
RESEARCH ARTICLE

Exploration of the Formation and Cultural Essence of Qiang Ethnic Architectural Features from the Perspective of Cultural Geography: A Case Study of the Qiang Villages in the Lower Reaches of Zagunao River

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ABSTRACT

This study aims to explore the influence of geographical environment on cultural formation from the perspective of cultural geography theory, and to explore the impact of geographical environment and culture generated by geographical environment on architecture. This will help to understand the process and characteristics of Qiang architectural formation in western China, as well as its cultural connotations. The study reveals the uniqueness of Qiang architecture formed under complex social historical backgrounds such as ethnic migration, natural topography, and climatic conditions, and the social customs, beliefs, and cultural connotations reflected in Qiang architecture. This study explores the factors affecting the formation of Qiang architectural characteristics from the aspects of ethnic migration, ecological and geographical environment, changes in agricultural types, integration of Han, Tibetan cultures, and Qiang culture, and explores the historical evolution, rich ethnic beliefs, and cultural connotations of Qiang from the perspectives of building materials, spatial design, and decorative art. The research results are of great significance for understanding the inheritance and development of Qiang culture in modern contexts, protecting the "original flavor" of architectural forms and patterns, villagers' lifestyles, natural environment, and humanistic environment.

KEYWORDS

Geographical environment, Qiang culture Formation, Ethnic Migration

ARTICLE INFORMATION

ACCEPTED: 01 March 2025

PUBLISHED: 22 March 2025

DOI: 10.32996/ijcrs.2025.5.1.4

1. Introduction

The five thousand years of Chinese civilization and excellent multi-ethnic culture have left us tangible cultural relics and natural heritage that are as vast as smoke. In the high mountains and canyons of western China, as one of the oldest ethnic groups in China, the Qiang people have rich historical and cultural traditions, leaving a wealth of diverse natural and cultural heritage. The formation and characteristics of Qiang architecture - Qiangzhai, is a unique presentation of the Qiang people's culture and residence, reflecting a profound understanding and adaptation to the natural environment. Among them, Qiang architecture, as an important part of material culture, not only carries life functions, but also embodies the inheritance of national culture and regional spirit. However, with the intensification of economic globalization and cultural homogenization trends, as well as the impact of natural disasters and urbanization processes, these precious traditional buildings are facing unprecedented challenges. Therefore, this study intends to explore and analyze the lifestyle of Qiang villagers from the perspective of literary geography, the influence of the natural environment and human environment on the formation of architectural characteristics, and the cultural significance and connotation carried by architecture, in order to provide theoretical basis and practical guidance for the inheritance and development of Qiang culture under modern context, and the protection and planning of Qiangzhai. Cultural geography, as

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an interdisciplinary field, emphasizes the importance of space, place and environment in cultural production. The theory focuses on the interaction between culture and geographical space, revealing how to construct cultural identity and meaning through the depiction and understanding of specific places. In the field of architectural culture research, the application of literary geography helps to interpret the deep connection between architecture and its surrounding environment, including how natural landscapes, climatic conditions, social customs and belief systems jointly shape architectural characteristics and cultural connotations. This study will adopt a comprehensive analysis method. Firstly, through a literature review, the existing research results on the architectural characteristics of the Qiang nationality are collected and sorted out. Secondly, combined with field investigation, some representative Qiangzhais are visited in person to record and analyze the style, structure, and materials used in the buildings. In addition, in-depth interviews with local residents and craftsmen are conducted to understand the cultural stories and lifestyles behind the buildings. Finally, with the help of photography and drawing techniques, detailed records of architectural details are made, and the exploration results are presented in the form of case studies. The focus of the analysis is: 1) To explore the impact of ethnic migration, changes in ecology and geographical environment, changes in agricultural types, and the integration of Han and Tibetan cultures, Qiang culture on the formation of Qiang architecture and Qiang villages. 2) By examining architectural forms and patterns, villagers' lifestyles, natural environment, and cultural environment, uncover the cultural connotations contained within the residential buildings of Qiang villages. Through the above research, this paper aims to reveal the inherent connection between the reasons for the formation of Qiang architectural characteristics and culture, providing a new perspective for understanding the regional cultural diversity of multi-ethnic countries. At the same time, it offers references and insights for the protection and sustainable development strategies of cultural heritage in Qiang and other minority ethnic areas.

2. Literature Review

This paper sorts out the literature by extensively collecting and reviewing scholarly articles, books and other sources related to the research area, and critically thinking to obtain existing knowledge and theoretical basis on Qiang architectural and cultural studies. The "Introduction to Cultural Geography" written by Mr. Wang Enyong mentions the cultural soil of generation and the influence of geographical environment on cultural generation. Starting from this, we study the impact of the geographical environment and culture generated by it on architecture from a new perspective. We apply the basic theory in cultural geography—the contradiction between culture and nature is the fundamental driving force of human evolution. Natural conditions are closely related to material culture, and through material culture, they connect with behavioral culture and spiritual culture. We use "Introduction to Cultural Geography" as an example to illustrate the decisive role of cultural and geographical environments on Qiang architectural styles, reproducing the development and evolution process of Qiang architecture. By studying the mutual exchange and convergence of cultural groups in various regions over time—we investigate the changes in nature, ecology, religion, agricultural types, politics, folk culture, etc., before and after the migration of the Qiang people and their impact on Qiang architecture. The layout and roads of the Qiangzhai have a distinct defensive nature, as well as strong cohesion. Xie Hongrong pointed out in his paper "Analysis of the Defensive System of Ancient Qiangzhai in the Upper Minjiang River, 2018" that the history of the Qiang people is a bloody history of ethnic migration and struggle. The long-term wandering and nomadic life, as well as wars between ethnic groups and tribes, have fostered a strong defensive consciousness among the Qiang people. This war defense consciousness is concentratedly reflected in the living environment of the Qiang people, permeating every aspect of the ancient Qiangzhai landscape. In order to defend against foreign enemies, the Qiang people cleverly utilized the advantages of the natural environment, constructed a rock-solid fortress defense system for the ancient Qiangzhai buildings, and developed a comprehensive three-dimensional transportation defense network, ultimately forming a unique and complete village defense system for the Qiang people. The natural beauty of Qiang architecture is characterized by towering watchtowers and orderly villages. The most distinctive feature of Qiang architecture lies in its building materials, with stone structures built along steep mountain slopes. Under primitive technological conditions, the Qiang people utilized natural materials such as wood, stone, and mud for the construction of their villages. As mentioned in Liu Yazhi's "Materials - Nature's Gift - On the Use of Natural Materials in Qiang Architecture, 2018), the natural environment of the Qiang region provides a wealth of natural building materials. Walls are constructed from irregular stones and mud, forming robust and thick components with a majestic structural style that harmonizes with the surrounding environment. Watchtowers built against the mountains use native rock for the back walls on one or two levels, while the remaining walls or partitions around them are all made from stone slabs. From bottom to top, the walls narrow. This results in an overall shape that is larger at the bottom and smaller at the top, creating a stable appearance similar to a trapezoid. The style and decorative arts of architecture reflect the ethnic characteristics of the inhabitants, reflecting the social customs, beliefs, and cultural connotations of that ethnic group. Gao Wu pointed out in his article "The Divine Beliefs of the Qiang People and Community Life in Qiang Villages - A Case Study of Xiuxi Village, 2014" that there is a very close relationship between the divine beliefs and worship of Xiuxi Village and the community life of the village. The collective worship of deities has formed unique cultural symbols for the village, which are used to design the residences, creating a logically ordered and harmonious spatial arrangement in the Qiang villages. The Qiangzhai watchtower, as a national intangible cultural heritage, is the "living fossil" of the evolution of the Qiang ethnic residential architecture. It is a building with extremely high regional and ethnic characteristics, possessing immense research

