



String instruments are created by the Zhuang ethnic group in the Chinese Guangxi Autonomous Region

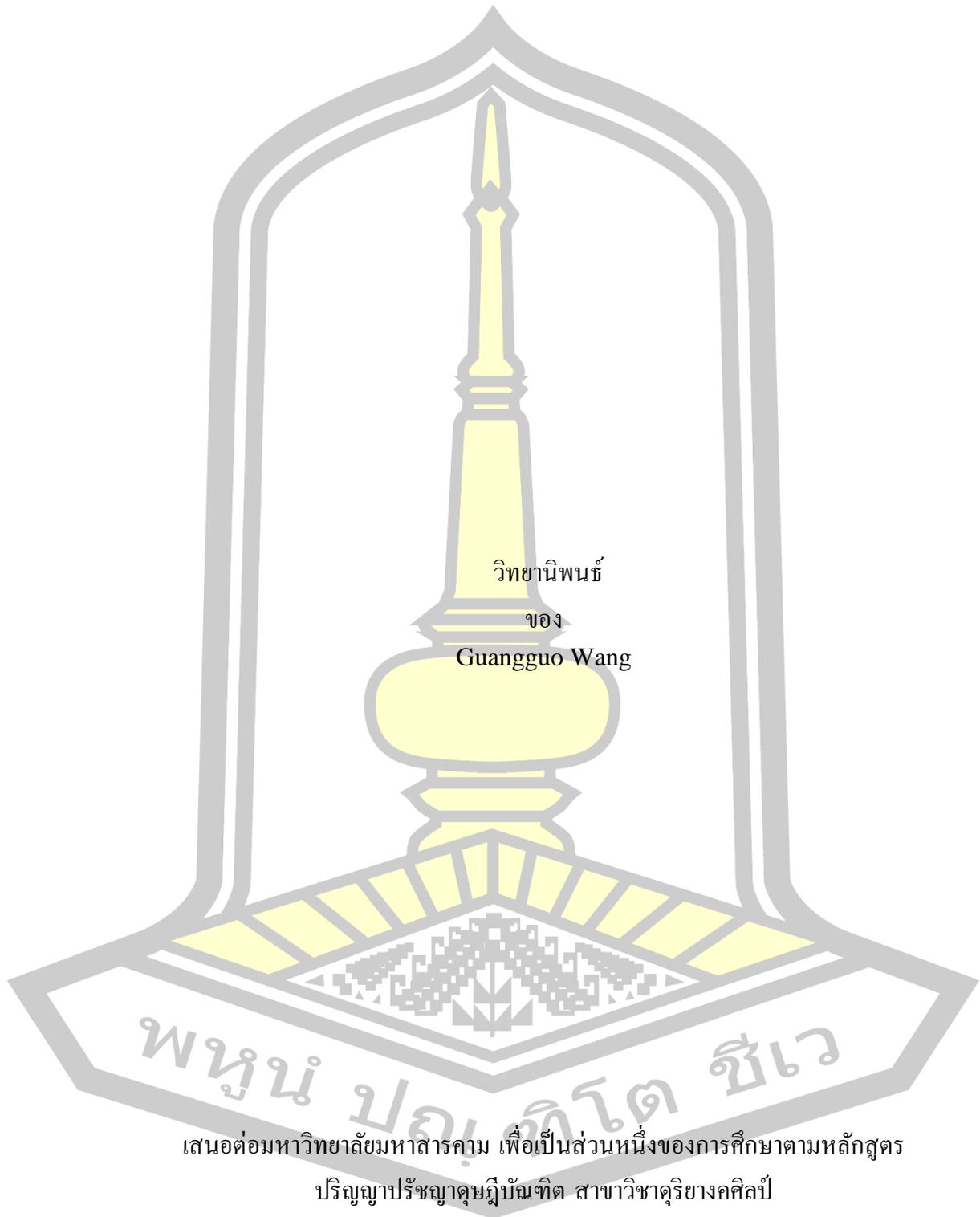
Guangguo Wang

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Doctor of Philosophy in Music

June 2023

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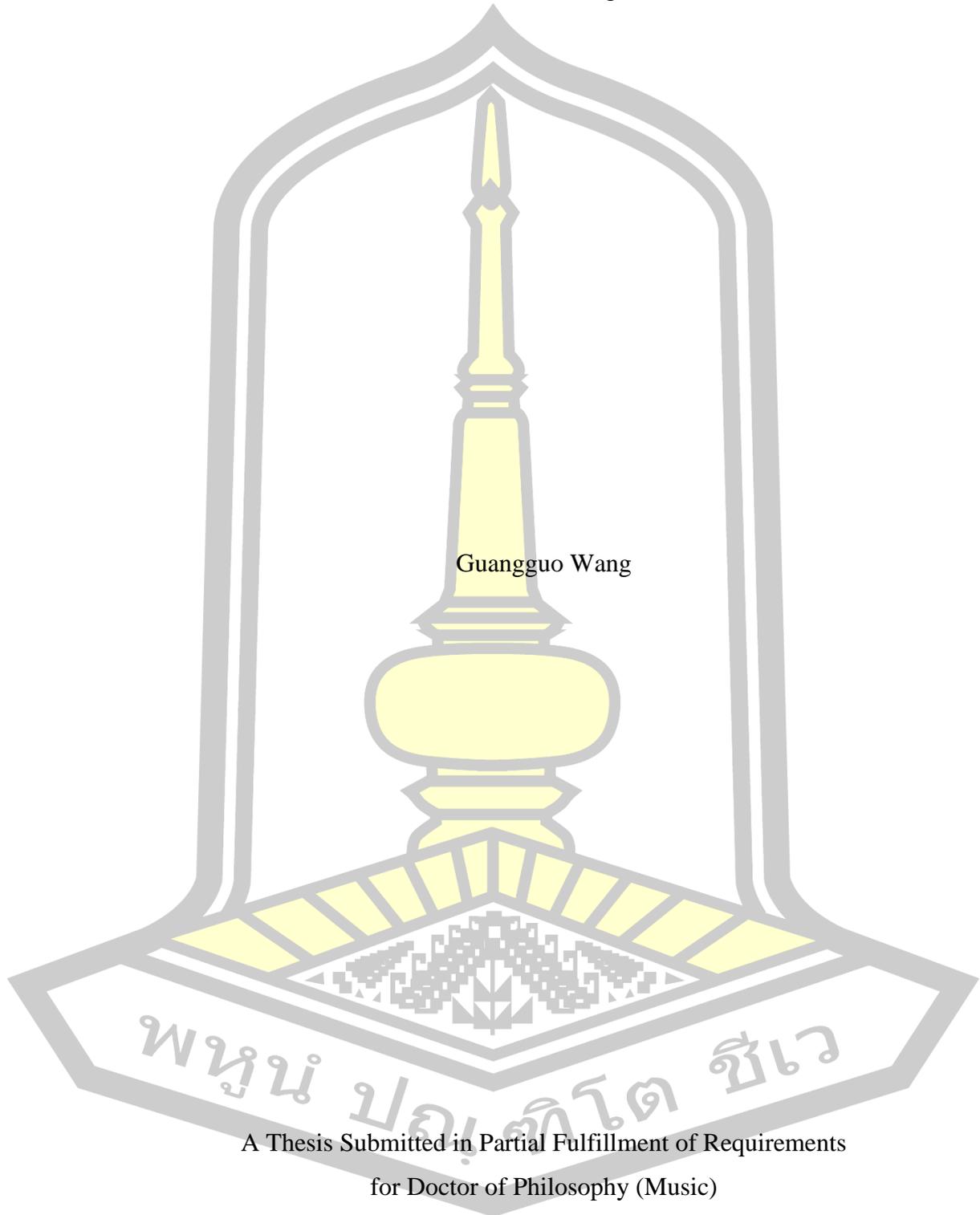


เสนอต่อมหาวิทยาลัยมหาสารคาม เพื่อเป็นส่วนหนึ่งของการศึกษาตามหลักสูตร
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Autonomous Region



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June 2023

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The examining committee has unanimously approved this Thesis, submitted by Mr. Guangguo Wang , as a partial fulfillment of the requirements for the Doctor of Philosophy Music at Mahasarakham University

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ABSTRACT

The objectives of this dissertation were to: 1) investigate the creation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region. 2) examine the function and role of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region. 3) provide a guideline for the preservation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region. The qualitative research method is used. Data are collected on the spot through interviews with 6 key information providers in this field, and the collected data are classified and analyzed. The results show that:

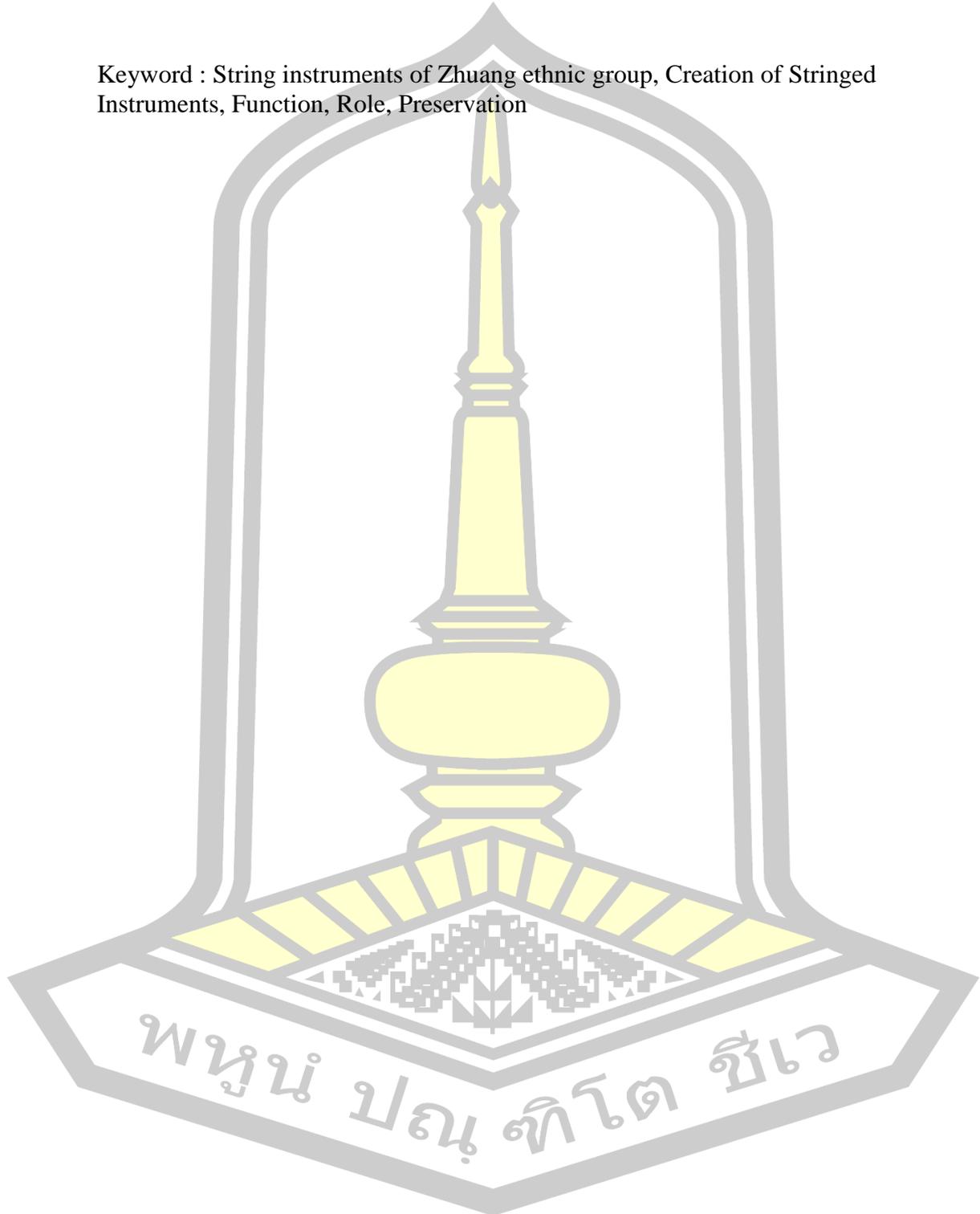
1. The production methods and improvement ideas of Zhuang stringed instruments are all derived from the basic concepts of musical instrument production, and these concepts are also the core concepts gradually summarized in the long history of musical instrument development. The formation of these concepts is based on the unique natural environment and unique cultural ecological environment of the Zhuang area. When these circumstances change, the core philosophy of instrument creating is bound to change with it.

2. Stringed instruments play multiple functions and roles in the entire Zhuang cultural ecology. When Zhuang stringed instruments take on different functions, their roles often change accordingly. For example, its role is that of a musical instrument when it undertakes entertainment and stagecraft functions. When it assumes the function of folk rituals, it is both a musical instrument and a magic weapon. When it undertakes the function of ethnic cultural exchange and dissemination, it is not only a musical instrument, but also sometimes a historical artifact, sometimes a handicraft, or exists as a representative cultural symbol of the Zhuang ethnic group.

3. For the preservation of Zhuang stringed instruments, we should establish a scientific and stable social education mechanism and form a cultural preservation team covering the needs of Zhuang stringed instruments in craft production, artistic creation, performance skills, theoretical teaching and research, and cultural publicity. The inheritors provide as detailed learning materials as possible, conduct long-term, comprehensive, and systematic training for the inheritors, and cultivate a

comprehensive and high-level Zhuang string music art team, which will continue to fuel the preservation of Zhuang string instruments.

Keyword : String instruments of Zhuang ethnic group, Creation of Stringed Instruments, Function, Role, Preservation



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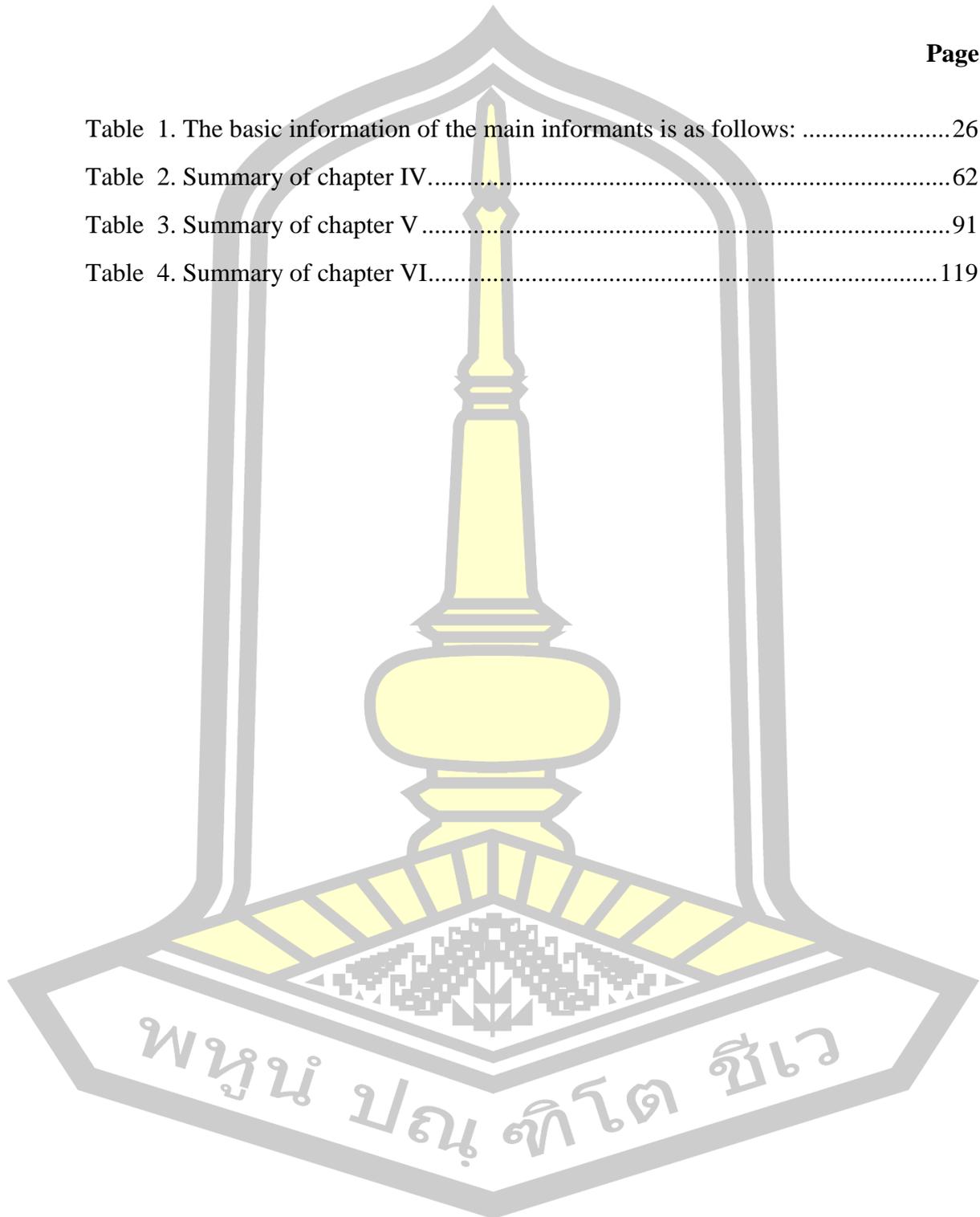
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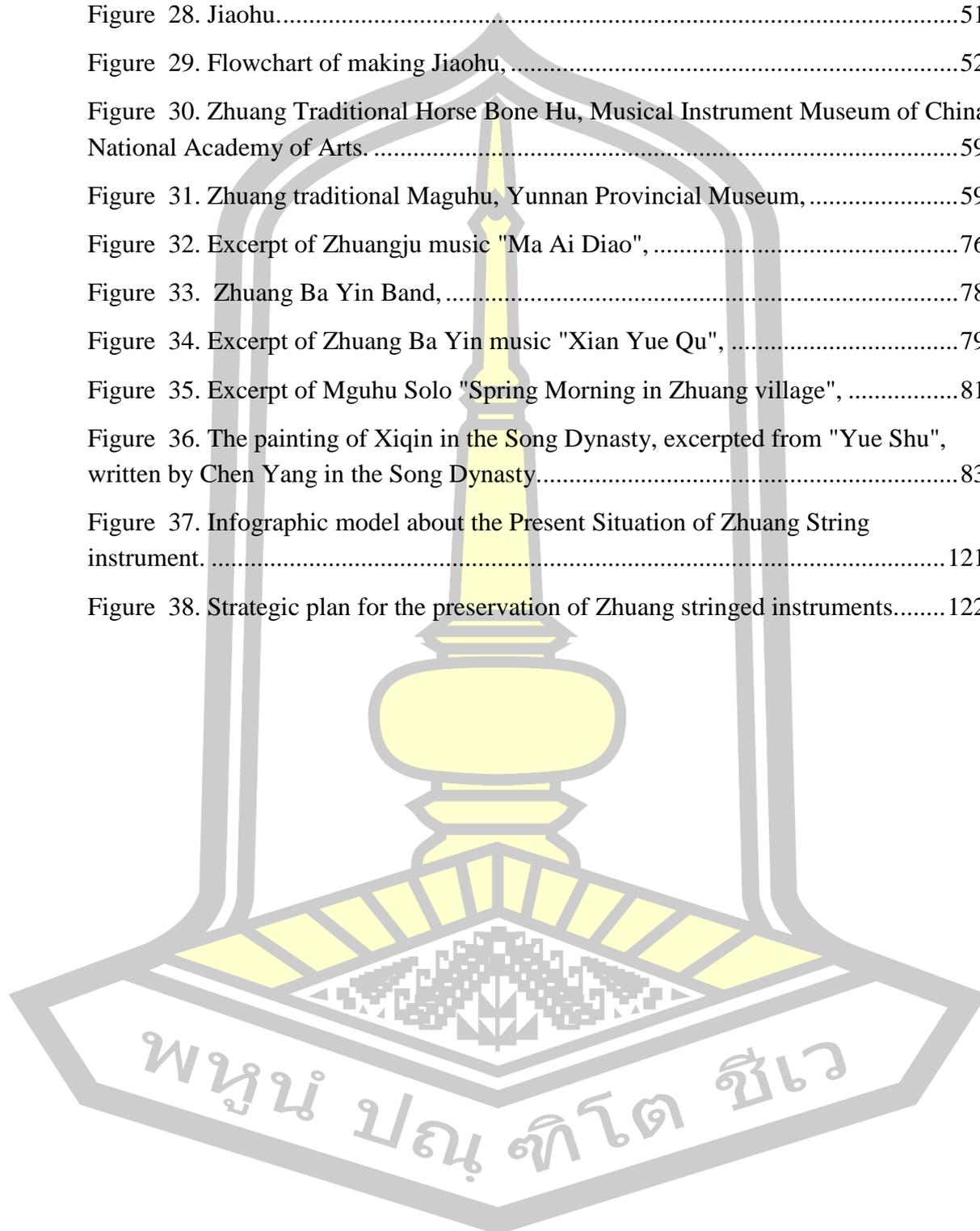
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CHAPTER I

