and outdoor inclusiveness	Consistent with home decoration style	Use of different age groups
<i>Chi-square test</i>	77.488 ^a	30.186 ^b	95.047 ^a
<i>df</i>	4	3	4
<i>Salience</i>	.000	.000	.000

TABLE IX. THE COMPREHENSIVE DESCRIPTION TABLE OF LIFESTYLE GROUPS

	The free style group	The life style group
<i>Lifestyle</i>	Most of them hold junior college or university respectively degree. They are newly graduated or newly entered the workplace. They have not formed a family. They are enterprises and freelances. Their working hours are not fixed, and their quality of life is not high.	Most of them have master's degrees. They have stable jobs and family. They have higher quality of life. At the same time, they have a certain sense of pressure.
<i>Eating behavior at home</i>	They pay more attention to convenient meals. They don't like to cook for myself. They like to eat out with friends and family on holidays.	They enjoy eating and interacting with friends and family. They pay attention to the custom and culture of eating and drinking. They are concerned about the healthy diet and the practicability of tableware.

IV. DESIGN STRATEGY OF TABLEWARE FOR URBAN RESIDENTS WHO WERE BORN IN 80S

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A. Authors and affiliations

According to the difference of living conditions and eating behavior between these two groups, this paper summarizes the design strategies of tableware. The "free style" group focuses on tableware function, while the "life style" group focuses on using experience

1) *Being convenient and efficient*: The designers can guide the dining behavior of users by ways of creative modeling and functional presupposition. The series of tableware platters can be used for diverse food. The foldable design can help users to achieve multiple dining places.

2) *Indoor and outdoor consideration*: When friends visit their home, they prefer to dining out with friends. The users can go out for dinner and bring along self-made complementary food by ways of multifunctional design or convenient storage.

B. Identifying the headings

1) *Inclusiveness*: Inclusive design means to maximize product benefits from the user community and respect for the diversity of the population. The size of tableware should fit all family members through rigorous dimensional research. Some auxiliary functions can help parents to take care of their children.

2) *Emotional communication*: Designers can help people's emotional exchange. Some additional functions of food-making utensils are beneficial for family emotional interaction. Bionic design increases

the interest of tableware by extracting elements and combines deformation of animals, plants and characters.

3) *Health guidance*: The designers can provide healthy diet concerns by ways of modeling language to guide healthy lifestyle. The design of DIY healthy food can help users to make no added juice or food. Limited cup design can prompt users not to drink moderately.

V. CONCLUSION

This paper takes urban residents who were born in 80s as the research object to explore the relationship between lifestyle and product design. Through the combination of qualitative and quantitative research, target users are grouped according to lifestyle factors. According to the differences of dining behavior and design needs of groups, this paper puts forward the tableware design strategies for different ethnic groups.

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