and conservation value. In his paper titled "Research on the Conservation Value and Strategy of 'Double Gene' Cultural Heritage in Qiangzhai - A Case Study of Kuapo Village, Longxi Township, Wenchuan County, Sichuan Province, 2022", Wang Xi mentioned that the Qiang villages are crystallizations of the wisdom of the Qiang people in both spatial genes and cultural genes, serving as effective carriers of the historical and cultural heritage of the Qiang ethnicity. The protection of the "authentic" rural landscape appearance of Qiangzhai is crucial because a large number of ordinary Qiang villages have extremely high cultural, ecological, aesthetic, and technological values. He proposed sustainable development strategies for the overallness, balance, dynamism, and systematic nature of ordinary Qiang villages. After reviewing the literature, we contemplated that as time passes, today's watchtowers have lost their defensive purpose. However, they still stand majestically, robustly, and with sharp edges. Despite numerous earthquakes, they remain unscathed and have become symbols of the Qiang culture, generating a profound sense of ethnic cohesion. We may already have answers on how to protect the cultural heritage, lifestyles, and original architectural forms of minority ethnic groups.

3. Methodology

This study aims to explore the factors affecting Qiang architecture based on the theoretical foundation of cultural geography, combined with Mr. Wang Enyong's Introduction to Cultural Geography. In order to ensure the rigor and depth of the research, we will use methods such as literature review, field investigation and on-site inspection for comprehensive analysis, and present the analysis results in the form of case studies.

3.1 Theoretical Framework

In this study, human geography theory plays a vital role in providing us with a framework for understanding and analyzing the interaction between ethnic minority village architecture and geographical environment. Human geography, as an important branch of geography, focuses on studying human society, culture, politics, economy and the relationship between these aspects and the geographical environment. In particular, it helps us reveal how humans interact with their geographical environment and how they form and develop their own culture by studying the spatial distribution patterns and processes of human activities.

According to Puttison (1990), the four great traditions of geography-spatial analysis, natural and human phenomena, regional studies, and human-environment relations and earth sciences-provide a comprehensive analytical framework. These traditions provide us with a set of tools and methods for studying cultural geography, including in-depth study of specific regions or cultural groups, as well as how geographical factors influence the formation and development of culture. Mr. Wang Enyong's concept of "cultural soil" in Introduction to Cultural Geography further strengthened our understanding of the influence of geographical environment on cultural formation. This concept emphasized the fundamental role of geographical conditions in shaping cultural characteristics, and pointed out how cultural environment and geographical environment jointly determine the form and appearance of buildings.

In this study, we apply these theories to the analysis of ethnic minority village architecture. Through fieldwork, in-depth interviews and literature analysis, data were collected on the relationship between architecture and the geographical environment. The spatial analysis conducted with GIS technology allowed us to identify and interpret more accurately how geographical conditions affect cultural development, and how culture in turn shapes architectural features.

Thus, human geography theories not only provide us with a theoretical framework to guide the research but also help us interpret the findings, demonstrating how the interaction between geographical environment and culture jointly shapes the architectural landscape of ethnic minority villages. The application of these theories enables us to understand more deeply that architecture is not only a form of cultural expression but also a product of geographical influence. Through this logical relationship, our study reveals the complex interactions and interdependencies among architecture, culture, and geographical environment.

3.2 Field Investigation

Fieldwork is an important part of this study, where the author conducts field research in the two most representative ancient Qiang villages, Laomuka and Taoping Qiang villages in the lower reaches of Zagunao River Basin. The geographical environment, architectural styles, structures, and materials used in these buildings were recorded and analyzed, which directly contacts the cultural background of Qiang architecture. This step will include participant observation to understand the social dynamics and cultural practices surrounding the buildings.

Geographic environment data:

Fieldwork	regions along the lower reaches of the Zagunao River
located	102°50'E to 104°10'E and 30°15'N to 32°15'N
geographical environment	Surrounding by the continuous mountains mostly above 2500--4000 meters, a typical enclosed mid-to-high mountain canyon region
climate	The average annual temperature is 11.5°C, and the annual rainfall is approximately 500 millimeters.
Water source	the Zagunao River and some small and medium-sized streams to ensure sufficient water for production and living needs



Table 1: Location Map of the Main Qiang and Tibetan Settlements in the Lower Reaches of the Zagunao River

The Relationship Between Villages and Water Source



Table 2 : The general layout of the water system of Loumuka Village



Table3: The source of water in Loumuka village



Table4: The Zagunao river flowing through the Qiang villages

Architectural features data

Item	Description	size
Materials	This area is rich in various types of rocks and highly adhesive soils due to the geographical environment	gneiss or green schist
Structures	The villages built here are made of wood and stone structures	Almost 3 floors
Wall thickness	The thickness of the wall is thicker at the bottom and gradually thins upward.	50-80 cm at the base/40 cm at the top
Windows	The windows are designed to be quite small.	Approximately 35*35 cm

