

# Construction of Hangzhou Silk Cognitive Evaluation System Based on the Grounded Theory

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## Abstract

The article adopts the grounded theory research method, where it takes “how people cognitive and evaluate Hangzhou Silk” as the research subject, and uses qualitative interviews that were obtained through interviews and investigations as data source. With the systematic analysis of the original data, this paper gradually extracts and summarizes the content dimension and evaluation results of consumers' cognition evaluation on Hangzhou silk using the quantitative analysis software NVivo 11.0. Finally, based on the eight dimensions of the above research, this study combs and analyzes the logical relationship between them, and constructs the cognition evaluation system of Hangzhou silk. The research conclusion enriches and expands the research scope in the field of silk cognition research.

**Keywords:** Hangzhou silk, grounded theory, cognitive evaluation, data coding

"People rode all the way to Hangzhou, half for the West Lake, half for silk." Hangzhou silk has a long history and is famous. It once created the glorious of Chinese silk. And it still plays a major role in the development of Chinese silk currently. In recent years, under the background of the “The Belt and Road” national strategy, the establishment of the *international silk union* in Hangzhou, and the increasing popularity of silk products, Hangzhou silk has once again attracted people's attention. However, in the actual survey, it is found that the evaluations that people had given to Hangzhou silk were always half praiseful and half contemptible. The reasons may include individual subjective factors and objective environmental factors. So in the consumer demand oriented market, it is of great significance to understand the people's cognitive dimension and build a scientific and effective evaluation system for promoting the overall image of Hangzhou silk and expanding the consumption of silk.

## 1. Introduction of Grounded Theory

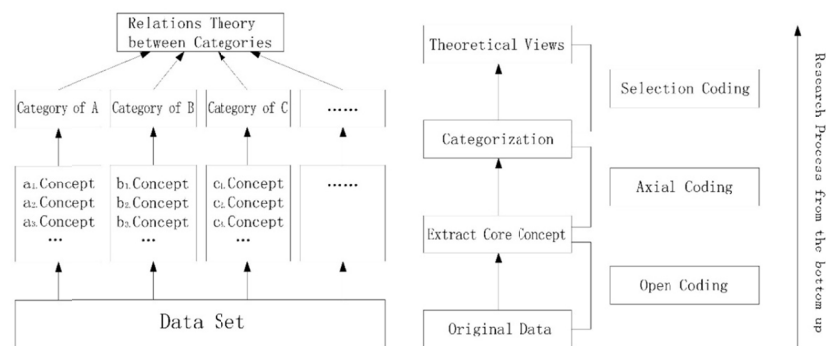


Figure 1. The Research Process of Grounded Theory

Grounded Theory is first proposed by Barney Glaser of Chicago University and Anselm Strauss of Columbia University in 1967 (Glaser & Strauss, 1967, p. 271). It is a scientific and effective research method in the field of qualitative research. The core content of Grounded Theory is to start from the original data and extract the theory

from phenomenon. The research process of the Grounded Theory is illustrated in Figure 1. Through the analysis of the original data, it finds out the core concepts that are related to goals and can reflect the essence of them. And then, the core concepts are analyzed, summarized and categorize one by one. Finally, it will analyze the relationships and functions among different categories, then build a result theory related to research objectives.

## 2. Collect the Interview Data

Qualitative survey is an important method to collect information in research process of Grounded Theory. In this study, the in-depth interview is divided into three processes. The first step is the small sample pre investigation stage: For the research topic, using “one-to-one” and “face-to-face” method, ten people were randomly selected to conduct an open interview, in order to revising the interview outline; The second step is the large-scale investigation stage: This study collects mass data by using these methods (such as “one-to-one”, “face-to-face”, “online” and “telephone” interviews); the third step is using "focus-groups discussion " research methods to get more original data in the large-scale research phase. The focus group consists of 4 to 8 people, where they take a thematic divergent discussion with each other in this third step. The “focus groups” are designed to enable interviewees to inspire each other and expand their thinking.

The interview revolves around the "Hangzhou silk in the eyes of the people", and revised the interview outline after the small sample interview. The subject is decomposed into four sub-questions with inner logic: (1) how to understand the word "Hangzhou silk"; (2) what do you think of "Hangzhou silk", and why do you think so? (3) what kind of "Hangzhou silk" do you expect? What about the "Hangzhou silk" in reality? The collection contains three part. The first is the demographic characteristics of the respondents (including gender, age, occupation, education level, and income). The second aspect is the interviewees' understanding of "Hangzhou silk". And the last aspect contains three points: the respondents' cognition of "Hangzhou silk", the results of cognitive evaluation, and the reasons for it.

