The meanings of landscape elements in traditional village place names in southern Hunan, China

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Abstract: *In China, village place names have recorded and transmitted cultural information. However, with China's economy rapidly developing, the Hunan Province is becoming urbanized and numerous local village names with historical and cultural significance are disappearing. This paper explores the meanings of local landscapes by analysing village names. I extracted landscape elements from traditional village names and divided them into three categories: natural landscape elements, human landscape elements, and associated elements. The characteristics of 34 types of elements were summarized and analysed. The analysis shows that traditional village residents have more descriptive and less narrative expressions for natural landscapes and are more willing to assign other attributes to human landscapes, and the phenomenon of frequent description and recording of natural landscape elements by nomenclators was found by means of statistical analysis. From the subsequent interpretation of the case, we can also find that the inhabitants frequently recorded the location of water sources near their villages in the village place names and described the shape of the lowlands and rivers on which the villages were located. It shows the high demand of the traditional inhabitants for the environmental elements of their existence. Secondly, the correlation between plants and auspicious elements is high, a result that may be related to the meaning represented by plants in traditional Chinese culture, possibly because the namesake expresses a certain emotion or desire through the plants in the place name. The more obvious association of elements in the "settlement" category with "surname or personal name" is due to the long-term development of local residents of the same clan. This study reveals that the characteristics of village names and traditional village planning can be used to understand the meanings held by local residents of landscape elements near the villages.*

Keywords: *toponymy, landscape architecture, village names, name preferences, China, Hunan*

1. Introduction

A place name is a proprietary name given to a human geographic entity in a specific spatial location. As an important part of the cultural landscape, village place names have long recorded and transmitted various types of cultural information, including economic production, social organization, religious culture, and warfare [1].

For a long time, Chinese toponymic research used traditional qualitative analysis methods, focusing on the elaboration of the origin and meanings of toponyms, or on the study of their phonology, form, and meaning [2]. In the field of landscape architecture, most scholars use the Geographic Information System (GIS) technology to study the cultural landscape of geographical names (e.g., village names) using such methods as kernel density estimation [3][4][5][6] and visualization of spatial differentiation [7]. Such research is often concerned with the spatial distribution characteristics of place names. However, almost all of these studies classify place names using an etymological method, without addressing the origins of the names or the complete message the nomenclator(s) intended to convey. Additionally, intangible cultural heritage has received widespread attention from the academic community in relation to the cultural landscape of traditional Chinese villages. Within this line of research, the preservation of the toponymic cultural heritage of these villages is an important and active topic [8].

With the rapid development of China's economy, Hunan Province is becoming increasingly urbanized. Numerous local village and town place names carrying far-reaching historical and cultural significance are beginning to disappear [9]. This study analyzes and discusses the landscape elements that appear in village toponyms in the Hunan Province, revealing the emotions and meanings with which village residents imbue their local landscapes. This can help provide a basis for the cultural conservation of local place names as well as the landscapes mentioned in them.

2. Research Subjects and Methodology

2.1. Research Subjects

The "southern part of Hunan" includes cities, counties, and districts under the jurisdiction of Yongzhou and Chenzhou. This area is about 19,400 m2 (Figure-1). The topography of this area is complex, diverse. Since the area is far from the big cities of Hunan and is less affected by urbanization, there are still many well-preserved traditional villages [10]. These traditional villages in the southern region of Hunan have similar historical and cultural backgrounds and relative geographical integrity. In the study of historical and cultural landscapes, they are ideal objects of research.

