



# Research on a Measurement Scale for the Authenticity of Town Resource Endowment—Taking Chongqing Small Town in China as an Example

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**Abstract.** Small towns in rural areas have abundant resources and different forms of resources, creating different development patterns of small towns with different characteristics. The construction of agriculture, rural areas, and farmers has achieved different achievements with the support of local government departments and they have been established industrial patterns such as tourism, agricultural products, and processing industries to varying degrees. However, it still highlights phenomena such as industrial dislocation, resource waste, and unreasonable factor allocation. We attempt to take a small town in Chongqing as an example to deeply explore the “authenticity” of resource endowment in rural towns, developing a measurement scale for the authenticity of resource endowment. We construct an industrial brand path and rural cultural resource path that conforms to the resource endowment of each rural town, achieving a differentiated and distinctive development pattern of “one town has one product, one industry, and one charm” in rural towns.

**Keywords:** Resource endowment authenticity · Measurement scale · Geographic resource elements · Cultural resource elements · Industrial resource elements

## 1 Introduction

Small towns in rural areas in China have abundant resources, and different forms of resources (natural resources, economic resources, cultural resources, and social resources). The development of human civilization has changed from generation to generation, resulting in different characteristic development patterns of small towns. In July 2016, the Ministry of Housing and Urban Rural Development, the National Development and Reform Commission, and the Ministry of Finance jointly issued the “Notice on Carrying out the Cultivation of Characteristic Small Towns” (Jiancun [2016] No. 147), proposing to cultivate around 1000 distinctive and vibrant leisure tourism, commercial and material flow, modern manufacturing, education and technology, traditional culture, beautiful and livable characteristic small towns by 2020, leading and driving the construction of small towns nationwide, continuously improving the construction level and development quality.

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China has attached great importance to agriculture, rural areas, and farmers for a long time, and government departments have adopted various supportive policies. Rural construction has also established industrial patterns such as tourism, agricultural products, and processing industries to varying degrees. However, it is particularly prominent that some construction projects have followed the trend seriously, resulting in industrial dislocation, resource waste, and unreasonable allocation of factors, which are manifested as: ① production factors transferred to non-agricultural factors and flowed to cities. ② rural construction land is abandoned and cultivated land is idle; ③ rural ecological resources were damaged and local cultural resources declined. Therefore, it is particularly important to solve the problem of optimizing the allocation of production factors in rural towns.

## 2 Literature Review

### 2.1 Research on the Construction of Small-Town Revitalization

At present, there are many studies on the development and revitalization of rural small towns, mainly divided into three categories: cultural resource development, natural resource development, and economic resource development: ① From the perspective of developing cultural resources (agricultural culture, folk customs, traditional crafts, festival culture, folk art, and other unique rural cultural resources), scholars have proposed the development of rural tourism based on the true perception of tourists (Yubin, 2018; Yifeng et al., 2017) [1]; Some point out several hot issues on the protection and tourism development of historical and cultural villages and towns in China based on the theory of protecting historical and cultural cities (Hongwei, 2010) [2]. ② From the perspective of natural and economic resource development, some have proposed industrial restructuring (Yujun and Jijiao, 2018) [3]; Scholars have proposed policy paths for the construction of typical characteristic towns in Zhejiang based on the integration perspective of resources (environmental resources, organizational resources, institutional resources) (Zhiqiang and Ting, 2019) [4]; Some has theoretically proposed that the development of characteristic towns and can divide into industrial development models, functional development models, and mechanism development models based on production factors (Yijing, 2018) [5].

From the current research status, it can be seen that: ① scholars mainly focus their research on rural tourism industry of town construction from the perspective of authenticity, and there is relatively little research on the correlation between innate industrial endowments and acquired industrial endowments, as well as how to distinguish them. ② Scholars have conducted research on resource development and production factor utilization from different perspectives, although they have proposed and addressed the industrial layout and economic development of rural towns to varying degrees, there is relatively little research based on the “reason” of layout. In summary, most previous studies have highlighted the imitative, standardized, and guided construction of township industrial forms. Although certain results have been achieved, research on the optimal allocation of local production factors has not yet formed a system based on the inherent endowment mechanism of rural town resources.