Introduction

1. Statement of the Problem

Guangxi is in the south of China, bordering on Vietnam and adjacent to Guangdong, Yunnan, Guizhou, Hunan, and other provinces. Guangxi is an autonomous region inhabited by many ethnic groups, among which Zhuang nationality is the largest minority in Guangxi. They mainly live in Nanning, Liuzhou, Chongzuo, Baise, Hechi and Laibin in the central and western regions of Guangxi Province.

Zhuang nationality is a nation that is good at singing and dancing. The national musical instruments they use have a long history, and some of them have developed to a very high level. Especially, there are many kinds of stringed instruments with high production skills, which are widely used in Zhuang music, mainly including Maguhu, Tuhu, Huluhu, Jiaohu, Zhutonghu. These instruments are usually used by Zhuangju band (Zhuangju refers to Zhuang Folk Opera) and Bayin band (Bayin band refers to a Zhuang folk instrumental combination), so they are mainly distributed in the popular places of Zhuangju in Western Guangxi. Among these instruments, Maguhu occupies the most important position. It has a high level of development, and it is also the most widely used in music, and it is also the most popular among people, because Maguhu is the only string instrument of Zhuang nationality that can be played alone. In addition, other string instruments can only play accompaniment roles in Zhuangju or Zhuang Bayin band. There are few records about when the string instruments popular in Guangxi Zhuang area began. However, there is a noteworthy situation, that is, among the existing musical instruments used by the Zhuang people in Guangxi, there are not only stringed instruments in a relatively primitive state, but also relatively perfect varieties in the degree of development and evolution. From this, we can directly see the development process of string instruments from simple to complex, from rough to perfect (Yang Xiuzhao, etc. 1989)

It can be seen from the above documents that Zhuang stringed instruments occupy an important position in Zhuang music culture and are widely used, so the research of this topic has important value and significance.

From July to September 2019, the talent training course of Guangxi characteristic musical instrument production, a project of China National Art Fund, was held in Nanning, and I was lucky to be admitted as a student. During the three months of study, we went to folk music collection for many times to learn the production and performance technology of Zhuang stringed instruments from folk artists and inheritors, and successfully held instrument exhibitions and concerts, with great gains. While feeling the great artistic charm of Zhuang stringed instruments, it also stimulated my interest in further study and research of Zhuang stringed instruments.

Unfortunately, these stringed instruments have not attracted the attention of academia for a long time because they have been popular in the countryside and lack comprehensive and systematic research. In the process of its preservation and development, there are still some prominent problems. Although it has received more attention than in the past, it has not changed the practical dilemma of its lost fault.

Although with the support of the intangible cultural heritage project, the local management department has taken some protective measures, such as organizations related to the spread of string music and the opening of String playing courses in some primary and secondary schools, the development status of stringed instruments of Zhuang has not changed substantially. Because the development of musical instrument culture is the result of the joint action of many links, such as the transmission of creating technology, performance techniques, music creativity, dissemination and promotion, theoretical research and so on. The lack of any link in this cultural ecological chain will bring difficulties to the cultural transmission of Zhuang stringed instruments.

Based on the above background, this thesis will focus on the problems existing in the development of Zhuang stringed instruments, and put forward suggestions and solutions to these problems, so that these instruments can better inherit and develop in the future and create more distinctive music.

2. Research Objective

2.1 To investigate the Creativity of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

2.2 To examine the function and role of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

2.3 To provide a guideline for the preservation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region.

3. Research Questions

3.1 How to create Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region?

3.2 What is the function and role of Zhuang stringed instruments in the Chinese Guangxi Zhuang Autonomous Region?

3.3 How to preserve the stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region?

4. The importance of research

4.1 We will know the way to create Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

4.2 We will know the function and role of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region.

4.3 We will know the way to preserve the stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region.

5. Definition of Terms

5.1 Zhuang ethnic group refers to the most populous ethnic minorities living in Chinese Guangxi Zhuang Autonomous Region.

5.2 Stringed instruments of Zhuang ethnic group refer to five kinds of bow stringed instruments unique to Guangxi Zhuang region, which are: Maguhu, Huluhu, Tuhu, Zhutonghu, Jiaohu.

5.3 Craftsmen refers to a technical person who possesses the skills to make a certain product. In this thesis, it refers to the technicians who have the skills of making Zhuang String instrument.

5.4 Creativity of Stringed Instruments refers to the manufacturing methods and concepts used by Zhuang people in the process of creating stringed instruments and the exploration of improving stringed instruments.

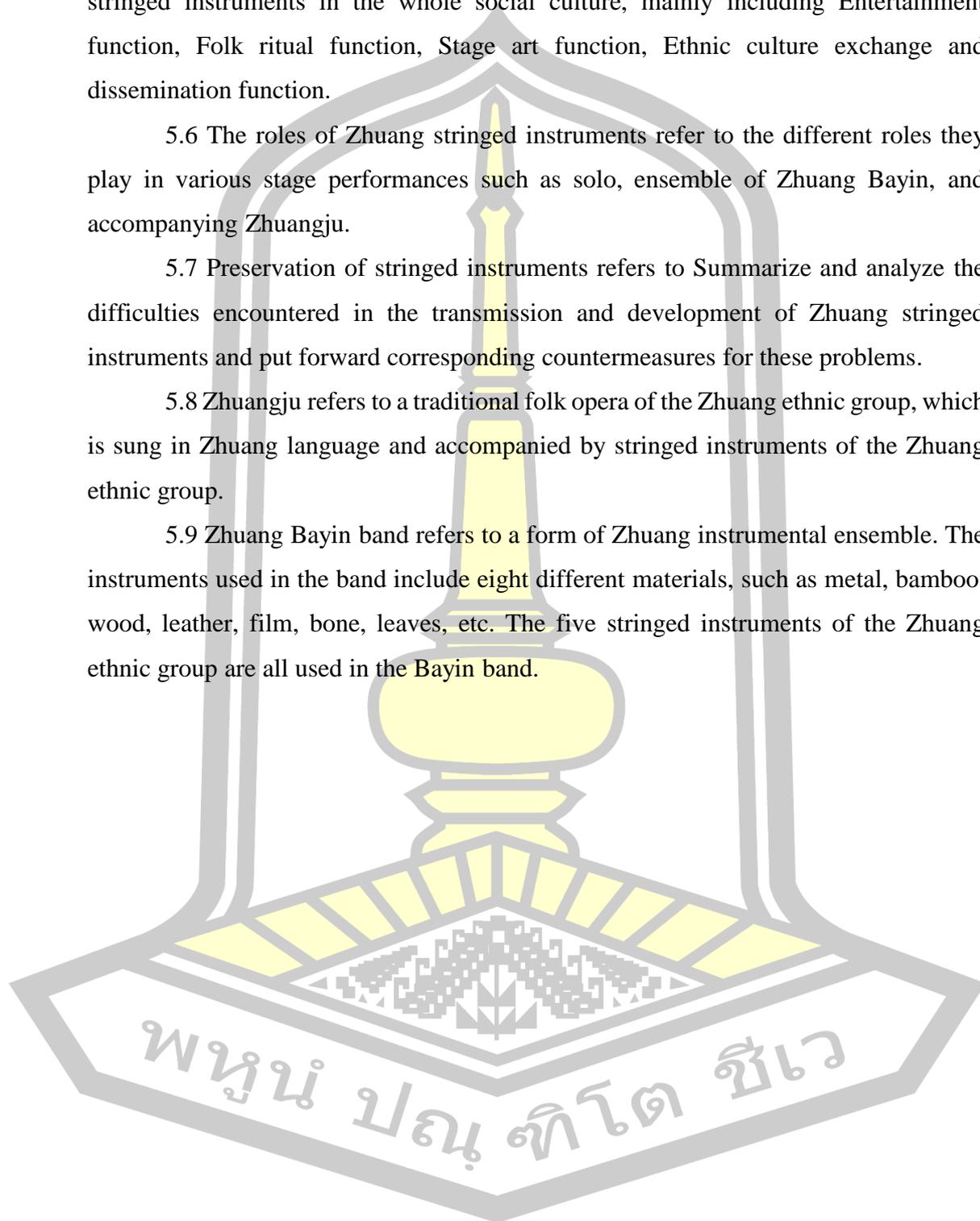
5.5 Functions of stringed instruments refers to the ability and efficacy of Zhuang stringed instruments in the whole social culture, mainly including Entertainment function, Folk ritual function, Stage art function, Ethnic culture exchange and dissemination function.

5.6 The roles of Zhuang stringed instruments refer to the different roles they play in various stage performances such as solo, ensemble of Zhuang Bayin, and accompanying Zhuangju.