In this paper, we selected 11 natural villages that have been nominated in "Famous Chinese Historical and Cultural Villages" since 2003, 125 traditional villages in the southernmost part of southern Hunan announced in the 1st to 5th issues of the "List of Chinese Traditional Villages" published by the Chinese government, and 60 villages mentioned in previous research papers [11][12], as a supplement. Therefore, a total of 197 traditional villages with well-preserved physical status and complete basic information that were readily identifiable were selected for the study.
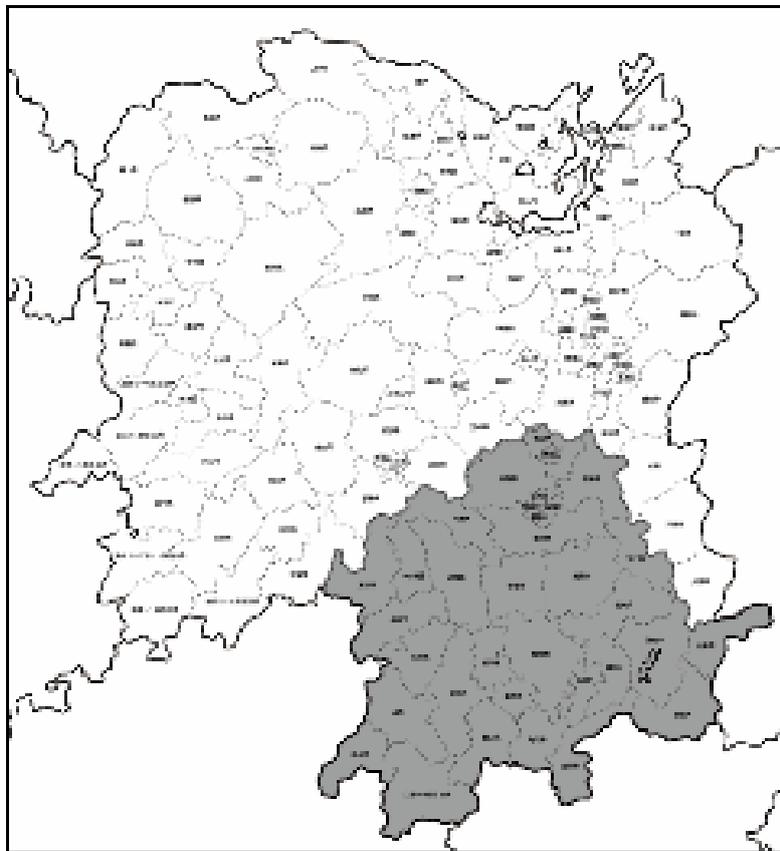

Figure 1: Southern part of Hunan Province

2.2. Extraction and Classification Process

First, information from both administrative regions was collected and integrated. The information used for the Yongzhou region was the "Yongzhou Gazetteer" [13], whereas that for the Chenzhou region was based on information recorded for Chenzhou in the county-level data [14][15][16][17][18][19][20]. All of the above were provided by the relevant Chinese government bodies. Natural landscape elements were extracted from the features exhibited by those things recorded using place names with the help of the geographical definitions. Human landscape elements were extracted from the place names with the help of folklore definitions. Other related elements were extracted from the place names with the help of the functional definitions of linguistic typology and the concept of toponymic nomenclature. Subsequently, the characteristics of 34 elements in these three categories are summarized and counted.

2.3. Correlation analysis of physical landscape elements and associated elements

Firstly, the number of co-occurrences of each element is counted and the degree of co-occurrence of each element is represented visually on a heat map. Then, by observing the degree of association between the various types of elements in the heat map, the naming preferences of the nomenclators for the natural landscape elements are summarized. Then, the naming preferences and characteristics of villagers for landscape elements are analysed in relation to specific cases in order to interpret the connotations of natural landscape in traditional village names.

3. Extraction and Classification of Elements in the Villages Name

From the perspective of place name construction, Chinese place names generally consist of "generic names" (general terms for the geographic type and nature to which they belong) and "proper names" (terms that reflect regional products, and natural and human characteristics) [21]. In other words, a place name may contain one or more elements, and these elements are related to each other. In this study, I extracted the landscape elements from the traditional village names and divided them into three categories: "natural landscape elements," "human landscape elements," and "associated elements."