## 2.2 Related Literature on the Interpretation of the Authenticity of Resource Endowments

### Meaning of Authenticity

Authenticity was originally a core concept of western tourism sociology research since the 1960s. Some people translated it as “authenticity”, “authenticity”, “authoritative” and “original”. The original research emphasized traditional culture in the context of museums. It was divided into the authenticity of objectivism, the authenticity of constructivism, the authenticity of existentialism and post modernism. Customized authenticity was proposed and was based on the perspective of tourism experience, which combines the experience of tourists with the object to jointly construct, and it is a subjective perception of objective authenticity (Ning, 1999) [6]. Xinyou and Yongjian (2013) [7] introduced authenticity into rural tourism, which refers to the rural tourism environment based on traditional rural layout, protecting its original natural environment, natural lifestyle, and authentic folk culture. Rural communities live in harmony with the environment and people, and tourists experience an authentic rural state. Moreover, the authenticity protection of the tourism environment is the pursuit of historical continuity and the true ‘original state’ of change. Jinyan (2014) [8] redefined the concept of heritage authenticity using a spatiotemporal two-dimensional method, mainly based on the concept of historical and cultural cities, and developed criteria layer indicators: terrain elements, physical elements, and non-physical elements. The indicator level of terrain elements is characterized by geographical space (topography, rivers, greenery, climate), historical space (historical process and cultural content since the establishment of the city) and field, The physical elements are characterized by appearance (overall materials, colors, scale, carving, form, etc.), internal quality and structure, design and techniques, overall layout and configuration, essential characteristics (construction concept and functional evolution of the ancient city), and non-physical elements (inheritance, craftsmanship, materialization, locality, and experiential perception). Jingru (2015) [9] developed a tourist reference authenticity measurement scale based on the perspectives of objective authenticity, customized authenticity, and existential authenticity. Yifeng et al. (2017) [1] used Enshi Prefecture in Hubei Province as an example to construct a measurement scale for the authenticity of tourism culture: authentic ethnic customs, strong ethnic atmosphere, simple folk customs, authentic ethnic culture, and traditional lifestyles.

### Authentic Meaning

Xiaolin, Haizhong and Liting (2015) [10] proposed the measurement of “brand authenticity” for regional brands, which includes four dimensions: brand historical legitimacy, historical inheritance, social legitimacy, and brand values based on qualitative research and quantitative research. Huilong et al. (2020) [11] proposed and developed the dimensions of brand authenticity: original continuity (source uniqueness, inheritance of skills, inheritance legitimacy), cultural constructiveness (concept cognition, cultural popularity

and positioning accuracy), and customer connectivity (goal consistency, self-expression, and group attribution).

### **Resource Endowment**

Resource endowment is proposed by Swedish economist Orrin, who believes that various production factors such as labor, capital, land, and technology are used to explain the comparative cost advantage of goods exchanged in a country's international trade. Therefore, the resource endowment of a region can be divided into natural resources and socio-economic resources. Natural resources include water, land, minerals, animals, and plant resources, while socio-economic resources are generated by human socio-economic activities, including resources such as culture, manpower, infrastructure, and policies (An min and Wen hui, 2009) [12]. Xue et al. (2019) [13] proposed a development model for the construction of characteristic towns with resource endowments based on three perspectives: production, ecology, and life. Among those, the production perspective mainly focuses on the development of small-town characteristic industries such as industry, tourism, and e-commerce. The ecological perspective mainly focuses on the excavation of the ecological environment characteristics of the small town, while the living perspective mainly focuses on the renovation and reconstruction of the town's infrastructure.

### **2.3 Analysis of the Concept and Connotation of the Authenticity of Resource Endowment**

The above concepts are defined and based on the historical and cultural aspects of the tourism industry, as well as the restoration and protection of local tourism resources. They are mostly based on the perspective of the tourism industry. The research on authenticity mainly originates from the perspective of brand inheritance, mainly based on the perspective of product brand inheritance and reshaping. The resource endowment is mainly based on the natural resources and acquired resources of the town. From an industrial perspective, it does not only refer to the tourism industry, but can also be the local characteristic agriculture and industry.