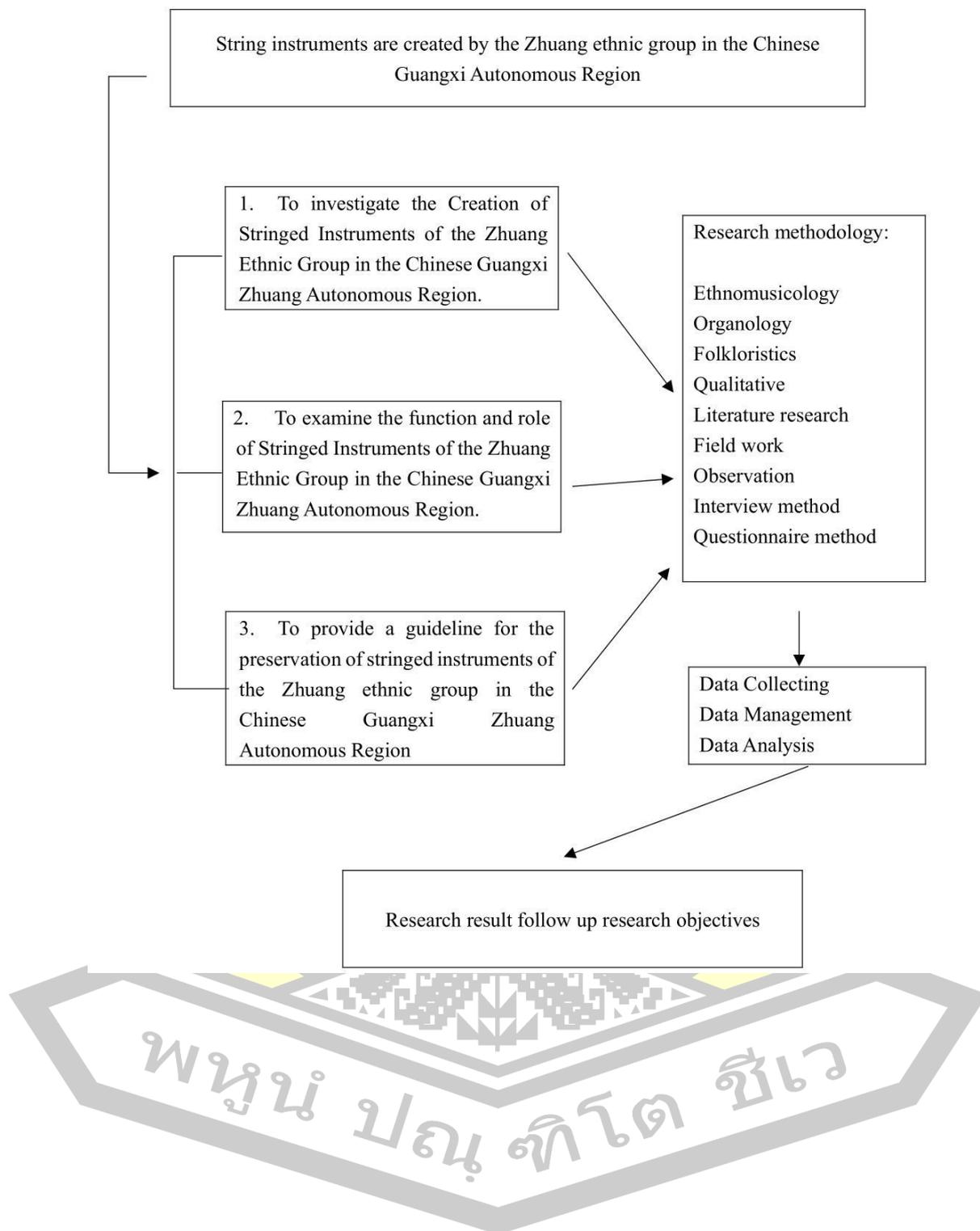
5.7 Preservation of stringed instruments refers to Summarize and analyze the difficulties encountered in the transmission and development of Zhuang stringed instruments and put forward corresponding countermeasures for these problems.

5.8 Zhuangju refers to a traditional folk opera of the Zhuang ethnic group, which is sung in Zhuang language and accompanied by stringed instruments of the Zhuang ethnic group.

5.9 Zhuang Bayin band refers to a form of Zhuang instrumental ensemble. The instruments used in the band include eight different materials, such as metal, bamboo, wood, leather, film, bone, leaves, etc. The five stringed instruments of the Zhuang ethnic group are all used in the Bayin band.



6. Conceptual Framework



CHAPTER II

Literature Reviews

In this study, the researchers reviewed the relevant literature and previous studies to obtain the most comprehensive information available for this study. The researchers reviewed the following topics:

1. The General Knowledge of Guangxi Zhuang Autonomous Region
2. The Development History of Zhuang Stringed Instruments
3. Other kinds of Musical Instruments of Zhuang Ethnic Group in Guangxi
4. The Musical Characteristics of Zhuang Stringed Instruments.
5. The Theory used in Research
6. Relevant International Literature on Musical Instrument Creating and Related Fields
7. The Concept of Creating Ethnic Musical Instruments

1. The General Knowledge of Guangxi Zhuang Autonomous Region



Figure 1. Map of Guangxi province

Source: <https://chinafolio.com/provinces/guangxi-province/> (2022)

Guangxi Zhuang Autonomous Region (Guangxi for short) is in the south of China, with a total area of 236000 square kilometers and a population of 48.92 million; There are 12 ethnic groups including Zhuang, Han, Yao, Miao, Dong, Mulao, Maonan,

Hui, Yi, Jing, Shui and Gelao. It is the province with the largest minority population in China. There are 14 cities and 108 counties (cities and districts) with Nanning as the capital. Guangxi has obvious location advantages in China's opening. It borders Guangdong in the East, Hunan in the northeast, Guizhou in the northwest, Yunnan in the west, Beibu Gulf in the South, and Vietnam in the southwest. Guangxi is located at the southeast edge of the Yunnan Guizhou Plateau in the second ladder of China's terrain, and in the west of the Liangguang hills. The terrain is high in the northwest and low in the southeast. The landform is generally composed of mountains, hills, platforms, plains, stone mountains, and water surfaces. Guangxi belongs to subtropical monsoon climate and tropical monsoon climate. With a total coastline of 1595km, Guangxi is the only ethnic minority autonomous region facing the sea in China. It is also an important gateway and frontier for China to open up to the outside world, move towards ASEAN and the world. It is also the most convenient seaport in Southwest China.

After Qin Shihuang unified Lingnan, Guangxi was included in the territory of the central dynasty, and Guilin Commandery and Xiang Commandery were established. To solve the transportation of grain and pay, the Qin Dynasty dug a Lingqu connecting Lingnan and Central Plains. In the Han Dynasty, Hepu was the starting port of China's Maritime Silk Road at that time, and the Pearl rich Hepu was once prosperous. In the Tang Dynasty, Guangxi became the first level independent political region. At the beginning of the Song Dynasty, the output of tin and lead in Guangxi was in the forefront of the country, and the quality of ramie fabrics was superior. Hengshanzhai, Yongpingzhai and Qinzhou became important market towns and international towns in the southwest at that time. Wuzhou Yuanfengjian became one of the six major coin casting places in the south. On March 5, 1958, the Guangxi Zhuang Autonomous Region at the provincial level was established. Guangxi is rich in natural resources, mineral resources, hydropower resources, marine resources, and tourism resources. In the process of social development, all ethnic groups in Guangxi have created their own national culture with their own unique forms and styles. The world-famous Huashan cliff mural was created by the ancestors of the Zhuang nationality; Guangxi is a sea of songs. The ethnic minorities in Guangxi have created many songs and stories, and the national festival culture is also rich and colorful; In terms of ethnic medicine, Zhuang

medicine, Yao medicine, Miao medicine and Dong medicine all have many folk prescriptions; In terms of national arts and crafts, the embroidery, brocade, batik, ceramics, and steles of ethnic minorities in Guangxi are also well-known at home and abroad. The third day of March in the Chinese lunar calendar is the annual Folk Song Festival of the Zhuang Nationality in Guangxi. In the Song Festival, young men and women often throw Hydrangea balls and touch-colored eggs to choose their partners. In addition, cultural activities such as firecrackers, dragon dance, lion dance and acting were also held. King Pan Festival: it is a grand traditional festival for the Yao people in Guangxi to commemorate their ancestors. It is held on October 16 of the lunar calendar every year. The main contents include jumping long drums, singing King Pan songs, historical songs, love songs, production songs, playing flower sticks, setting off fireworks, and acting. Sing ha Festival: sing ha Festival is the most solemn traditional festival of the Jing people. It is the Jing people's worship to the gods and ancestors in the form of "sing ha" (which means singing in the Jing people) in the fixed activity place - hating to express their admiration for the sea god and Zuo. It is divided into four processes: greeting God, offering sacrifices to God, singing HA and sending off God. Nanning International Folk Song Art Festival: to carry forward folk songs, Guangxi has held folk song festivals since 1993. At the Folk Song Festival, people convey their feelings and meet friends with songs to express their yearning and love for a better life. The folk songs have become a rainbow flying between the nationalities in Guangxi, the fraternal nationalities in China and the nationalities in the world. Sponsored by Nanning Municipal People's government, Nanning International Folk Song Art Festival is a large-scale comprehensive festival integrating culture, economy, trade and tourism. The local operas in Guangxi mainly include Guangxi opera, Zhuangju, Caidiaoju, Cantoneseju, Yongju and so on. (China News Network: <https://www.chinanews.com.cn>)

Zhuang is the most populous ethnic group in China, with a total of 16.926 million people (2010). It is distributed in 31 provinces, autonomous regions, and municipalities directly under the central government, mainly in the south of China, starting from Lianshan Zhuang and Yao Autonomous County, Guangdong Province in the East, Wenshan Zhuang and Miao Autonomous Prefecture, Yunnan Province in the west, Congjiang County, Qiandongnan Miao and Dong Autonomous Prefecture,