3.1. Natural Landscape Elements

The category of topography can be divided into seven types: mountain, valley, flatland, lowland, river banks, slope, and tableland. Most village names are related to topography because it is one of the main references for people to form spatial concepts when planning their villages. The most frequently appearing type is mountain, with 27 cases, accounting for 13.71% of the total number of villages. The high proportion of elements in this category reflects the overall mountainous and hilly geographical features of the southern part of Hunan. The valley type has 19 cases, accounting for 9.64%. They appeared along with the Chinese characters *wan* or *chong*. This type refers to the meandering, semi-enclosed mountain spaces where the villages are located. The *wan* means valley line, such as *xi wan* 'the valley in the west.' *Chong* means ravine, which can also be understood as a small valley in Chinese. It is a dialectical word, mostly used in the names of places in Hubei and Hunan [22]. For example, lao hu *chong* is 'the village is located in a valley where tigers used to appear frequently.' These names all include elements of the valley. The flatland type accounts for 11 cases, which is 5.58%. It appears by the Chinese characters *wan* or *dong*, such as in *xiao ping*, which is 'the village is located on a small flat land.' This name emphasizes the flatness of the terrain. In the case of *tian guang dong* 'the vast flat land in front of the village is planted with fields,' *dong* represents the breadth of the terrain. Five village names include elements of lowlands, accounting for 2.54%. For example, *cheng pan ling* is 'the location where the village is located is flat like a plate and surrounded by rocky hills.' This type represents the lowland between the mountains. There are fewer cases of the remaining types: four riverbank types (2.03%), two slope types (1.02%) and one tableland type (0.51%). Although the number of occurrences of these three types is relatively small, they reflect some landscape characteristics of this area.

The category of hydrology can be divided into three types: river, pond, and water source. The river type has the highest number of occurrences in village place names: 37 cases, accounting for 18.8%. This type also has the highest proportion in the classification of natural landscape elements. They usually appeared as the Chinese characters *shui* 'water,' *xi* 'stream' and *jiang* 'river.' There are also some names that imply the element of river, such as *shan mu qiao* 'the name comes from an old bridge over the river that flows through the village.' There are 18 village names (9.14%) that include the element of a pond. Most of these elements appear with the word *tang*, which means pond. Ponds are common in villages in southern Hunan, both naturally formed ponds and artificially excavated cisterns [23]. They are a part of the traditional villages of China, and are used for drinking water, irrigation, feeding animals, washing, flood control, and firefighting [24]. Additionally, the water source type has nine cases, accounting for 4.57%. They are either groundwater sources, such as *quan kou* 'named for the gushing spring at the entrance of the village that never dries up and is clear all year round;' or artificial wells, such as *lei gong jing* which is 'according to legend, there is an immortal called Lei Gong living in this well.'

The category of natural objects refers to local forest, shrubs, trees and animals, which have the smallest proportion of the natural landscape elements category. In addition to differences in species, these elements also have characteristics in terms of spatial form. According to the case of *xing mu yuan* which is 'There was a large forest of apricots near the village'; *duo shan* which is 'flowers bloom on the hills around the village;' and *yang liu tang* 'the willow tree beside the pond in front of the village,' we can

notice a clear difference in their spatial forms.

Table 1: This caption has one line so it is centered.

Classification	Numbers	%	Types	Numbers	%
Topography	69	35.03	Mountain	27	13.71
			Valley	19	9.64
			Flatland	11	5.58
			Lowland	5	2.54
			Riverbank	4	2.03
			Slope	2	1.02
			Tableland	1	0.51
Hydrology	64	32.49	River	37	18.78
			Pond	18	9.14
			Water source	9	4.57
Natural objects	20	10.15	Forest	7	3.55
			Shrubs	4	2.03
			Trees	8	4.06
			Animals	1	0.51

3.2. Human landscape elements

The human landscape elements in village names reflect the unique cultural scenery that can be perceived in a specific space and time due to human modification and use of the natural geographical environment [25]. They can be divided into three categories: settlement, construction and production or commerce. Of all village names, 44 village names (22.34%) include the elements of settlement, 26 (13.20%) of construction, and 18 (9.14%) of production or commerce.