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Wall holes	There are many regularly arranged holes on the mountain walls located at the ground level of each floor.	a spacing of 60 to 80 centimeters
Two watchtowers	They are 7 and 9 floors with a base length of about 5 meters and are over 20 meters high. The diameter of the bottom layer is generally 5m-6m, the thickness of the bottom wall is 1.5m-2m, and the thickness of the top wall is 0.6-0.8m.	Dedicated by five white stone and a fire poles to release smoke signals on the roof



Table5: The base of the stone wall is 50-80cm thick, gradually narrowing upwards, with a thickness of about 40cm at the top. Photographed by the author



Table 6: A small window of approximately 35*35 cm. Surveyed by the author

There are many regularly arranged holes on the mountain walls of the Qiang ethnic residences, located at the ground level of each floor, arranged in a row, with a spacing of 60 to 80 centimeters. (As shown in the photographs taken by the author .



Table7: The Qiang Residence in Laomuqia Qiang Village, Lixian County, Sichuan



Table 8: The Holes Of Residence Wall in Taoping Qiang Village, Lixian County, Sichuan

The two watchtowers in Taoping village are made of stone, each with 7 and 9 floors respectively. They have a base length of about 5 meters and are over 20 meters high. The diameter of the bottom layer is generally 5m-6m, the thickness of the bottom wall is 1.5m-2m, and the thickness of the top wall is 0.6-0.8m. The top of the watchtower is dedicated to five white stone gods, in addition, there are horizontally embedded stone rings on the roof, used for inserting fir poles to release smoke signals. There is a single or double-storey overhanging platform for observation and lookout purposes.



Table9: The one of watchtower is 19.6 meters high, with 7 floors. Photographed by the author



Table10: A small lookout of approximately 40*40 cm, Surveyed by the author

Settlement layouts

we found that The Qiang village has less available lands and construction lands. In terms of the use of settlements and architectural space, the Qiang village has a higher building density. The roads of the village are crisscrossed, with many intersections where only one person can pass at a time.

The settlements are very compactly arranged, with the choice of locations for the villages often on steep terrain at the foothills or along river valleys or high up in the mountains. This is done to occupy advantageous terrain, or to use the river as a natural barrier, defending the village from it or building watchtowers from a commanding height.

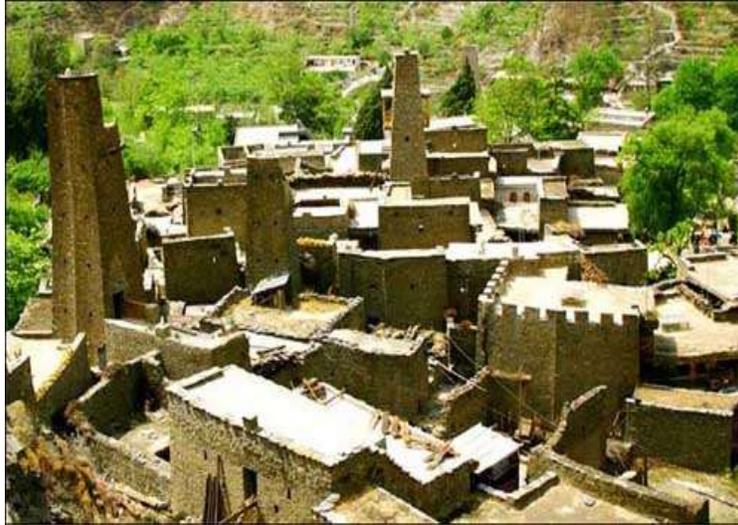


Table11: higher building density of the Taoping Qiang village
 Photographed by the author



Table12: Taoping Qiang village watchtower
 Photographed by the author

The Taoping Qiang village consists of residential buildings, public structures, religious buildings, and infrastructure. Currently, among the public structures, the military official's office has ceased to exist due to historical changes and warfare; in terms of religious architecture, temples have been destroyed leaving only remnants and broken walls, while there are altars on the mountain for sacrifices and caves made of wood and stone for ritual purposes; there are 68 households in residence, and the infrastructure includes a water diversion canal, but there is no hydro-power mill.



Table13: The fork in the road is narrow.Surveyed by the author



Table 14: General Plan of the Laomuka Village Traffic System
Drawn by the Author



Table15: The narrow main roads between houses



Table16: Bridge connecting outside the village



Table17: Residential Entrance Under the Main Street



Table18: Medical Relief Center at the Foot of the Mountain

3.3 Interview with Residents

In addition, the in-depth interviews were conducted with Long Xiaojiong who is the owner of the Taoping Qiang watchtower and the granddaughter of the former king of the Qiang, the local residents, and the craftsmen have built the Qiang house to understand the cultural stories and lifestyles behind the architecture.

During the research in the owner's house of the watchtower, I asked why there are five large white stones on the top of your watchtower? Why are there so many wall holes of 60 cm-80 cm on the outer wall of your watchtower? Are they defects in construction? Lady Longxiaojiong said, "White stone is our worship, we believe that the white head is placed in the highest place, just like the gods watching us and protecting us in the sky. When we build houses, each family will place pure white stones and pray devoutly, this is our belief and must not be profaned.", "To the wall holes, The Qiang people are very united. In ancient times, when they migrated from the northwest to the high mountain valleys of the upper Minjiang River, they would leave holes in the mountain walls of their houses for later migrants to add new rooms. During the addition, wooden beams were directly inserted into the pre-existing holes, which saved on constructing an additional wall. Moreover, after the dwellings were connected, the overall integrity was improved and the structure became more robust."

When we conducted research in Taoping, we asked why the roads within the village were as complex and confusing as a spider's web, with narrow paths that easily lead to getting lost. The local people said, "This is to arrange as few people as possible to block the road with stones and other obstacles in case of war."

As asking a craftsman, how to select the stone for building houses? Why dig a square pit in the living room, and what is the purpose of the pit? The craftsman said, "The stones of the wall are gneiss or green schist mixed with local yellow mud and will not weather. The ancestors of the Qiang people were nomadic in the northwest, and from the dwellings of the Mongolian nomads, we can see that there is a fire pit in the center of the Mongolian yurt, and there is also a felt made of sheep skin on the roof to cover the skylight. We have inherited this tradition, except that the building has become a wooden-stone structure, but the fire pit is still the activity center of the main living space."