Guizhou Province in the north, and Beibu Gulf in the south. Guangxi Zhuang Autonomous Region is the main distribution area of Zhuang nationality, with a total of 14.2071 million people, accounting for 87.81% of the total population of Zhuang nationality, mainly living in Nanning, Chongzuo, Baise, Hechi, Liuzhou, Laibin, Guigang and other places. In addition, 981000 people are distributed in Wenshan Zhuang and Miao Autonomous Prefecture of Yunnan Province, and 129000 people are scattered in other regions of Yunnan Province; There are 42000 people in Lianshan Zhuang and Yao Autonomous County, Guangdong Province, and more than 4000 people live in Xiashuai Zhuang and Yao township of HUAIJI County adjacent to Lianshan; There are 16000 people in Congjiang County, Qiandongnan Miao and Dong Autonomous Prefecture, Guizhou Province; There are more than 5000 people in Jianghua Yao Autonomous County, Hunan Province. The places where Zhuang people live are basically connected, most of them live in communities, and a considerable part of them live together with Han, Yao, Miao, Dong, Mulao, Maonan, Shui and other nationalities. (China government website: <http://www.gov.cn>)

2. The Development History of Zhuang String Musical Instruments

Yang Xiuzhao and Lu Kegang pointed out in their book "textual research on musical instruments of ethnic minorities in Guangxi" that there are many Zhuang musical instruments with relatively complete categories, especially string instruments, which have many kinds, fine production, and wide application. The main musical instruments are: Maguhu, Tuhu, Qing Hu, Zhutonghu, etc. All ethnic minorities in Guangxi have no standardized and unified writing in history and lack relevant historical records of various musical instruments of their own. In this case, the exploration of the origin of Guangxi minority musical instruments can only be inferred from the shape, structure, performance, playing mode, playing repertoire and other aspects of the existing musical instruments. Overall, Zhuang stringed instruments were produced later than other kinds of instruments, and there was no record of Guangxi minority stringed instruments in the literature before the Tang Dynasty and Song Dynasty. Although string instruments, which are now popular among ethnic minorities in Guangxi, have their own characteristics in shape, structure and use methods, they have many similarities with similar instruments recorded in ancient Chinese documents. Judging

from the above basis, the string instrument of Zhuang nationality may be a modified imitation instrument. Zhuang's Maguhu, Qing Hu, Tu Hu, Zhutonghu, Huluhu, Maguhu and other musical instruments all originated from Xi Qin in ancient China, but their evolution and development degree are very different, which can be said to be a microcosm of the development history of musical instruments of ethnic minorities in Southern China. (Yang Xiuzhao, etc.1989)

The bow string instrument first appeared in the late Tang Dynasty in ancient China. It was named Xi Qin. It was used by the Xi nationality, a minority nationality living in the north of China at that time. The Tang Dynasty documents only mention Xi Qin but do not make detailed records. Therefore, the understanding of Xi Qin's shape and characteristics can only be based on the images and words in the "Yueshu" compiled by Chen Yang in the Song Dynasty. According to Chen Yang's Book: Xi Qin is an ethnic instrument in the north. It originated from a plucked musical instrument named Xiantao. When playing, it uses bamboo pieces to clip between the two strings to make sounds. In the Song Dynasty, a bow made of horsetail appeared. The bow made of horsetail gradually replaced the bamboo piece, which was regarded as a real string instrument. Since the late Ming and early Qing Dynasties, string instruments have flourished and developed along with opera, quyi and instrumental ensemble, and gradually differentiated, with many derivative string instruments emerging. First, in order to match the localization characteristics of opera singing style, Banhu with bright voice and high-pitched voice appeared in all parts of the north. And Jinghu, which accompanies Beijing Opera. At the end of the Qing Dynasty, Zhuihu appeared as an accompaniment to Henan Zhuizi. In addition, there are living fossils of music culture - the string instrument Erxian used by Fujian Nanyin. During this period, String instruments were not only widely used in Han areas, but also spread to minority areas. For example, in the Tibetan region in western Sichuan Province, local folk artists made Jiaohu from a tube made of ox horn, which later spread to Qinghai, Gansu and other regions. In the late Qing Dynasty, based on the stringed instruments of the Han nationality, the accompaniment instrument of the Yi nationality, the Sanxian, also derived from the Maguhu of the Zhuang nationality, which uses the thigh bone of a horse as its tube. (Gou Xiaolan, 2020)

Mr. Yang Yinliu, a music historian, also discussed the history and evolution of Chinese stringed instruments. He said: "In the Qing Dynasty, in addition to the original traditional stringed instrument, Erhu, there appeared Sihou and Jinghu, which were specially used to accompany Beijing Opera. Many stringed instruments also appeared in ethnic minority areas, such as Maguhu of Zhuang nationality in Guangxi." This shows that Chinese stringed instruments are growing based on their typical Erhu. If the Chinese string instruments were counted from Xiqin in the Tang and Song Dynasties, a variety of string instruments have been gradually derived over thousands of years to meet the needs of the development of local folk music and opera music. In addition to the typical Erhu shape, there are also Zhonghu, Gaohu, Banhu, Jinghu, Jingerhu, Yuehu, Qinhu, etc., as well as the derivative string instruments of Chinese minority music, such as Maguhu, Jiaohu, Huluhu, etc., thus forming hundreds of Chinese string instrument families. (Wang Xin, 2015)

3. Other kinds of musical instruments of Zhuang nationality in Guangxi

3.1 Bronze Drum

Bronze Drum of Zhuang Nationality According to relevant information, at present, there are only 2400 bronze drums in the world, and 1460 in China, most of which are distributed in the south of China. Bronze Drums are distributed almost everywhere in Guangxi Province, and the collection of folk physical objects is still about 1400, almost equal to the national collection. Hechi, Guangxi, is the area where the most ancient bronze drums are known to have been preserved in the world, and this "living fossil" is still used in many places. The largest bronze drum of the Zhuang nationality in Guangxi, with a drum face diameter of 165 cm, is the largest bronze drum in the world, and is known as the "king of the world's bronze drums". The bronze drums of the Zhuang nationality are both musical instruments, ritual vessels, and ritual instruments. In ancient times, bronze drums were used in wars, sacrifices, festivals, funerals, and sowing. The Zhuang nationality worships the bronze drum as a divine tool and inherits it from generation to generation. It can be said that the bronze drum of the Zhuang nationality is the carrier and crystallization of the history and culture of the Zhuang nationality. (Long Fu, 2003)

3.2 Tianqin

Tianqin is one of the oldest plucked musical instruments of the Zhuang nationality in the border area between China and Vietnam in the southwest of Guangxi. It is a product of the folk witchcraft culture of the Zhuang nationality and is an indispensable instrument for the local Zhuang people to perform sacrifices, rap and daily cultural entertainment activities. Tianqin is popular in Fangcheng, Ningming, Longzhou, Pingxiang and other border villages in Guangxi. The Tianqin is composed of resonance tube, scroll, peg, bridge, string and other parts, with a total length of 95-115 cm. In January 2007, Tianqin art was included in the first batch of intangible cultural heritage in Guangxi. As the country strengthens the protection of national culture, people from all walks of life are thinking about how to effectively inherit and protect the ancient national musical instrument "Tianqin" and carry out theoretical research on intangible cultural heritage. (Lv Tingzhong, 2013)

The functional evolution of the Tianqin is a microcosm of the changes in Zhuang culture and national psychology. The folk conscious transmission of clan system and patriarchal rites and customs has gradually replaced the sacrificial rites. More than 2000 years ago, due to low productivity, Zhuang ancestors hunted, cultivated, lived, and multiplied in the Zuojiang River basin. They could not explain various phenomena in nature, so they prayed to heaven with witchcraft. "Music" exists for entertaining God, that is, the communication between man and God in the concept, which means that music is endowed with divine quality and is stipulated by divine nature. Through long-term labor, Zhuang ancestors slowly grasped some laws of nature, gradually learned to use nature to change their living conditions, and gradually changed from the original fear of nature to thanking nature and living in harmony with nature. The affirmation of human self-value and the psychology of praising labor changed the content of some religious ceremonies, music and dance into fixed cultural activities, gradually dispelled the divinity of the lyre, broke through the nature of witchcraft, changed from offering sacrifices to gods to entertaining people, and later evolved into a musical instrument in comprehensive art. Nowadays, every Zhuang traditional festival, people tend to hold mass "Tiaotian" entertainment activities. The celestial instrument is the only instrument used in the activities, and it has become the "prop" for Zhuang people to express their happiness and joy and hope for a better life. (Wu Jinlin, 2009)

3.3 Bolie

Bolie is a folk wind instrument with Zhuang characteristics. It has been widely spread in Longzhou, Jingxi, Ningming and other places in Guangxi Zhuang Autonomous Region for a long time and has been widely used with a large amount of music. Because of its distinctive timbre and range, Bolie has aroused the research interest of many music researchers. After more than a thousand years of development and preservation, Bolie has gradually developed a distinctive performing crowd. (Lv Tingzhong, 2016)

With mellow timbre and rich expressive force, the characteristic Zhuang musical instrument Bolie has a unique style integrating lyricism and singing. It is a traditional national musical instrument with a long history. This musical instrument was originally played in villages far away from the city. After the improvement of old artists, musicians, and instrument technicians, it has now gone out of villages and is often displayed on domestic and international stages, showing its enduring vitality. Bolie art mainly has five typical social functions: music playing, cultural preservation, magic tools, education, and entertainment; Bolie art reveals the spiritual world of Dai people's ancestors' worship of gods, filial piety culture and other aspects. The in-depth study of Bolie art has a positive role in promoting the development of Bolie art itself, the prosperity of music theory research, and the cultivation of national pride. The Bolie art in Jinlong Town has been handed down from generation to generation. In the 1980s, the Bolie art stepped onto a broader social and literary stage, which also faced the challenges brought by the changes of the original ecological environment to the transmission of national musical instruments. It is also a new choice for Bolie Art to protect, inherit, cultivate, or innovate. (Lei Rilang, 2011)