The category of settlement can be divided into two types: tribe and town. The largest number of village place names contain the elements of tribe type. It accounts for 40 cases (20.81%). Most of them are characterized by the construction "Family name + *jia*," such as *zhao jia wan*, which means Zhao's family lives in this valley. These landscapes are formed by the long development and gathering of local residents with the same lineage and recognition or by the migration of a large number of people to the area. Due to the long history of development, the settlement usually retains some historical buildings or specific intangible cultural properties. This type of town refers to settlements of multi-ethnic groups and clans, such as in *xiao bu* which is 'the small dock in the village,' and *dong men* which is 'the village was built at the eastern gate of the town.' There are only three cases of this type, accounting for 1.52%.

The category of construction is a building or facility that is closely associated with traditional life and beliefs. They can be divided into seven types: temples (6 cases, 3.05%), bridges (4 cases, 2.03%), fortresses (5 cases, 2.54%), roads (5 cases, 2.54%), docks (1 cases, 0.51%), irrigation facilities (1 cases, 0.51%) and other forms of construction (4 cases, 2.04%).

Table 2: The Classification of Human Landscape Elements

Classification	Numbers	%	Types	Numbers	%
Settlement	44	22.34	Tribe	41	20.81
			Town	3	1.52
Construction	26	13.20	Temples	6	3.05
			Bridges	4	2.03
			Fortress	5	2.54
			Road	5	2.54
			Dock	1	0.51
			Irrigation facility	1	0.51
			Other construction	4	2.03
Production or commerce	18	9.14	Farm	9	4.57
			Pasture	2	1.02
			Tree farm	1	0.51
			Ceramic kiln	1	0.51
			Market	5	2.54

The category of production or commerce can be divided into five types: farms, pastures, tree farms,

ceramic kilns, and markets. The farm type has nine cases, accounting for 4.57% of the total. They usually appear by the Chinese character *tian*, 'field,' such as *xiao jie tian* which is 'because the village is surrounded by mountains, the fields and streets are very tiny.' There are fewer cases of the remaining types: five market types (2.54%), two pasture types (1.02%), one ceramic kiln type (0.51%) and one tree farm type (0.51%).

3.3. "Associated elements" related to landscape elements

There are also many elements closely related to the landscape in village names, which I called associated elements. According to the functional definition of linguistic typology [26], it can be classified into descriptive (76 cases, 38.58%) and narrative cases (43 cases, 21.83%). The rest of the cases were classified into other attributes (59 cases, 29.95%).

The descriptive category refers to those names that provide subjective and objective descriptions of the landscape. It can be divided into location and appearance. The location type refers to absolute or relative position of landscape elements. There are 36 such village names, accounting for 18.27%. For example, the case as *shui dong*, which is 'because the village is on the east side of the river' shows the absolute position of the village. Another example is *jian yan tou* 'the confluence of two rivers in front of the village' shows the relative position. The appearance type refers to descriptions of the external characteristics of landscapes. This is included in 40 village names, accounting for 20.30%. Most cases describe the shape of the landscape, such as *ma hui*, which is 'the village surrounded by mountains, which are shaped like horses.' Some cases showed volume and colors of landscape, such as *da jiang he*, which is 'a large river in front of the village,' and *hei ju ling*, which 'the black rocks on the ridge next to the village.' There are also cases that describe the dynamic characteristics, such as *xia guan* 'the stream flows downward to the site of the village.'

The category of narrative refers to the time or the historical events and fairy tales associated with landscapes. They are mainly divided into two types: time order and folklore. There are only three cases (1.52%) of the time order type. They refer to the time of formation of landscapes or the time of folklore, such as *gu cheng*, which is 'the village used to be an old town during the Sui Dynasty.' The folklore type refers to the historical events and fairy tales that occurred around where the landscapes located. They are included in the names of 40 villages, accounting for 20.30%. For example, *dong jia bu* is 'an official surnamed Dong was buried here.' It expresses an historical event. Further, *xian jiang* is 'a natural stone bridge over the river in the village is said to have been set up by immortal,' which expresses fairy tale.