The depth interview began in July 2015 and ended in February 2016, which lasted for eight months, spanning three seasons. The number of deep interviews is 216, including 184 randomly selected ordinary consumers and 32 professionals engaged in production, design, marketing, management and research in the industry chain of Hangzhou silk. The purpose is to explore people's cognitive evaluation of "Hangzhou silk" from different perspectives. The description of the interview sample is detailed in Table 1.

Table 1. The Demographic Characteristics of the Surveyed Population

Item		Group	Sample	Effective Percentage (%)
Gender	1	Male	87	40.28
	2	Female	129	59.72
Age	1	Below 25	22	10.19
	2	Between 26~35	59	27.31
	3	Between 36~45	63	29.17
	4	Between 46~55	51	23.61
	5	Above 55	21	9.72
The Highest Education	1	College and below	65	30.09
	2	Bachelor	99	45.83
	3	Postgraduate and above	52	24.07
Monthly Income	1	Less than 3500 RMB	31	14.35
	2	Between 3501~6000 RMB	51	23.61
	3	Between 6001~10000 RMB	78	36.11
	4	Above 10000 RMB	56	25.93
Whether Silk Industry Practitioners	1	ordinary Consumer	184	85.19
	2	Silk industry practitioner	32	14.81
Life Span in Hangzhou	1	Less than one year	24	11.11
	2	1~3 years	35	16.20
	3	4~10 years	57	26.39
	4	11~20 years	68	31.48
	5	More than 20 years	32	14.81

Interview Method	1	face-to-face interview	118	54.63
	2	Online interview	54	25.00
	3	telephone interview	23	10.65
	4	focus groups	56	25.93

Note: In the interview method column, there are 35 interviewers took part in one to one (face-to-face, online or telephone) interview, and also participated in the focus group.

**3. Data coding**

Data coding is the process of data extraction and analysis in qualitative research. It is divided into three steps: open coding, axial coding and selection coding.

*3.1 Open Coding*

Open coding is the process of discretizing and reorganizing the original data, and then conceptualizing each statement; its function is to identify the phenomena, define concepts, find categories and collect problems. In this process, the author label every sentence that can measure or evaluate Hangzhou silk, and then develops 728 initial concepts from the source material. However, these concepts overlap to a certain extent. According to the logical relationship among the initial concepts (such as causal relationship, membership, correlation, homogeneity, and so on),the concepts are summed up, classified and arranged, so as to further refine the 22 initial categories, such as quality (Ye, Li, & Qian, 2008, pp. 662-666; Liu et al., 2007, pp. 49-52), price, design, emotional tendencies... etc. The open coding analysis example is shown in Table 2.

Table 2. An Example of Open Coding Analysis

Data Encoding and Original Statement	Initial Concept	Initial Category
a1 Silk dress style is single, out of vogue, not young enough, and it is too bright-colored and gorgeous. How can I wear such a dress?	aa1 single style	Design Innovation Ability
a2 The design of silk products is either imitation of foreign patterns or simply inheritance, and lack of innovation.	aa2 slightly out of vogue	
a3 Silk has classical charm and makes people look good.	aa3 not young enough	
a4 Silk clothing is old-fashioned and poorly patterned. It's a pity for such a good fabric.	aa4 too bright-colored	
a5 Silk is elegant, with its own characteristics. Its variety, texture, pattern and style should be specially designed and developed.	aa5 lack of innovation	
a6 Silk garments are not fully developed in China. They mainly include cheongsam, pajamas, scarves and so on. Silk clothing lacks fashion elements and therefore lacks the support of young consumer groups.	aa6 classical charm	
Perhaps the reason is that the color and manufacturing process of silk fabrics need to be improved to fit the needs of fashionable and fast-paced modern people, so that there will be a larger market.	aa7 old-fashioned style	
a7 There are too few silk products that can stand out.	aa8 lock of design feeling	
	aa9 varieties, textures, patterns, styles need to be specially designed	
	aa10 lack of fashion elements	
	aa11 The color and manufacturing process need to be improved	

*3.2 Axial Coding*

The axial coding is the process of refining and distinguishing the initial category formed in the open coding. Its function is to identify and construct the interaction between the various categories, according to the research target (Uwe Flick, 2001, p. 248). Through depth analysis of the 22 initial categories formed by the open coding, this paper searches the relationship between each category, then and reclassifies those categories. Finally, eight main categories are formed: product knowledge, industry information, product performance, service performance, brand performance, social responsibility, cultural connotations (Huang et al., 2011, pp. 129-130; Zhang, 2011, pp. 50-53) and synthetic evaluation (see Table 3).