4. The Musical Characteristics of Zhuang Stringed Instruments.

Qin Dachuan took the performance of "early spring in Zhuang township" as an example in his thesis "a preliminary study on the performance style of Maguhu ", "Early spring in Zhuang township" It is a model of the perfect combination of music creativity in Nanlu Zhuangju and Beilu Zhuangju. The first paragraph is based on Zhuangju, which is a typical opera music. The musical feature is to emphasize the second half of each beat, and the left hand should be widely used on all the second half beats when

playing. Through the flexible use of decorative sound and the ingenious combination of 'small bow', the music is vivid, humorous, and enthusiastic, and reflects the vigorous and steady musical style of Nanlu Zhuangju at the same time. The middle part of the lyric is based on Beilu Zhuangju, which draws lessons from the playing techniques of erhu, the use of longbow and string kneading, and the continuous and fluctuating music processing, which absorbs the singing and lyricism of Erhu performance, making the soft and beautiful musical style of Beilu Zhuangju perfect "; "Among a large number of practical decorative sounds, the big second leaning tone and the small third downward sliding tone are a highlight of its unique performance style, forming a strong southern Xinjiang charm. This charm comes from the charm of the tunes and aria in traditional Zhuang dramas". (Qin Dachuan, 2009)

Tan Yong, Xi Lingling and Sun Xiaoli's thesis "The Traditional Connotation and Modern Interpretation of Minority Musical Instruments - Analysis of the Works of "Pretty Gillian by the Beilun River" pointed out: "The use of a large number of portamento, vibrato and microphonics in the Maguhu voice is similar to The tactful and tortuous rhythm of Peking music, coupled with its high-pitched and clear timbre and lively and jumping rhythm, form a personal contrast with the solo stringed qin." It has achieved great development through mutual reference and integration"; "greatly enriched the timbre change and performance space of Maguhu". (Tan Yong, Xi Lingling, Sun Xiaoli, 2013)

Chen Liming's thesis "Young Loud Voice, Hydrangea Fell - Analysis of the Performance of the Horse Gu Hu Duo "Hydrangea" pointed out: "The music combines the familiar Nanlu and Beilu Zhuangju tunes and Zhuang folk songs with minor music and modern music expression techniques. Organically combined, it is a unique innovation to Maguhu's playing style and technique." (Chen Liming, 2015)

5. The Theory used in Research.

5.1 Ethnomusicology

5.1.1 Definition of Ethnomusicology

Ethnomusicology refers to the study of music from the cultural and social aspects of the people who make it and how it influences the behavior of the listeners. It encompasses distinct theoretical and methodical approaches that emphasize cultural,

social, material, cognitive, biological, and other dimensions, or contexts of musical behavior, in addition to the sound component. Within musical ethnography it is the first-hand personal study of musicking as known as the act of taking part in a musical performance. Folklorists, who began preserving and studying folklore music in Europe and the US in the 19th century, are considered the precursors of the field prior to the Second World War. The term ethnomusicology is said to have been coined by Jaap Kunst from the Greek words, it is often defined as the anthropology or ethnography of music, or as musical anthropology. (Seeger, Anthony. 1983.)

5.1.2 Theories and Methods of Ethnomusicology

Anthropological and Musicological Approaches:

Two approaches to ethnomusicological studies are common: the anthropological and the musicological. Ethnomusicologists using the anthropological approach generally study music to learn about people and culture. Those who practice the musicological approach study people and cultures to learn about music. Charles Seeger differentiated between the two approaches, describing the anthropology of music as studying the way that music is a "part of culture and social life", while musical anthropology "studies social life as a performance," examining the way "music is part of the very construction and interpretation of social and conceptual relationships and processes." (Seeger, Charles, 1983.) Ethnomusicologists following the anthropological approach include scholars such as Steven Feld and Alan Merriam. The anthropological ethnomusicologists stress the importance of field work and using participant observation. This can include a variety of distinct fieldwork practices, including personal exposure to a performance tradition or musical technique, participation in a native ensemble, or inclusion in a myriad of social customs. Similarly, Alan Merriam defined ethnomusicology as "music as culture," and stated four goals of ethnomusicology: to help protect and explain non-Western music, to save "folk" music before it disappears in the modern world, to study music as a means of communication to further world understanding, and to provide an avenue for wider exploration and reflection for those who are interested in primitive studies. (Merriam, Alan. 1964)

5.1.3 The application of Ethnomusicological methods in this study

The research method of ethnomusicology is widely used in this study. It provides important data and plays an important role in field work, interviewing key

informants, sorting, and collecting data, and analyzing data. Based on obtaining data and materials, the researcher uses the principles of ethnomusicology to analyze and explore the historical, social, and cultural backgrounds related to Zhuang stringed instruments, so as to further study their functions, roles, development and preservation status and trends. These contents are covered in the fourth, fifth and sixth chapters of this thesis.

5.2 Organology

5.2.1 Definition of Organology

Organology is a discipline that studies the origin, development, evolution, spread, derivation, structure, characteristics, manufacturing technology and materials of musical instruments, involving archaeology, history, cultural anthropology, musicology, taxonomy, acoustics, mechanics, electronics, technology, materials, and other fields. (Editorial Department of Encyclopedia of China, 1989)

Organology is a discipline that studies musical instruments in terms of their history, social functions, design, structure, and relationship with performance. (Translated by Liu Yong, 2001, New Grove's Dictionary of Music and Musicians)

5.2.2 Theories and Methods of Organology

Organology is a comprehensive discipline. It has no own methodology. The common research methods are as follows:

Taxonomic method: The classification of musical instruments has always been the main content of Organology. Although taxonomy has its own basic principles, its specific methods are indeed diverse. The problems involved in classification include the concept, position, logic, principles, and specific operation methods of classification. These problems are different due to different subjects and objects of classification.

The method of history: This is necessary when studying musical instruments. The most mentioned method of historical research is the dual evidence method, which is the combination of documents and archaeological achievements. Influenced by cultural anthropology, some folk phenomena can also be included in historical research as reference information. There is also the method of oral history, which has grown in popularity in recent years, which is also useful in some cases.

The methods of instrument acoustics and Science Of chinese temperament: the acoustic quality and mechanical characteristics of instruments, and the performance of instruments can be the issues that need to be paid attention to in instrument research. To solve these problems, it is necessary to master acoustic measurement technology, rhythmic calculation method and musical analysis theory. These technologies and theories belong to music acoustics and music morphology respectively and are not unique to instrumental science.

Field work: the cultural research of musical instruments needs to do field work. The manufacturing, history, taboo, relationship with people and society of musical instruments. All require field investigation. Field investigation is a necessary skill for cultural anthropology, folklore studies, and ethnomusicology.

Methods related to archaeology: The study of ancient musical instruments is naturally inseparable from archaeology. Without understanding the knowledge and methods of archaeology, it is impossible to do a good job in the study of ancient musical instruments. Stratigraphic typology. The moon-shaped dating. Jade features, ribbons and other methods need to be mastered. The above five methods are the academic categories involved in Organology. Researchers can determine the methods they want to use according to the research objects and research objectives. (Liu Yong, 2018)

5.2.3 The application of Organological methods in this study

In this study, the research methods of Organology are mainly applied to the fourth and fifth chapters. In the fourth chapter, the characteristics of the materials, methods, and processes of making Zhuang stringed instruments in Guangxi, as well as the improvement practice and exploration of Zhuang stringed instruments, are described by using the methodology and principles of Organology. In the fifth chapter, the function of Zhuang stringed instruments is explored by means of Organological methods.

5.3 Folkloristics

5.3.1 Definition of Folkloristics

Folkloristics, as its name implies, is the study of folklore (lore), which originally meant "the knowledge of the people" or "the wisdom of the people". The professional concept of folklore first appeared in the UK in 1846. It was William

Thomas, a British archaeologist, who first proposed the concept and proposed to study this field. (Wang Degang. 2018)

5.3.2 Theories and Methods of Folkloristics

There are several goals of active folklore research. The first objective is to identify tradition bearers within a social group and to collect their lore, preferably in situ. Once collected, these data need to be documented and preserved to enable further access and study. The documented lore is then available to be analyzed and interpreted by folklorists and other cultural historians and can become the basis for studies of either individual customs or comparative studies. There are multiple venues, be they museums, journals or folk festivals to present the research results. The final step in this methodology involves advocating for these groups in their distinctiveness. (Wilson, William. 2006)

5.3.3 The application of Folkloristics' methods in this study

In this study, the research method of Folkloristics is mainly used in the fifth chapter, which mainly involves the application of Guangxi Zhuang stringed instruments in folk rituals, as well as their functions and roles in the process of folk rituals.

Through the analysis of three research theories, we can see that they have many intersections in terms of research scope, research process, and methods, but they also have their own focus. For example, the three research theories all emphasize the use of field work methods, in-depth field receipt data, Empirical research of research objects, and experience of local cultural life. For example, the theory of ethnomusicology emphasizes the study of musicology within the overall cultural context; Folklore studies emphasizes the study of folklore in the context of overall culture, while musicology emphasizes the study of instrument noumenon and culture in the context of overall culture. In the research process of this topic, three research theories are often intertwined, interpreting the same cultural phenomenon from different perspectives. For example, the fifth chapter discusses the function of the Zhuang String instrument, which not only reflects the methods of ethnomusicology, the principles of musical instruments, but also reflects the knowledge of Folklore studies.

So, the three research theories mentioned above attach varying degrees of importance to different research objectives, but they are not used in isolation, but often overlap. For example, Chapter 4 mainly applies the theory of organology, as well as the

research methods of ethnomusicology. The fifth chapter mainly uses the theories of ethnomusicology and Folklore studies, and the sixth chapter focuses on the methods of ethnomusicology.