3.4 Data Analysis

Through the analysis of the above data, we can find out the relationship between the site selection of the Qiang ethnic group and the natural geographical environment. We can also know that the layout and design of Qiang architecture are closely related to its geographical environment, such as thick walls and small windows of buildings, village layout, and adaptation to climate.

Through field research, the distribution of house construction is all for residential purposes, and it also reflects the transition from nomadic to agricultural production. The social functions of village architecture have been understood. In the culture of the Qiang people, Qiang architecture is not only a living space, but also has social and religious functions, such as sacrificial activities and community gatherings. From the polygonal shape of the watchtower, the worship of white stones and the culture of fire pits, we can analyze that the characteristics and humanistic environment of Qiangzhai are influenced by the multi-ethnic cultures around it, especially the integration of Han and Tibetan cultures, which is reflected in the architectural decoration art and religious beliefs. By articulating this methodology, the paper will demonstrate the logical coherence and academic rigor of the research methods employed, ensuring the reliability and validity of the study's outcomes.

4. Results and Discussion

The Formation and Cultural Essence of Qiang Architecture Features

4.1 The Impact of the Qiang People's Migration Process

The Qiang people are descendants of the Di ethnic group, who originally resided in the northwest and gathered in the forested areas of Tianshui and Longxi Mountains in Gansu. The Tang poem can be seen as an example that the Qiang flute relates to the Yu Menguan to illustrate that the Qiang people were still nomadic tribes living in the northwest region during the Tang Dynasty. At the end of the Qin Dynasty and the beginning of the Han Dynasty, under the military pressure, some Qiang people migrated to the upper reaches of the Min River to cultivate land and engage in agriculture, which gradually transit from nomadic to sedentary life. The migration process was gradual because a portion of a tribe first chose a settlement on the Min River, followed by the rest of the tribe gradually migrating to the new settlement. The majority of the Qiang nomadic tribes entered the high mountain valley area of western Sichuan through the Western Sichuan Corridor. Since most Qiang people are still nomadic, for them, the dry and

hot valley is not an ideal place. The forest pastures on the high semi-mountain are the most ideal places for developing agriculture and animal husbandry. Therefore, for newly migrated herders, they initially choose to live on the terraces or alpine pastures of the high semi-mountain, so as to develop animal husbandry and continue their agricultural production.



Table19: The Qiang Residence in Laomuqia Qiang Village, Lixian County, Sichuan

However, with the increase in the number of migrating Qiang people and the development of agricultural production, there are fewer alpine pastures in the high mountain valley areas of western Sichuan, which cannot accommodate more Qiang immigrants. On the other hand, the Qiang herders on the alpine pastures still continue their nomadic lifestyle, spending winters in the valley areas and moving to the forest pastures on the high semi-mountain slopes in summer. Therefore, when the alpine pastures can no longer accommodate a large number of immigrants, they gradually migrate to lower altitude areas. The immigrants gradually settle on the lower altitude semi-mountain pastures, and after population growth, they choose the semi-mountain terraces, eventually developing agricultural production in the valley areas. Their agricultural production methods vary: alpine pastures are purely pastoral, while both semi-mountain and high semi-mountain areas are semi-agricultural and semi-pastoral, and most of the valley areas are settled agriculture with only a few livestock farming.

This process aligns with Professor Wang Enyong's theory of ethnic migration. The migrant population often settles in one place upon arrival. In rural areas, they tend to form ethnic islands, while in cities, they form ethnic neighborhoods. If the influx of migrants continues, it will spread from the ethnic island to its surroundings, forming more ethnic islands, and even transforming into ethnic provinces. In cities, ethnic neighborhoods continue to expand, occupying larger spaces. [Wang Enyong, Introduction to Cultural Geography, Chapter 2, Section 2: Population Change and Migration]

In ancient times, the upper reaches of the Minjiang River were dense primeval forests. In order to prevent attacks from wild beasts and conflicts with local people, the Qiang ethnic group that first migrated there was very united and had a strong centripetal force. They established entire villages based on bloodline clans, with residential areas within the villages arranged very compactly. The village sites were all located on steep slopes in the mountainsides or by riversides or high up on the mountains, aiming to occupy advantageous terrain, or using the river as a natural barrier, defending the village by the river or building watchtowers from a commanding height. The entire village road network was as complex and confusing as a spider's web, but their own people could easily find shortcuts. Therefore, even if outsiders broke into the village, they would inevitably get lost. Moreover, the roads within the village crisscrossed each other, and many intersections could only accommodate one person at a time (as shown in the middle right image). When we conducted research in Taoping Qiang Village in Lixian County, the local people said this was done so that as few people as possible could block the roads with obstacles such as stones during wartime, which truly achieved the effect of holding the pass as attacked.

Theoretically, the layout and roads of Qiangzhai not only have the obvious exclusivity but also strong cohesion. During our research in Taoping Qiangzhai and Laomuqia Qiangzhai, we found that there are many regularly arranged holes on the mountain walls of the Qiang ethnic residences, located at the ground level of each floor, arranged in a row, with a spacing of 60 to 80 centimeters (as shown in the bottom right picture). When we asked locals about it, they explained: "The Qiang people are very united. When they migrated from the northwest to the high mountain valleys of the upper Min River in ancient times, they would leave holes in the mountain walls of their houses for later migrants to add new rooms. During the addition, wooden beams were directly inserted into the pre-existing holes, thus saving one wall. Moreover, after the dwellings were connected, the overall coherence was better and the structure was more robust." From this, we can see that during the migration process of the Qiang people, from their previous nomadic tribes in the northwest to West Sichuan, a new culture and customs developed due to cultural identification with their own ethnicity and the influence of local natural conditions. This formed a strong exclusivity and cohesion

within their ethnic group, leading to a new architectural style and culture. Ultimately, it can be said that this is a process of conflict and evolution between natural conditions and culture.