The category of other attributes refers to those that have no clear characteristics, and are divided into two types: family name or personal name and auspicious sign. The family name or personal name type refers to the name of a person who lived at the site where the landscape located. There are 37 village names that include them, accounting for 18.78%. For example, *luo jia* is 'The tribe of Luo's family,' and *shi quan* is 'village named after an ancestor's name.' The auspicious sign type refers to a word that is used in the name of a place to express good wishes for people. There are 22 village names include them, accounting for 11.17%. An example is *huang chang lin,* which is 'with the *Huangchang Mountain* behind the village, people hope this place will develop and prosper.'

3.4. Number of Landscape Elements and Associated Elements Appear Together

Table 3: The Cases of Landscape and Associated Elements Appear Together

	The elements of human landscape	The elements of natural landscape
Descriptive	65	14
Narrative	14	22
Other attributes	31	38

The number of times that landscape elements and associated elements appear together in a name, is 145 cases among 197 village names, accounting for 73.60%. The results show relatively frequent description and recording of landscape elements by local residents in village names. From Table 3 we can observe the regarding the category of "natural landscape elements," the order of the number of co-occurrences is: "descriptive" > "other attributes" > "narrative." "Descriptive" has the highest number of co-occurrences. The reason may be that the external features of natural landscapes are the easiest to

notice and express. For the "human landscape elements" category, the order of the co-occurring elements is: "other attributes" > "narrative" > "descriptive." The results show that local residents prefer to assign other attributes to human landscapes, and rarely use descriptive methods.

4. Associativity of physical landscape elements with associated elements

In this section, we further examine the relationship between toponymic elements by co-occurrence frequency. First, a heat map (Figure-2) of co-occurrence frequencies of "physical landscape elements" and "related elements" was made to identify the elements with strong correlation. Then, each type under the category (Figure-3) is further examined and conclusions are drawn from it.
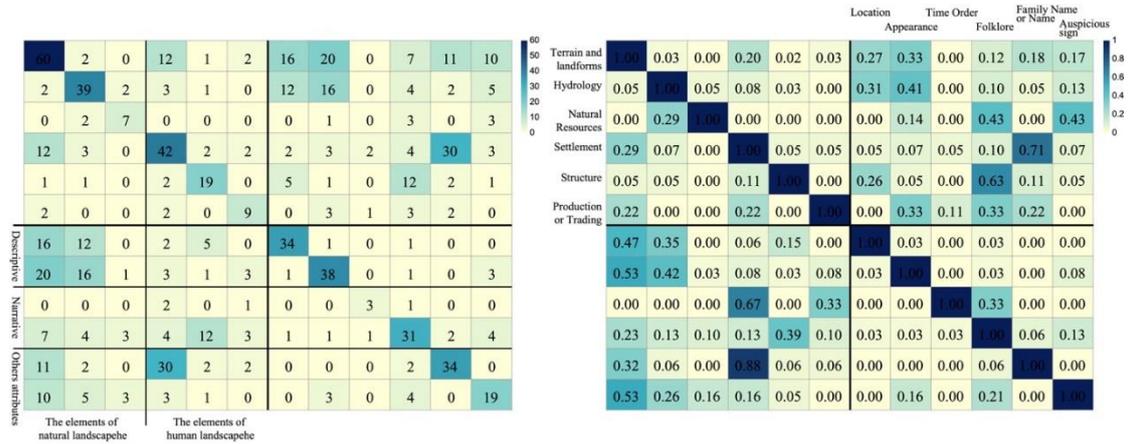

Figure 2: Heatmap of the number of co-occurrence of each category of element

Figure 3: Heatmap of the frequency of co-occurrence of each category of element

On the horizontal axis of Figure 2, the highest co-occurrence rate with the "topography" is "appearance," with 0.33. On the vertical axis of Figure 4, the highest frequency of co-occurrence with the "appearance" type is 0.8 for the "lowland." For example, *tai yang dong* (the village is surrounded by mountains on all sides and the topography of the location looks as round as the sun from afar). The results prove that the inhabitants of traditional villages in southern part of Hunan have more frequent depictions on the morphology of the lowlands where the villages are located.