6. Relevant International Literature on Musical Instrument Creating and Related Fields

Stanciu MD et al. proposed an ultrasonic method in their thesis " Acoustic and elastic properties of wood used for musical instruments " to measure the elastic properties of anisotropic orthotropic materials used in the manufacture of string instruments. Samples from different wood species were subjected to the propagation of the ultrasonic wave front, the signal being received through a receiver. The sensors were placed successively on the three main orthogonal directions of the wood, obtaining the values of the ultrasound velocity in different directions. Subsequently, based on the mathematical relations, the values of elastic parameters were calcul.

Plath N, Linke S, More R. proposed in his thesis " On the angle-dependent vibrational behavior offiber composite plates and its implications for musical instrument making " that Composite materials facilitate the control of specific properties in components while varying the type, angle, and order of individual fiber weaves in the laminate. This possibility of synthesizing material properties has aroused great interest in musical instrument making since the availability of synthetic fiber composites in the 1970s. However, when arranging plies, the combination of weave types and angles can lead to vibroacoustic effects which are unusual for makers used to working with wood. The mechanics behind these effects are described, starting with an outline of the theory of vibrations in thin plates.

Albano Michela et al. put forward the wood processing technology for making bow string instruments in their thesis " Chemical modification of wood induced by the traditional making procedures of bowed string musical instruments: the effect of alkaline treatments ". The article wrote: Over the last few decades, chemical and physical studies on bowed string musical instruments have provided a better understanding of their wooden finished surface. Nevertheless, until now only a few of them investigated the effects of the chemical pre-treatments in the traditional making procedures. Those treatments are believed to affect wood properties, its interaction with

the following treatments (i.e. varnish application) and its vibro-mechanical behaviour (that may contribute to the acoustical properties of musical instruments). In this study, two traditional alkaline treatments were applied to reference samples of spruce wood, the wood commonly used to make violins' soundboards. An integrated analytical strategy, which combines infrared spectroscopy, analytical pyrolysis coupled to gas chromatography-mass spectrometry, and gel permeation chromatography, was employed to investigate the chemical alterations of lignocellulosic polymers (cellulose, hemicellulose, and lignin). Results have shown that the selected alkaline treatments induce the partial hydrolysis of the hemicellulose chains and a slight decrease in the crystallinity of cellulose. future perspectives of this research could outline new knowledge on the vibro-mechanical behaviour of the violin soundboard and the consequent acoustics. (Albano Michela& Comelli Daniela& Fiocco Giacomo& Mattonai Marco& Lucejko Jeannette Jacqueline& Zoia Luca & Malagodi Marco, 2022)

Lee Ha Neul and Zhang Yiyi analyzed the classification of Chinese national plucked instruments in their thesis " Chinese Improved National Instruments — Plucked Stringed Musical Instruments ", and takes Pipa, Ruan, Liuqin, and Zheng as examples to analyze the current status of the improvement and development of Chinese traditional national musical instruments. Several improvement principles are proposed, including retaining national elements, conforming to national aesthetics, maintaining national charm, and combining art and science.

Koji Matsunobu, in his thesis " Instrument-making as music-making: An ethnographic study of shakuhachi students' learning experiences ", believed that the production of musical instruments was closely related to the teaching and learning of music. He believes that, Instrument-making is a powerful way to teach and learn music, especially world music. This case study looks at adult music learners whose engagement in music involves instrument-making and the long-lasting practice of music. A case in point is Japanese and North American practitioners of Japanese bamboo flutes, especially the end-blown shakuhachi. Informants in this ethnographic study were involved in the organic process of harvesting bamboo, making instruments, and performing music on self-made instruments. Findings indicate that instrument-making contributed to the formation of attachment to the instruments, the development

of place-based musical thinking, and the creativity of an enriched music-learning environment.

Yang Qing. wrote in his thesis " Research on audio test of Chinese national musical instruments based on subjective perception and objective audio characteristics ": He conducted a study on audio tests of 37 Chinese folk musical instruments. According to the subjective perception scores of musical instruments, a visual subjective audio description method is proposed, and the similarity matrix of subjective timbre is obtained by calculating the differences between audio perception vectors. Then the objective audio features representing timbre are extracted, and the differences between features are calculated to obtain the similarity matrix of objective timbre features.

Howard Keith wrote in his thesis " Musical instruments as tangible cultural heritage and as/for intangible cultural heritage ": Musical instruments are central components of both the tangible and intangible heritage. However, discourse about music as intangible cultural heritage frequently overlooks the importance of instruments in conserving traditions inherited from the past and making live performance possible in the present, while curating instruments as tangible heritage often neglects their function for making music. This article explores two interrelated research questions about musical instruments as heritage. First, should instrument-crafting skills inherited from the past be sustained today, and, where industrial or mechanized manufacturing processes and the development of instruments is encouraged, what are the implications for sustaining music traditions? Second, given that instruments as crafted objects deteriorate over time, should instruments inherited from the past be displayed as objects, be restored to playing condition, or be updated and developed for contemporary use? To explore these questions, I take three case studies that juxtapose musical instruments from opposite sides of the world and from societies with very different philosophical and ideological approaches. But the case studies also demonstrate that there is no single answer to questions about the role of musical instruments when (and if) instruments are recognized as both tangible and intangible heritage.

Wenxin Rao. took Southeast Asian musical instruments as the research object in his thesis " The East Asian Musical Cultural Circle of Instruments Ecological

Genealogy", sorting out the history of the spreading of the musical instruments in East Asian countries, justifies that the shapes and categories of chordophones, aerophones, membranophones, and idiophones in East Asia have very distinctive common features, and that traditional Chinese musical instruments have important position and influence in East Asia. Various types of the East Asian musical instruments being compared, this thesis expounds that the eventual formation of the contemporary East Asian instrumental ecological lineage is the cultural re-screening of various musical instruments in localization process in the long-term musical practice under the influence of natural factors and multiple cultural background such as humanitarian environment, a reconstruction, restructuring and multiplication to adapt to national aesthetic orientation.

7. The Concept of Creating Ethnic Musical Instruments

Qiu Chen (2019) wrote in her doctoral dissertation: "The Qintou of the Zhuang musical instrument Tianqin not only have different overall shapes, but also have no fixed models due to the lack of tools for making craftsmen. Therefore, even if they are made by the same person, the Qintou are all different in size. a certain difference".

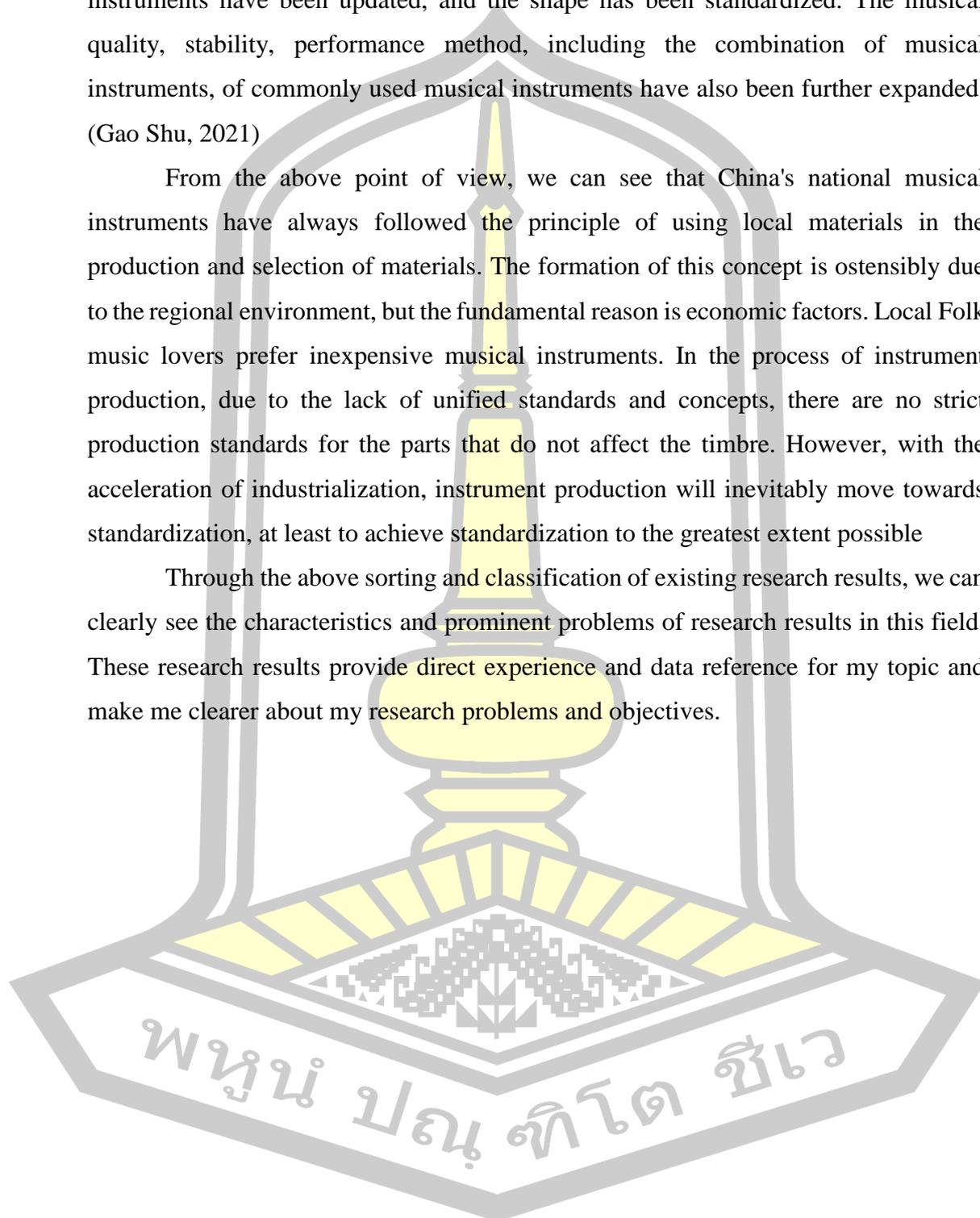
From ancient times to the present, China has always preferred to find materials in nature and use local materials in the field of musical instrument production. In the ancient history of China, some people have classified the natural materials commonly used in the production of musical instruments, because there are 8 categories in total. This classification reveals the tradition that Chinese musical instruments originate from nature and use natural materials. It also shows the ecology of Chinese musical instruments and develops a series of experience and wisdom of Chinese people in understanding, developing, and using musical instruments materials in the long history. (Gao Shu, 2021)

The evolution of the industrialized society has put forward new requirements of the times for Chinese musical instruments. Driven by modern science and technology and national power, musical instruments under natural development have further adjusted, determined, and standardized the representative shape and sound of "Chinese national musical instruments", and continue to play an important role of materials in the external shape and specific timbre of musical instruments. Under the impact and

influence of this environment, the materials used in traditional Chinese musical instruments have been updated, and the shape has been standardized. The musical quality, stability, performance method, including the combination of musical instruments, of commonly used musical instruments have also been further expanded. (Gao Shu, 2021)

From the above point of view, we can see that China's national musical instruments have always followed the principle of using local materials in the production and selection of materials. The formation of this concept is ostensibly due to the regional environment, but the fundamental reason is economic factors. Local Folk music lovers prefer inexpensive musical instruments. In the process of instrument production, due to the lack of unified standards and concepts, there are no strict production standards for the parts that do not affect the timbre. However, with the acceleration of industrialization, instrument production will inevitably move towards standardization, at least to achieve standardization to the greatest extent possible

Through the above sorting and classification of existing research results, we can clearly see the characteristics and prominent problems of research results in this field. These research results provide direct experience and data reference for my topic and make me clearer about my research problems and objectives.