4.2 The Impact of Ecological and Geographic Environmental Changes

The ancient Qiang people were nomadic agricultural and pastoral tribes distributed in various parts of the northwest. They led a wandering life, living wherever water and grasslands could be found, primarily engaging in animal husbandry. Their dwellings were tents, and their ecological environment was mainly composed of grasslands and alpine meadows. The plains received less than 160 millimeters of precipitation. When the Qiang people migrated to the west of Sichuan, their natural environment changed from the temperate continental climate of the arid plains in the hinterland of Eurasia to the subtropical climate of the high mountain dry river valley area in the west of Sichuan. The terrain conditions shifted from plains to slopes, with longer sunshine duration and an increase in precipitation between 400 millimeters and 1300 millimeters. Such geographical and climatic changes inevitably had a profound impact on the architecture of the Qiang people. The evolution of Qiangzhaifrom tents during their nomadic period in the northwest to the present-day stone-built multistory residential buildings must have left traces of its evolutionary process.

4.2.1 The Zhong Zhu Culture and Belief

Zhong Zhu like as central pillar is a supporting column in the Qiang ethnic dwellings' hall or Guozhuang houses. It is a relic of the central pillars used by the Qiang people during their nomadic life in the northwest, serving as the main support in buildings. Specifically, it supports the intersecting beams within the "Land" shaped plan of the room. The Qiang people not only inherited this nomadic tent's central pillar but also elevated it to a religious status as a central pillar deity, regarded as the "Powerful Emperor". Not only is it considered taboo to touch, but it is also worshipped during festivals, in addition to believed to be offended by Zhong Zhu God if someone falls ill.

4.2.2 Fire Pond and Skylight

Before the Qiang people migrated to Western Sichuan, they were nomads in the northwest. From the dwellings of the Mongolian nomads, we can see that there is a fire pit in the center of the Mongolian yurt, and there is also felt made of sheep skin on the roof to cover the skylight. The Qiang people's dwellings have inherited this tradition, except that the buildings have become wooden and stone structures. However, the fire pit remains the activity center of their main living space. The hall is surrounded by closed walls, with only one or two narrow windows, creating a mysterious sense of deep darkness. However, a ray of sunlight shines through the skylight above the fire pit, and as time passes, the light slowly moves, making people feel relaxed and intimate. The Qiang people not only inherited this tradition but also elevated their reverence for fire to a religious level, setting up an iron ring on the fire pit as the altar for the god of fire. In addition to the architectural traditions inherited from their ancestral nomadic tribes, the Qiang people had to change their building practices in the high mountain canyon areas of Western Sichuan due to new natural geographical conditions after migrating there. The Layout of Qiang Residences in Laomuqia Qiang Village, Lixian County, Sichuan, Combined with Mountainous Environment The new geographical environment determines the development of a new architectural culture.

4.2.3 The Impact of Topography and Landform



Table20: The Layout of Qiang Residences Combined with Mountainous Environment in Laomuqia Qiang Village, Lixian County, Sichuan, China

Due to the transition from nomadic life in the grasslands of the northwest to a semi-agricultural, semi-pastoral lifestyle on the slopes of mountain canyons, this new topographic environment lacks arable land. In order to conserve river bay beaches for farming, and also for defensive considerations, the Qiang people chose to build their homes on the slopes. This not only saved arable land but also allowed the architectural form to blend with the natural environment, adapting to the terrain in a very flexible manner, achieving an "organic" integration with the natural environment.

4.2.4 The Influence of Hydrological Conditions

The Qiang people, who live in the northwest grasslands following the water and grass, are destined to pay attention to water and grass when they arrive in new environments, as this is crucial for their livestock. However, the water flows in the Xi Chuan canyon are very turbulent, with occasional mudslides caused by gullies or the impact of floods. Therefore, when choosing a location for their settlements, the Qiang people avoid large gullies and rivers, opting instead for settlements next to small streams. At the same time, to facilitate water collection, they have constructed complex internal water systems within their settlements, allowing each household to draw water near their homes for washing clothes and cooking. The internal water system of Taoping Qiang Settlement in Li County is an excellent example. In addition, the Qiang people of Taoping Settlement have also developed hydro-powered mills, as shown in the above picture. The Jiarong Tibetans of Shangmeng Settlement have even built a prayer wheel that rotates using hydropower.



Table 21: Yu Family Mill House in Sanzhu Mo Village, Longxi Township
Drew by Professor Ji Fuzheng, from Chinese Qiang Ethnic Architecture,p135

4.2.5 Residential Buildings Affected by Climate and Local Materials

The Minjiang River Valley belongs to the subtropical arid valley climate, influenced by the alpine climate. The temperature difference between day and night is significant, with noticeable vertical temperature variations. The four seasons are distinctly pronounced, featuring long and cold winters. Coupled with the local geographical environment, various types of rocks and highly clayey soil are abundantly produced. Therefore, to insulate, stone walls approximately 50 cm thick have been formed. Windows are kept small for two reasons: to reduce heat loss and due to the influence of using local materials—wood-stone structures—for housing construction. Only wood is used for short-span window beams to support the load of the large stone walls above. Additionally, the functional arrangement of the houses is tailored to the climatic characteristics. The ground floor serves as a storage room for miscellaneous items and other secondary rooms to shield against dampness and coldness. The top floor functions as a granary that allows ventilation and dissipation of heat, as well as drying grains. The most comfortable middle floor is reserved for human habitation.

4.3 The Impact of Agricultural Type Changes

According to the classification by Mr. Wang Enyong in "Introduction to Cultural Geography", the ancestors of the Qiang people were nomadic in the northwest, "This mode of production is suitable for arid climate areas where it is difficult to carry out settled agriculture... Historically, nomadism was considered as a stage in agricultural development. It is more advanced than the hunting and gathering stage, but less developed than settled agriculture. Now it is believed that nomadism is a branch of settled agriculture, not its precursor. It is a way of farming where farmers graze livestock to adapt to drought-prone areas with insufficient precipitation... Although herders obtain most of their necessities from grazing livestock, they must trade with agricultural