The highest frequency of co-occurrence with the "hydrology" is the element of "appearance" with a frequency of 0.41. Among them, the "river" type is particularly relevant with a frequency of 0.53, such as *qing xi* (A small stream that flows from the mountains through the village has clear water). In Figure 2, we can also observe that the frequency of co-occurrence with "hydrology" is also high with "location" at 0.31. In Figure 4, the frequency of co-occurrence with "water source" is the highest, with 0.62, such as *xia yuan* (named after the source of the well in the south of the village). Combining the above two cases, it is not difficult to imagine that the inhabitants of traditional villages are more concerned about the hydrological location and water quality in the vicinity of their villages.

The elements in the category "natural resources" have a high co-occurrence frequency of 0.43 with "folklore" and "auspicious sign." Among them, the two types of "forest" and "tree" appear most frequently. This result may be related to the meaning represented by plants in traditional Chinese culture. In other words, the naming people express certain emotions or wishes through the plants in the place names.

The elements in the category "settlement" have a high co-occurrence frequency of 0.71 with "family name or personal name." The frequency of co-occurrence of " family name or personal name" and "homogeneous settlement" is 0.77. This element is mostly formed due to the long-term development of local residents of the same clan [27], as mentioned in the previous section.

The highest frequency of co-occurrence was 0.63 for the elements of the "structure" category and "folklore." This result indicates that structures in place names usually serve as carriers of historical events and folklore. The highest frequency of "military" category elements was 0.80. For example, the restoration of the source (an officer once led an army to this camp; the camp buildings were later burned down and eventually rebuilt). This element symbolizes the history of turmoil and strife in the southern part of Hunan.
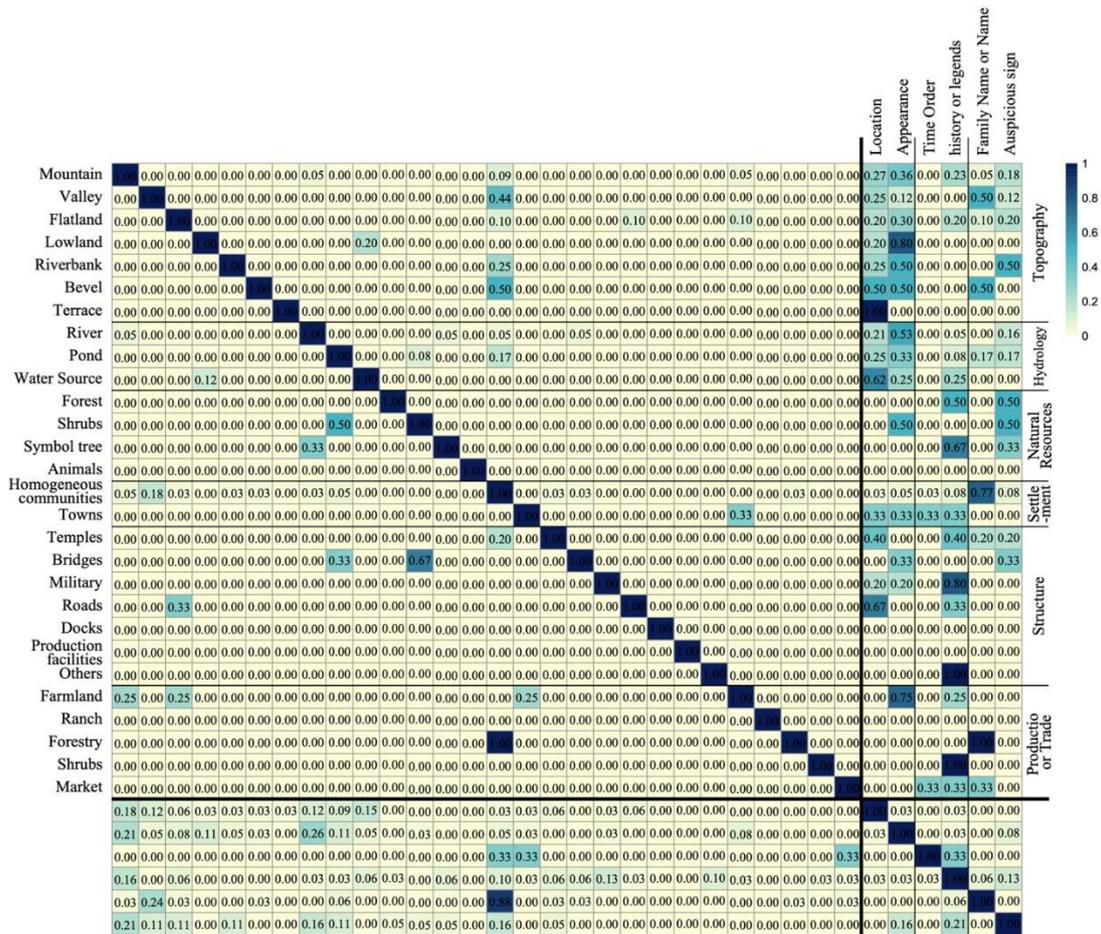
Figure 4: Heatmap of the frequency of co-occurrence of each types of element