We propose that the authenticity of small-town construction based on resource endowment refers to the fact that in the development of a small town, if some of its own resources have relative comparative advantages, they can be deeply explored and created into the brand characteristics of the town. This includes both copying the authenticity of the original resources and adapting to the situation for future development.

## **3 Development of a Measurement Scale for the “Authenticity” of Town Resource Endowment**

We attempt to deeply explore the “authenticity” of Linshi Town in Fuling with innate endowment industry, Wuling Town in Wanzhou with historical and cultural resources, and Longshui Town in Dazu with created industry. We develop a measurement scale for the “authenticity” of town resource endowments, and build an industrial brand path and rural cultural resource path that conforms to the resource endowments of each rural

town. Finally, we achieve a differentiated and distinctive development pattern of “one town with one product, one industry, and one charm” in rural towns.

### **3.1 In Depth Interviews**

Due to factors such as the natural environment, economic development, and historical inheritance of the location, small towns have different characteristics in history, culture, region, and ethnicity. Each rural town has its own unique imprint and endowment of resources and culture. Therefore, the measurement of the authenticity of its resources also has both qualitative and quantitative indicators.

This study adopts a semi-structured in-depth interview, with uncertain topics, content, and order. The scope of the interview is usually determined in the form of an outline. During the interview process, the interview content can be adjusted according to the actual situation. A total of 15 people were interviewed in this study, with 5–6 people in each batch. Each batch of interviewees should have the same age, occupation, income level, and geographical identity characteristics as much as possible. We summarize the interview results to extract the “authenticity” elements of the town’s resource endowment: natural resources, traditional culture, industrial history, town style, residential characteristics, characteristic industries, folk customs, and other multiple items.

### **3.2 Measurement Scale Determination**

We intend to develop a measurement index system from two dimensions of time and space, as well as two perspectives of tourists and residents. We also consider subjective indicators of the true perception of town resource endowment and objective indicators of town construction planning and development. Based on the resource elements inherent in the town mentioned above, we will deeply implement the “authenticity” mining project for town resources. Through in-depth interviews and literature review, we will classify the “authenticity” of town resource endowments into three aspects: geographical resources, cultural resources, and industrial resources to construct an indicator system.

#### **Geographic Resource Elements**

Geographical resource elements are represented as topographical resources and natural resource elements. Topographical resources factors mainly include the natural spatial interface characteristics exhibited by factors such as topography, climate, rivers, soil, and rivers. Natural resources include land, forests, grasslands, animals, minerals, rivers, and other natural resources.

#### **Cultural Resource Elements**

The elements of cultural resources are characterized as field culture, traditional culture, and cultural heritage. Field culture refers to the continuity of urban residential buildings, street layout, public facility buildings, the architectural style displayed by historical buildings with a long history and cultural preservation, the original living atmosphere, habits, and behavioral styles of small-town residents. Traditional culture is characterized by agricultural culture, folk customs, traditional crafts, festival culture,

and folk-art inheritance. Cultural heritage is characterized as the authentic minority culture and unique traditional way of life in the local area, where there are many traditional industries, crafts, and handicrafts.

### **Industrial Resource Elements**

The elements of industrial resources are characterized as social resources and industrial heritage. Social resources are characterized as human resources and information resources; The representation of industrial heritage includes the degree of industrial heritage, historical memory of the industry and historical evaluation of the industry, and complementary industrial resources.

## **4 Testing the Authenticity of Resource Endowment in Small Towns**

### **4.1 Survey Questionnaire Design and Data Collection**

Based on the above scale elements, we designed a survey questionnaire covering three parts: greetings and lubrication issues, basic information, and classification information. Basic information mainly involves questions related to research questions, including geographical resources, cultural resources, and industrial resource indicator systems. Classification information in this study mainly includes gender, age, education level, occupations, and location. Considering the particularity of the research object, we set up typical classifications in the questionnaire, and adopt Linshi Town in Fuling with innate agricultural resource endowments, Wuling Town in Wanzhou with historical and cultural resources, and Longshui Town in Dazu with industrial resources as stimuli.