communities for essentials such as food and clothing. Historically, due to their strong mobility, nomadic tribes often invaded agricultural regions." [Wang Enyong, Introduction to Cultural Geography, Chapter 3 Agriculture, Section 1 Agricultural Types and Their Distribution] After migrating to the Minjiang River Valley, the Qiang people, who are situated in a high mountain canyon area covered with primeval forests, must have abandoned their original grassland nomadic agricultural model and possibly first adopted the shifting cultivation model. "Shifting cultivation is an ancient and relatively primitive method of agricultural production. This farming method does not have fixed farmlands. Farmers first cut down all the trees on the ground, sometimes first cutting off a circle of bark from some large trees to let them die, and then cut them down. The dead or wind-dried trees are burned by fire, and farmers clear a piece of land in the forest, using digging sticks or hoes to dig small pits, put in a few seeds, cover them with soil, and obtain grain through natural fertility. When the fertility of this piece of land decreases, they give it up and develop another one, hence the name 'shifting cultivation'." [Wang Enyong, Introduction to Cultural Geography, Chapter 3 Agriculture] After implementing the migration agriculture, a large area of cultivated land was obtained, followed by the adoption of sedentary agriculture - grain livestock farming. Grain livestock farming is an agricultural type that combines dryland cereal cultivation with livestock breeding. This is also the agricultural model adopted by some Qiang people in the northwest in ancient times and is a branch of nomadic pastoralism. From the inheritance and changes of this agricultural model, we can see its impact on architecture.

4.3.1 The Impact of Nomadic Agriculture Transitioning to Settled Agriculture on Architecture

The nomadic life on the northwest grasslands requires the ability to quickly and conveniently move from areas where water and grass are scarce to areas where they are abundant after they have been consumed. Therefore, tents have become the most suitable and environmentally adaptive dwelling for local residents.

When migrating to the new geographical environment in the upper reaches of the Minjiang River, a hybrid was developed after inheriting the yurt dwellings and being influenced by the Han people's cave dwellings and the Central Plains' dry-rack houses. [Ji Fuzheng, Chinese Qiang Ethnic Group Architecture & Qiang Ethnic Group Architecture History, Page 51] As shown in the right figure, some of its buildings (mainly watchtowers) still retain the influence of nomadic agriculture, with walls curved like yurts. The advantage of this is that it increases the stiffness of the building and enhances its seismic resistance without changing the indoor area. In the high seismic activity area where the Qiang ethnic group is located, this is considered an excellent design that successfully inherits traditional customs.

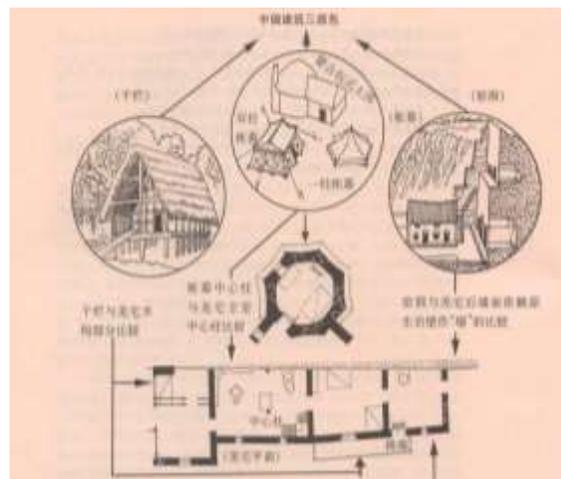


Table 22: The Impact of Agricultural Pattern Changes on the Qiang Ethnic Group's Architecture. Ji Fuzheng, Chinese Qiang Ethnic Group Architecture.p64

4.3.2 The Impact of Livestock Management Methods on Architecture

Unlike the extensive grazing of livestock on the northwestern grasslands, in the steep terrains of the Xi Chuan River Valley, it is only possible to adopt penned livestock methods. This results in architectural changes. In the northwestern grasslands, the Qiang people simply enclosed a livestock pen with railings, but after reaching the upper reaches of the Min River, they integrated the livestock pen into the architecture—due to the dark and damp conditions at the base of the building, and the transition between space and slope, it was not convenient to use, so it was used as a livestock pen. Moreover, extensive grazing of livestock on the grasslands does not require preparing feed for the animals, but penned livestock must consider this issue. Another impact on

architecture is the establishment of a kitchen specifically for cooking animal feed; this livestock kitchen is set up separately from the human kitchen. The livestock kitchens are all located on the ground floor, while human kitchens are on the second floor of three-story residential buildings. However, based on architectural surveys and research results from Shangmengzhai and Qiaoqi Jialong Tibetan Townships, the Qiang people and some Jialong Tibetans have not abandoned traditional free-range livestock management methods. Instead, they adopt a combination of free-range and penned methods, keeping large livestock that cannot fit in pens on distant high mountains, while keeping smaller livestock such as pigs, sheep, and chickens in pens. However, there are also a small number of cattle and horses, provided that the livestock pens in the residences can accommodate them.

4.4 The Impact of the Integration of Han, Tibetan, and Qiang Cultures on Qiang Architecture

Ethnic groups cannot be completely isolated from the world, and for the vast majority of nations in the world, there is always mutual contact and influence. In the process of mutual contact, there is both mutual exclusion and integration and absorption, forming a new culture that is different from the original one. This process is known as cultural integration. When different cultures come into contact, often the more powerful culture has an advantage, while the weaker culture undergoes certain changes, sometimes significant changes, or even fundamental changes. In the new culture that emerges from this contact, the powerful culture plays a crucial role, while the weaker culture often remains passive." [Wang Enyong, "Introduction to Cultural Geography", Chapter 8, Section 4: The Role of Cultural Integration] Based on Mr. Wang Enyong's theory, we can also find excellent examples in the history of the Qiang ethnic group.

4.4.1. The Influence of Political Culture

Firstly, the fundamental reason for the integration of Qiang culture by Han and Tibetan ethnic groups is still Due to the influence of geographical environment, the main settlement area of the Qiang ethnic group is located in Lixian, Mao County, and Wenchuan County in Western Sichuan. These three counties belong to the Aba Tibetan and Qiang Autonomous Prefecture, which is situated at the border between Tibet and Bashu. In ancient times, compared to the powerful Han and Tibetan forces, the Qiang were a minor ethnic group. For a considerable period, the Qiang people relied on the Tibetans, although they also depended on the Han during periods when the Han were powerful. When we conducted research in Jiaoqi Tibetan Township on the southern foothills of Jiabin Mountain in Xiaojin County, the locals' clothing was clearly that of the Qiang people. The interior arrangement of buildings and their living customs all indicated that they were Qiang people. However, when we asked about their ethnicity, they explicitly told us that they were Tibetans. Why is this? Historically, apart from the good diplomatic relations after Songtsen Gampo of the Tang Dynasty married Princess Wencheng, there have been continuous disputes between the Han and Tibetan sides, with the Qiang region becoming a battlefield for both parties. Professor Ji Fuzheng wrote in "Chinese Qiang Architecture":