The probability of co-occurrence of the elements in the category "production or trade" with the elements in the categories "shape" and "folklore" is high, 0.33. Among them, "shape" and "farmland" have a high co-occurrence frequency of 0.75, such as *tan tian* (named after the flat topography of this place) or *xiao jie tian* (the area is named for the fact that it is surrounded by hills and terraces on the hills, with very little land available for building houses and small streets). From the above cases, it can be seen that the inhabitants of traditional villages are very concerned about the appearance of their means of production.

In addition, there is some correlation between the subcategory's "folklore" and "farmland," and "kiln factory" and "market" type, such as *wa yao ping* (according to legend, during the Southern Song Dynasty, someone came here to set up a kiln to burn porcelain; people took this name in honor of them). This result probably stems from the fact that in relatively closed agricultural societies, people were happy to record what they saw and heard while producing and trading.

5. Conclusion

In this study, I extracted landscape elements from traditional village names and divided them into three categories: natural landscape elements, human landscape elements and associated elements. The characteristics of each subcategory, such as mountain, valley, flatland, lowland, riverbank, slope, tableland, river, pond, water source, which total to 34 types of elements, were summarized. By counting the number of times that landscape elements and associated elements appear together in a place name, the results show that traditional village residents have more descriptive and less narrative expressions of natural landscapes and are more willing to assign some other attributes to human landscapes. From the subsequent interpretation of the case, we can also find that the inhabitants frequently recorded the location of water sources near their villages in the village place names and described the shape of the lowlands and rivers on which the villages were located. It shows the high demand of the traditional inhabitants for the environmental elements of their existence. Secondly, the correlation between plants

and auspicious elements is high, a result that may be related to the meaning represented by plants in traditional Chinese culture, possibly because the namesake expresses a certain emotion or desire through the plants in the place name. The more obvious association of elements in the "settlement" category with "surname or personal name" is due to the long-term development of local inhabitants of the same clan in this area. The correlation between the 'structure' category and the 'folklore' category suggests that some of the village structures can be vehicles for historical events and folklore. The above conclusions point to an inference that in the planning of traditional villages, the characteristics of the village names can be used to understand the meanings that some landscape elements near villages hold for the local residents. This point underscores the importance of continuing research to be examined in landscape elements and their naming traditions. However, this work was not without its limitations. The sample size of the village names was not large enough to show a clear preference for naming some landscape elements. Additionally, the study used a literature survey that did not verify these elements of the landscape that exist or have existed. The conclusions would therefore have been more convincing if combined with field study. Nevertheless, I hope that the results of this research make an important contribution to the fields of traditional village conservation and rural planning.

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