We adopt a combination of random sampling and stratified sampling with regional and age stratified sampling in the data collection. Considering that familiarity with the town will affect the understanding of the authenticity of the town's resource endowment. Therefore, when collecting data, a screening problem is designed, with as many samples as possible for the local area and as few samples for visitors. Based on the survey situation, sampling difficulty, and funding situation, a total of 400 questionnaires were distributed in the form of external network questionnaires and local questionnaires, with 371 valid questionnaires. The sample distribution is 28.3% for male samples and 71.7% for female samples; Samples aged between 20 and 30 account for 39.4%, samples aged between 30 and 40 account for 52.8%, and samples aged over 40 account for 7.8%.

### **4.2 Exploratory Factor Analysis**

The scale of this study consists of 18 items and a total of 371 questionnaires were distributed. The sample size that meets the exploratory factor analysis proposed by Nunnally (1978) [14] should be at least 10 times the number of measurements in the scale. We use SPSS 23.0 to perform factor analysis on the samples using the four-fold maximum orthogonal rotation method. The data in Table 1 shows that the value of KMO is 0.950, that is greater than standard value 0.70, and P value less than 0.0001 indicates that the data is suitable for factor analysis.

Through four maximum orthogonal rotations, the cumulative explained variance of the first eight factors is 64.595%. We named the factors as: topographical resource factors, natural resources factors, field culture factors, traditional culture factors, cultural heritage factors, social resources factors, and industrial heritage factors. The rotation factor loads are all above 0.5, and there is no significant cross factor analysis. Therefore, this questionnaire has good structural validity. After exploratory factor analysis, 18 items were ultimately retained (see Table 1). Below, SPSS 23.0 is used to perform consistency testing on four factors, and if a certain item is deleted and the Klenbach coefficient significantly increases, it is deleted to test the correlation between the item.

**Table 1.** Factor loadings

| Variable            |                       | Measurement items   | factor loading | <i>Cronbach a</i> |
|---------------------|-----------------------|---|----------------|-------------------|
| Gegraphic resources | Topgrapical resources | 1. The geological and geomorphological features are very prominent, and the natural spatial interface is very typical.      | 0.613          | 0.830             |
|                     |                       | 2. The characteristics of hydrological and climatic factors such as oceans, glaciers, rivers, and lakes are very prominent. | 0.622          |                   |
|                     | Natural resources     | 1. Animal resources (ornamental animals, rare animals) are very abundant.   | 0.523          | 0.817             |
|                     |                       | 2. Plant resources (land, forest, grassland, vegetation) are very rich.   | 0.766          |                   |
|                     |                       | 3. The mining resources (conventional and rare metal mines) are very abundant.  | 0.711          |                   |

(continued)

**Table 1.** (continued)

| Variable           |                     | Measurement items  | factor loading | <i>Cronbach a</i> |
|--------------------|---------------------|--|----------------|-------------------|
| Cultural resources | Field culture       | 1. The town's architecture has a long history and cultural preservation is rich, and historical spatial interface is very typical.           | 0.500          | 0.786             |
|                    |                     | 2. The characteristics of urban residential buildings, street layout, and public facilities are very typical.                                | 0.733          |                   |
|                    |                     | 3. The continuity of the original living atmosphere, habits, and people's behavior is very strong.   | 0.605          |                   |
|                    |                     | 4. Food culture and local clothing features are obvious.   | 0.611          |                   |
|                    | Traditional culture | 1. The inheritance of agricultural culture, traditional craftsmanship, festival culture, folk customs, and folk art is particularly evident. | 0.684          | 0.786             |
|                    |                     | 2. The inheritance of religious beliefs and ethnic culture is particularly evident.  | 0.556          |                   |

(continued)