Table 3. Axial Coding

Main Category	Initial Category	Original Concept	Evaluation Index
Product Knowledge	Professional Knowledge	performance characteristics: Comfort Property; Aesthetic Property; Durability; Health Function; Convenience	Professional Knowledge level
	Experience Knowledge	Purchase Experience; Application Experience; Judging Ability	Experience Knowledge level
Industry Information	Industry Promotion	Publicizing ; Promotion; Consumption Concept of Silk; Advertisement	Impressive Effective
	Direction of Public Opinion	Positive Information; Negative Information	Information Processing Ability
	Information Channel	Paper Medium; Electronic Media; Public Praise; Other things	Smooth Information Channel
Product Performance	Properties	Wearability (Comfort Property; Aesthetic Property; Durability)	Practicality
	Quality	Practicality (functional application; Service life; Convenience)	Wearability
	Price	model quality; Sewing Quality; dyeing Quality; packing Quality	High Quality
Brand Performance	Design	Performance- Price Ratio; Support Value Ability; Price	Performance Price Ratio
	Brand Positioning	various Kinds; Costume Design; Fabric Design; Others	Design and Innovation Ability
	Famous Brand	Many Product Brands; Brand Differentiating Dujinsheng; CATHAYA; WENSLI; et al. Identifiability;	Positioning Accuracy
	Market Performance	Market share; Growth Potentiality	Popularity
Service Performance	Service before Sale	Provide Professional Advice; Give Presentations	Market Potential
	Service in Sale	Provide Instructions; Provide Accessories; meet the Unique Needs; Impart Knowledge of Washing and Protection	Specialty
	Service after Sale	virtual Communities; the Guarantee of After-sale Services	Considerate Reliability
Social Responsibility	Staff and Environment	Shopping Environment; the Convenience of Purchase; Staff Quality; Experience of Try-on	Service Attitude
	Cultural Inheritance	Inheriting Silk Culture; Promote and Develop the Silk Culture	Store image
	Consumer Protection	Products and Services are Safe and Reliable; Treat Every Consumer with Equality; Provide better Products and Service; the Guarantee of After-sale Services	Responsibility
Cultural Connotation	Environmental Protection	Reducing Pollution; Produce Environment-Friendly Products; Support Environmental Action	
	Charity	Participate in Charity Activities; Help Tackle Social Problem; Caring Vulnerable Group	
	Historical Attribute	Silk Industry Culture; Old Brand	Long History Richness
Synthetic Evaluation	Cultural Attribute	National Culture; Hangzhou Culture	Nationality Regionalism
	Emotional Inclination	Regional Tendency; Complex of Hangzhou Silk	authentic; be interested in; look forward to
	Rational Cognition	Famous; High Status; Distinctive; Large-scale	Popularity Reputation

### 3.3 Selection Coding

Selective coding is to determine the core category, find the typical relationship between the core category and other main categories, in order to construct build the theoretical mode. That is to say, the role of selective coding is to connect all the other classes into a complete whole. According to the original data, the relationship between the main categories is analyzed. After selective coding, this study gets the core category, which is the "overall evaluation" of Hangzhou silk.

Taking the overall evaluation as the core, it controls 7 main categories and 22 initial categories. It can be summarized as follows: the knowledge of silk products and the information of Hangzhou silk industry are the inner individual factors affecting the overall evaluation of Hangzhou silk. The product performance, brand performance, service performance, social responsibility and cultural connotation of Hangzhou silk are the external environmental factors affecting the people's evaluation of the Hangzhou silk whole. Internal factors and external factors interact with each other and influence consumers' overall evaluation of Hangzhou silk. And the overall evaluation of Hangzhou silk by the people can be measured from two initial categories: emotional orientation and rational cognition.