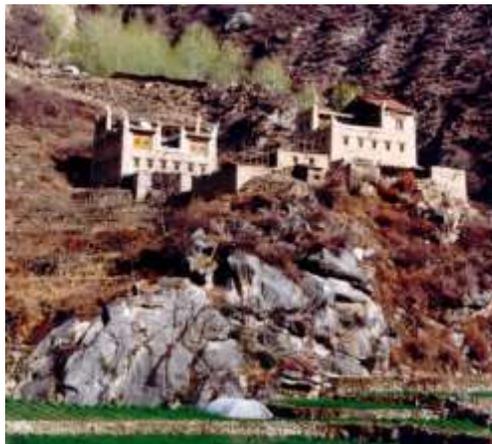


Table 23: Tibetan residence in Jiarong, Sichuan

"The Qiang people are situated between the Central Plains Han and the Tibetans on the Qinghai-Tibet Plateau. The goods and commodities of the Central Plains interacted with the specialties of the border areas. This close relationship prompted the Qiang people to request 'naturalization' as part of the territory governed by the Tang Dynasty..." [Ji Fuzheng, "Chinese Qiang Architecture", General Introduction, Page 2]. However, since the Tang Dynasty, there has been continuous warfare in the Central Plains with few periods of peace or powerful dynasties. More importantly, there has not been an emperor like Emperor Taizong of Tang who treated Hu and Han equally with an open-minded heart. After the Tang Dynasty, the Song Dynasty regarded itself as the orthodox Han, disdaining minority ethnic groups. The Yuan Dynasty even went further, categorizing various ethnic groups into several grades, with Han people being ranked as the lowest race. During the Ming and Qing dynasties, Han power slightly revived but still could

not reach the vast territories and submission of hundreds of tribes as in the Tang Dynasty. Before these dynasties, Tibet gradually became more powerful. The geographical location of the Qiang was closer to Tibet. After being unable to rely on Central Plains forces, they inevitably turned to Tibet for protection. However, Tibetans did not regard the Qiang as their compatriots but merely as a subjugated ethnic group. They only considered the upper reaches of Minjiang River in Western Sichuan as their frontier and sent troops to establish garrison towns (for example, Shangmeng Village and Xiagmeng Village located in Mengtun Valley of Lixian) also known as military colonies. The above picture shows a difference between Gao Rong Tibetan houses and Qiang houses.

Specifically, as for the influence of Tibetan political and cultural forces on Qiang architecture, we can see from the following points: The construction method of roofs is almost identical in Qiang and Tibetan dwellings, with the practice being "first to place round logs, spaced at intervals of 20-40 centimeters (known as girders by the Tibetans). The rafters are covered with densely packed large planks (the trunks and branches are broken into blocks), and then wild oil bamboo and thin branches are laid on top of the wood. Then a layer of mud or clay is applied, and in some places, local wild dry grass such as reincarnation grass and gentian grass is interspersed between them to increase the density of sand and mud resistance. The thickness of the mud layer is about 1-2 centimeters. At this point, it generally takes an overnight interval for it to bond and penetrate densely. The next day, dry mud and coarse soil are continued to be filled on the mud, about 15-10 centimeters thick, and then beaten. If making a floor, the dry mud should be less and thinner, while the roof should be thicker. The entire plane is scraped flat with wooden boards, then evenly covered with about 2 centimeters of fine sandy soil or sticky fine sand mixed soil, and each board is beaten solid... [Ji Fuzheng, Chinese Qiang Architecture Residence, Section 6 Residence Construction and Techniques Page 268 Paragraph 3]

The toilets in Tibetan and Qiang ethnic dwellings also reflect the influence of dominant Tibetan culture on the integration of Qiang culture. The toilets in Qiang dwellings are all constructed by suspending a small room from the stone wall with round logs, with the sewage drains of the upper and lower toilets staggered and separated by wooden boards, and at the lowest level is the manure pit for livestock. This method is completely identical to that used in Tibetan dwellings. The influence of the Han ethnic group is also evident in Lixian County, specifically from the Paibian Tower located in Xuecheng Town. On a small hillside near Xuecheng Town, local slab stones are used to construct a high and tapered base, upon which stands a wooden multi-eave pavilion with a gabled roof, typical of Central Plains Han architecture. The Paibian Tower now houses a statue of a Tang Dynasty general surnamed Li, indicating that during the Tang Dynasty, this area was still within the influence of the Han ethnic group and served as the border between the Tang Dynasty and Tibet.

More specific influences can be seen from the details below. In the areas of Wenchuan and Lixian, many Qiang ethnic residences have covered verandas on their main gates. This practice is a imitation of the typical Qing Dynasty-style hanging flower doors, with their hanging columns, hanging gourds, and bird perches all being very well replicated. The Patterns of Windows and Balusters In Laomuqia Qiang Village and Taoping Qiang Village, we observed that the patterns on some residents' lattice windows and balcony balusters are significantly influenced by Han culture. Typical designs include "" character patterned balusters, revolving patterns and curled cloud patterns, as well as window decorations resembling lantern brocades, among others.

4.4. 2 The Influence of Religious Culture

The Qiang ethnic group is a polytheistic religious community, worshiping deities such as the White Stone God, Horn God, Sheep God, Ox God, Mountain God, Fire God, Water God, and so on. The religion they believe in is considered "witchcraft" by other ethnic groups. However, under the influence of Confucianism, Taoism, and Buddhism from the Han Chinese, as well as the two schools of Tibetan Buddhism - the Yellow Sect and the Red Sect, the Qiang have had a profound impact on architecture. In the residential areas of the Qiang people, we mainly found the following details:



Table 23: White Stone Worship in Taoping Qiang Village

White Stone God: it is a deity revered by the Qiang ethnic group, who, during their migration to the upper reaches of the Min River, defeated the local indigenous "Guoji people" (who indeed have abundant white marble mineral resources in the upper reaches of the Min River) with white stones. Since then, they have worshipped the White Stone God as their highest divinity. The Qiang people place white stones on the rooftops of houses or watchtowers, commonly offering five white stones for worship. The image on the right depicts the five white stones offered on a watchtower. Jiǎojiǎo God: it is a household deity that must be worshipped in every home, set up on the corner shrine of the main house... It is a general term for household gods, including ancestral gods, livestock gods, etc., ... The "Heaven, Earth, King, Parents, and Teacher" altar is also provided for the Han Chinese [Ji Fuzheng, "Chinese Qiang Ethnic Group Architecture", General Introduction, Page 4, Paragraph 1]. This influences the furniture arrangement in the main room of the Qiang ethnic group's residences, using combined cabinets to place various essential household items. The corners of the combined cabinets are used to place corner deity altars. The three-story structure of Qiang ethnic houses: it is a unique architectural feature. Why are the Qiang houses "the bottom level for livestock, the second level for humans, and the top level for drying"? Apart from various natural environmental factors mentioned by my mentor Professor Ji Fuzheng in his book "Chinese Qiang Ethnic Houses", and the influence of Tibetan temple towers on the development of the top cover building, there is also an impact from religious culture. When we asked local elders in Taoping Qiang Village, Lixian County, about why the Qiang people have a three-story structure, they said: "Why is the Qiang architecture a three-story structure? This is mainly inseparable from the religious beliefs of the Qiang people. The way of thinking formed by the deep-rooted influence of religion among the Qiang people believes that the bottom level is for livestock, the top level is for gods, and the middle level is for humans. In other words, this three-story structure is in line with the religious thinking habits of the Qiang people."

4.4.3. The Influence of Folk Culture and Pop Culture on the Qiang Ethnic Group's Architecture

The Qiang ethnic group's residences are greatly influenced by Han culture, affecting not only some architectural details but also the layout and orientation of the buildings, as well as the functional rooms within the homes. Feng Shui Theory: The Qiang ethnic group's residences are influenced by Han culture, valuing feng shui theory in aspects such as the selection of residential sites, the construction dates of houses, and the orientation of houses. For instance, it is preferable for a house to face east towards Yang Mountain, and the foundation of a house must start on a lunar even-numbered day. Gate God: it is one of the Qiang ethnic group's residences, influenced by Han culture, features paintings of the Gate God on their main doors, primarily in the form of wood-carved New Year pictures.



Table 24: Shi Gandang in the Residences of Taoping Qiang Village

Taishan Shi Gandang, it is also known as the "Rescue Stone", is a household amulet used for warding off evil spirits. This belongs to the Han Chinese Taoist culture and is typically placed on the left side of the main gate. As shown in the picture, it is the Taishan Shi Gandang from Xiaoqiong's home in Taoping Qiang Village. A memorial tablet worshipped by Jiao Jiao: The tablets is evidently influenced by the Confucian culture of the Han Chinese. The tablets generally inscribe "Heaven, Earth, King, Parents, and Teachers", which aligns with the moral and ethical concept of "ruler-subject, father-son" in Confucian culture. Miss Embroidery House: Since Confucianism was established as the orthodox religion in the Han Dynasty, the Qiang ethnic region has been deeply influenced. After the Yuan Dynasty, the local chieftain system was implemented, suppressing women's status and changing their perceptions. Wealthy families' daughters lived in embroidery towers from birth, unable to descend until they were married. They were served by maids and did not engage in heavy physical labor, only needlework and other tasks. This is clearly influenced by Han folk culture. In Laomuqia Qiang Village, we also saw a remnant of a lady's embroidery tower. However, unlike the Han wooden multi-storey buildings, this tower is a street-crossing structure entirely made of wood, supported by beams on both sides of the stone walls. The windows are also influenced by Han culture, featuring openwork window designs. As shown in the picture, due to years of disrepair, the original appearance of the lady's embroidery tower in a certain residence of Laomuqia Qiang Village can hardly be seen anymore.



Table25: The Ladies' Embroidery Building in the Old Muka Qiang Village of Lixian County

5. Conclusion

5.1 Significance and Application of Findings

This study explores in depth the influence of geographical environment on cultural formation, especially the influence of geographical environment and culture generated by geographical environment on the formation of Qiang architectural characteristics. The research results not only reveal the uniqueness of Qiang architecture in the complex social and historical background, but also reflect the social customs, beliefs and cultural connotations contained in Qiang architecture. These findings provide a new perspective for understanding the inheritance and development of Qiang culture in modern society, and provide a theoretical basis and practical guidance for protecting the "original flavor" of Qiang architectural forms, villagers' lifestyles, natural environment and humanistic environment.

5.2 Limitations and Future Directions

The methodology section will also address the limitations of the current approach and suggest directions for future research, such as expanding the scope of study, delving deeper into additional aspects of Qiang architecture, and exploring the implications of Qiang architecture for contemporary society.

The Qiang architectural style is a significant cultural landscape with distinctive regional historical and cultural characteristics in China. From the perspective of cultural geography, a research framework can be established for the cultural sphere, cultural landscape, cultural diffusion, and the formation and evolution of cultural regions of Qiang architecture in China, providing a clear research context. The migration history of ancient Qiang people is rare in history. As a large-scale cultural relocation, it adopted a "frog-leaping" method, resulting in discontinuity and mosaic phenomena in the cultural distribution of a certain region. The geographical environment where the Qiang people live led to the collision and convergence of cultural factors, forming new ethnic cultures and regional characteristics. This fully demonstrates that no architecture can exist without the influence of geographical and cultural environments, and its formation process is inevitably affected by the contradictions and conflicts between nature and culture, as well as among different cultures. The migration process of the Qiang people and their cultural variations provide us with an almost perfect example for studying cultural geography, as well as the impact of changes in geographical and cultural environments on architecture, outlining the developmental trajectory of Qiang architectural styles. The above understanding is only a superficial comprehension following the monumental works of predecessors. It has changed my previous naive views that Qiang architectural culture was chaotic, disorganized, or had nothing to offer. It provides us with a vast space for studying the regional and ethnic characteristics of architectural culture.

Funding: This article is supported and approved by the Ministry of Education's Collaborative Education Project: "Construction and Practice Research on the Interdisciplinary Teaching and Research Community for English Entrance in Media Colleges in the Context of High-Quality Development (Program ID: 240801339292456).

Conflicts of Interest: The authors declare no conflict of interest

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