**Table 1.** (continued)

| Variable             |                     | Measurement items  | factor loading | <i>Cronbach a</i> |
|----------------------|---------------------|--|----------------|-------------------|
|                      | Cultural heritage   | 1. The authentic minority culture and unique traditional way of life in the local area can be felt and seen. | 0.652          | 0.810             |
|                      |                     | 2. There are many traditional industries, crafts, and handicrafts in the local area.                         | 0.726          |                   |
|                      | Social resources    | 1. Human resources is very rich.<br>2. Information resources is very rich.                                   | 0.773<br>0.804 | 0.852             |
| Industrial resources | Industrial heritage | 1. The degree of industrial heritage is very distinct.   | 0.603          | 0.819             |
|                      |                     | 2. The memory of industrial history and the tradition of commercial operation are very long.                 | 0.716          |                   |
|                      |                     | 3. The complementarity between industrial forms in small towns is high.                                      | 0.702          |                   |

### 4.3 Maional Empathy

This study further validated the reliability and validity of measurement items using confirmatory factor analysis, which includes content validity and constructive validity tests. Reliability analysis and content validity have been tested in the exploratory factor analysis mentioned above. Constructive validity is mainly tested through confirmatory factor analysis, including convergent validity and discriminative validity. Convergent validity can be tested by factor loading coefficients. If its significance (t-value) is greater than 0.45, the observed variable factor load reaches a significance level. In this study, the t-values of all factor loadings were greater than 0.45, indicating that the factor loadings

**Table 2.** CFA fitting indices

|                |                    | Absolute fitting index |      |       |       | Relative fitting index |      |      | parsimony fit index |      |      |
|----------------|--------------------|------------------------|------|-------|-------|------------------------|------|------|---------------------|------|------|
|                | X <sup>2</sup> /df | GFI                    | AGFI | SRMR  | RMSEA | NFI                    | NNFI | CFI  | IFI                 | PNFI | PGFI |
| Standard value | <3                 | >0.9                   | >0.9 | <0.08 | <0.08 | >0.9                   | >0.9 | >0.9 | >0.9                | >0.5 | >0.5 |
| Actual value   | 2.40               | 0.92                   | 0.89 | 0.05  | 0.062 | 0.93                   | 0.94 | 0.96 | 0.96                | 0.69 | 0.62 |

of all indicators in their respective measurement concepts reached a significant level, and the factor loadings were between 0.51 and 0.87, indicating high convergence validity. At the same time, the standard error of the addition and subtraction of the correlation coefficients between potential variables does not include 1, and the common variance of all potential variables is less than 0.5, and compared with other potential variables, it is smaller than the average variance extraction of the potential variables. Therefore, the discriminant validity between measured variables is good.

#### 4.4 Measurement Model Verification

The scale of this study c we use the robust maximum likelihood method in structural equation software to estimate. The fitting index of the measurement model is shown in Table 2, and all indicators meet the optimal standard except for AGFI (affected by the small sample size in this survey), indicating a good fit between the CFA model and the data.

## 5 Conclusions and Future Research

We mainly explore the concept and measurement dimensions of the authenticity of small-town resources. Through a combination of qualitative and quantitative research, we supplemented in-depth interviews, determined the authenticity of research resources. After initial selection, 18 related items were determined as measurement indicators for the authenticity of town resources, and then merged into 7 secondary factors, namely topographical resource factors, natural resources factors, field culture factors, traditional culture factors, cultural heritage factors, social resources factors, and industrial heritage factors. Furthermore, it is merged into three primary measurement indicators: geographical resources, cultural resources, and industrial resources.

This research conclusion has important practical value for the branding construction of rural small towns. It breaks through the bottleneck of previous research, focuses on exploring and studying the resource endowment of small towns from the perspective of “authenticity” of towns. We explore the basic elements of town brand genes, and provides a path for the branding construction of small towns, truly solving the optimal allocation of town resources. Finally, we achieve optimal allocation and utilization of resources in rural towns and maximize economic, ecological, and social benefits.

The authenticity of brand resource endowment in this study is based on the perception level of consumers or residents, and is generally influenced by the respondents, sampling methods and scenarios, as well as the stimuli proposed for the survey. We conduct the future study on expanding the category design as much as possible when using small towns as stimuli.

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