### 3.4 Theoretical Saturation Test

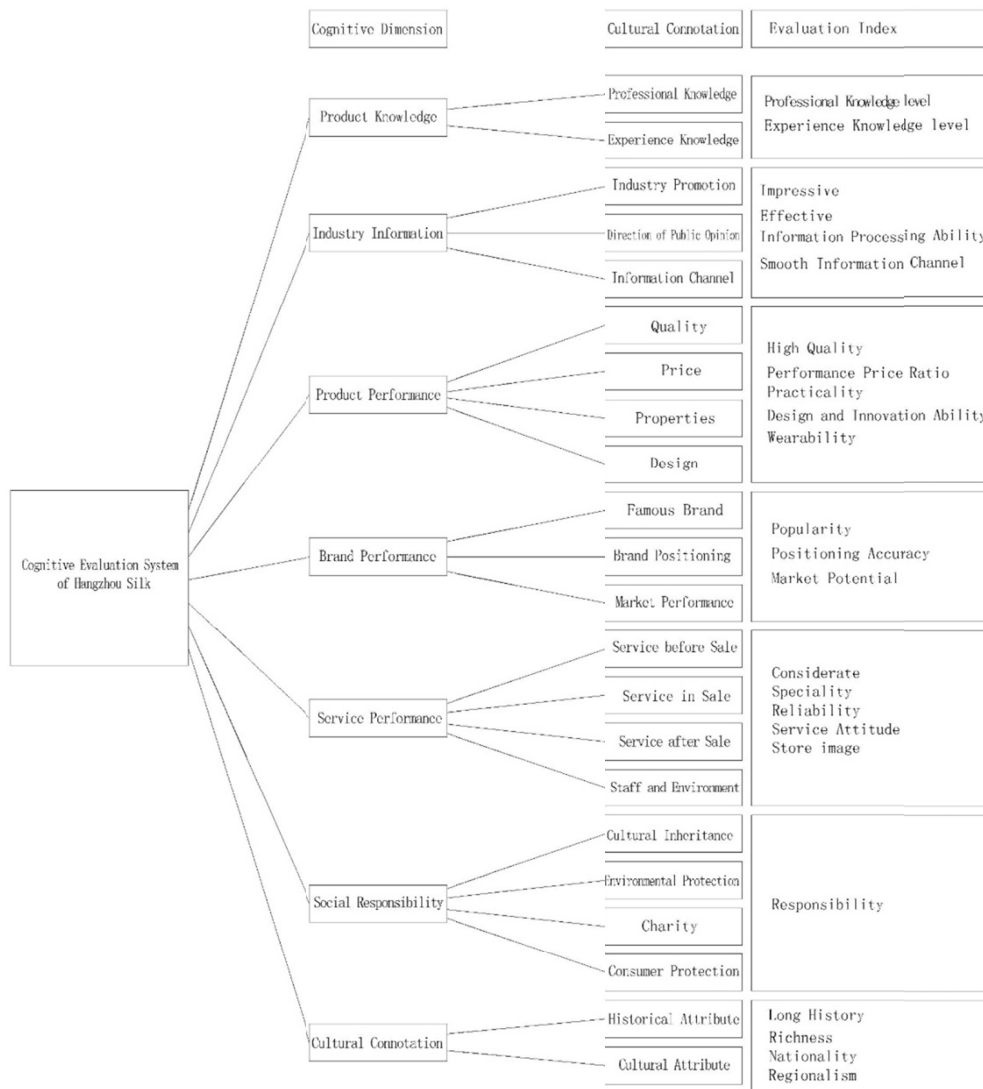


Figure 2. Cognitive Evaluation System of Hangzhou Silk

Theoretical saturation means that new categories cannot be obtained from extra data, which is also a criterion for stopping sampling. Through the analysis of the remaining 1/3 of the original materials, there are no new categories in the conceptual model of Hangzhou silk cognitive evaluation system. The existing model system

still includes the theoretical paradigms derived from new materials. And there is no new content in the eight main categories. So, by theoretical saturation test, there is no neglected elements or relationships between various elements. Based on these reasons, the Hangzhou silk cognition evaluation system shown in Figure 2 is relatively saturated.

According to Figure 2, there are seven dimensions of Hangzhou silk cognition evaluation. They are product performance, service performance, product knowledge, brand performance, industry information, social responsibility and cultural connotation. The evaluation indexes are quality, cost performance, practicality, taking and design innovation ability; service capacity and professionalism, service attitude, store image and reliability; professional knowledge level and experience richness; popularity, positioning and market potential; industry publicity and promotion, media guidance and information channels; inheritance of national culture, environmental protection, supporting for public welfare undertakings and safeguarding the rights of consumers; having a long history and deep culture, characteristics of national culture and origin culture (Xu & Yuan, 2011, p. 9; Zhu, 1985, pp. 12-18).

#### 4. Research Conclusion

Based on the grounded theory and the qualitative interviews of the public on Hangzhou silk cognition evaluation, eight main categories were extracted, including product performance, service performance, product knowledge, brand performance, industry information, social responsibility, cultural connotation and overall evaluation. Among them, taking the overall evaluation as the core, it controls 7 main categories and 22 initial categories, all of them constitute the Hangzhou silk cognition evaluation system. The logical relationship between the core category and the main categories implies the following: (1) The lack of knowledge in silk fabric products have significant negative impact on the overall evaluation of Hangzhou silk; (2) The negative information about Hangzhou silk negatively affects the public's influence on Hangzhou Silk. Overall evaluation; (3) The better the performance of Hangzhou silk products, the higher the public's overall evaluation of Hangzhou silk; (4) The better performance of Hangzhou silk services, the higher the overall evaluation of Hangzhou silk; (5) The better performance of Hangzhou silk brand The overall evaluation of Hangzhou Silk is higher; (6) The stronger the sense of corporate social responsibility in Hangzhou silk industry, the higher the overall evaluation of Hangzhou Silk is; (7) The deeper the cultural connotation of Hangzhou Silk Industry, the higher the public's overall evaluation of Hangzhou Silk is.

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