CHAPTER III

Research Methodology

This part introduces the application of research methods related to Zhuang stringed instruments, including the selection of research scope, location, and informant, and details the whole research process, as well as the application of various research methods in the research process. The research outline is as follows:

1. Research Scope.
 - 1.1 Research Content
 - 1.2 Scope of site
 - 1.3 Timeline of research
2. Research process
 - 2.1 Key informants
 - 2.2 Research equipment
 - 2.3 Research tools
 - 2.4 Data collection
 - 2.5 Data management
 - 2.6 Data analysis
 - 2.7 Research Results Presentation

1. Research Scope.

- 1.1 Research Content
 - 1.1.1 The Creativity of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.
 - 1.1.2 The function and role of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.
 - 1.1.3 The preservation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region.
- 1.2 Scope of site
Debao County and Jingxi County in Baise City, Guangxi, China.

The reason for choosing these places is that they are the gathering place of Zhuang nationality, the place where Zhuang stringed instruments are most popular, and the residence of key interviewees.



Figure 2. Map of Baise

Source: <https://mr.baidu.com/r/UFkSD6vkM8?f=cp&u=d5115db32b511abe> (2022)



Figure 3. Map of Debao and Jingxi

Source: <https://new.qq.com/rain/a/20220207A06UZZ00> (2022)

Baise is a prefecture level city under the jurisdiction of Guangxi Zhuang Autonomous Region of China. It is in the west of Guangxi, in the Youjiang River Basin, 266 kilometers away from Nanning, the capital of the autonomous region. It is adjacent to Wenshan Prefecture in Yunnan Province on the west, Guizhou Province on the north, Hechi and Nanning on the East, Chongzuo city and Vietnam on the south. It is located at the junction of Guangxi, Yunnan, and Guizhou provinces and at the junction of China Vietnam border. The northeast is the extension of Qinglong mountain, the northwest is the extension of Jinzhong mountain, the southwest is Huanglian mountain, and the

southeast is the Youjiang Valley. Youjiang River (called Tuoniang River in the upper reaches) runs diagonally through the whole territory from northwest to Southeast and is located at Nachengbi River in the urban area. With a total area of 36202 square kilometers, the city is the largest prefecture level city in Guangxi. The total population is 3.5967 million, and the proportion of Zhuang population is more than 70%. The Municipal People's government is in Youjiang district. (<https://www.so.studiodahu.com>)

1.3 Timeline of research:

The whole-time range of the study is from November 2020 to February 2023.

2. Research process

2.1 Key informants

The informants were determined in strict accordance with the standards and were divided into three groups according to the research needs: scholar informant, casual informant, and general informant. The criteria for selecting informants are as follows:

2.1.1 Scholar informant, with at least 30 years of research experience in the field of Zhuang stringed instruments.

2.1.2 Casual informants, the selection criteria are professional musicians or music majors who are familiar with the stringed instrument culture of the Zhuang ethnic group, and they must all be from the Zhuang area.

2.1.3 General informants, folk inheritors and craftsmen of Zhuang stringed instruments, are required to be engaged in the industry for more than 20 years and have certain popularity and influence.

Table 1. The basic information of the main informants is as follows:

Address	Name	Profession	Age
Jingxi County, Baise City, Guangxi Province	Li Xike	representative inheritor of Guangxi Zhuang Ba Yin	73
Jingxi County, Baise City, Guangxi Province	Zeng Dan	Folk artist of Maguhu making	59
Debao County, Baise City, Guangxi Province	Huang Yige	representative inheritor of Guangxi Maguhu art	66

Nanning, Guangxi	Chen Kunpeng	Performer, theorist, educator	62
Hezhou City, Guangxi	Chen Chuncheng	Maguhu performer, Director of the Opera and Quyí Creativity Center of Hezhou Mass Art Museum	39
Jingxi County, Baise City, Guangxi Province	Xu Yanqin	Undergraduate student of music department of Wuzhou University, Zhuang nationality	23

The details of the informants are as follows:

General informants:



Figure 4. Li Xike.

Source: Wang Guangguo (2022)

Li Xike, male, Zhuang ethnic group, from Xinjing Town, Jingxi City, Guangxi, 73 years old, retired cadre of Jingxi Zhuang Museum, member of Guangxi Folk Artists Association, vice president of Jingxi Zhuang society, vice president of Jingxi Folk Artists Association, head of Jingxi Zhuang folk art troupe, inheritor of Guangxi intangible cultural heritage project "Zhuang Bayin" and "Zhuang field dwarf dance". Good at making and playing Zhuang stringed instruments.



Figure 5. Zeng Dan.

Source: Wang Guangguo (2021)

Zeng Dan, male, Zhuang nationality, 59 years old, has been engaged in the production of Zhuang stringed instruments for a long time. His grandfather Zeng Zhuqing is the fourth-generation successor of Zhuang Bayin art. When he was a teenager, he began to learn the performance of Zhuang stringed instruments. In recent years, he has participated in the research and exploration of Zhuang Bayin art, and has successfully restored a variety of Zhuang folk stringed instruments.



Figure 6. Huang Yige.

Source: Wang Guangguo (2022)

Huang Yige, male, Zhuang ethnic group, 66 years old, representative inheritor of Guangxi intangible cultural heritage Zhuang Maguhu art. He learned the making technology of Maguhu with his father when he was young, and made outstanding

achievements and contributions in Maguhu teaching, transmission, production improvement, Maguhu music creativity and so on.

Scholar informant:



Figure 7. Chen Kunpeng.

Source: Chen Kunpeng (2022)

Chen Kunpeng, male, 62 years old, Zhuang ethnic group, Professor of Guangxi Academy of art, Postgraduate Tutor, ethnic music theorist, performer, educator, vice president of China Ethnic Music Association. For a long time, he has focused on Guangxi minority characteristic musical instruments, Southeast Asian national musical instruments, erhu performance and teaching, and paid attention to the research of minority musical instruments. He has published many theoretical works and performance albums.

Casual informants:



Figure 8. Chen Chuncheng.

Source: Chen Chuncheng (2022)

Chen Chuncheng, female, 39 years old, Zhuang nationality, Erhu and Maguhu performer of Hezhou Mass Art Museum, Guangxi, member of Guangxi Musicians Association. She learned to play Erhu and Maguhu when she was young, has created many Maguhu solos, such as "Spring of Nanling", " Dreamy hometown of Zhuang", " The enchanting hometown of Zhuang", "butterfly dream", " Feelings of Zhuang nationality hometown" and so on, and his works have won many awards.



Figure 9. Xu Yanqin.

Source: Xu Yanqin (2022)

Xu Yanqin, born in Jingxi County, Baise City, Guangxi Province, female, 22 years old, is a Zhuang nationality undergraduate student in the music department of Wuzhou University.

This interview was mainly in the form of non-structured interview. Due to the impact of the covid-19 epidemic, some people used telephone interviews and online interviews.

2.2 Research equipment

Recording pen: used for recording the whole interview process.

Digital camera: used to record the creativity process of Zhuang stringed instruments and the performance of folk artists.

Laptop: used to store relevant literature, videos, pictures, and music.

2.3 Research tools.

To achieve the research objectives of this topic, the main research tools I will use in the research process of this topic are as follows:

2.3.1 Field investigation

2.3.1 Observation form

2.3.3 Interview form

2.4 Data collection:

According to the topic, the researcher first to study the relevant research results of predecessors. The researcher first collected relevant literature through the Wuzhou University Library, the Guangxi National Music Museum and China's most authoritative online literature library - CNKI. Through the research and analysis of these documents, the research objectives of this thesis are further determined.

According to the research objectives, the researcher formulated a detailed field work plan and determined the research site and key informants. Then we designed a safe and reasonable travel plan and prepared the necessary equipment. In order to collect data more comprehensively, the researcher divided the key informants into three groups: academic information, casual information, and general information. Before starting, the researcher first contacted the key informants by telephone and discussed the specific appointment time. According to the field work plan, the researchers came to Debao County and Jingxi County in Guangxi to record the production process and methods of Zhuang stringed instruments by observation. During this period, the researcher personally participated in and experienced the production process of Zhuang stringed instruments.

At the same time, the researchers interviewed six key informants. However, due to the COVID-19 at that time, some informants used the form of telephone interviews. After the interview, the researcher sorted out the interview contents in time to form the interview record. To ensure the accuracy of the data, the researcher sent the interview records back to the interviewees for inspection, and then supplemented and modified them according to the interviewees' feedback.

2.5 Data Management:

After the data collection, all the collected data shall be classified and managed.

2.5.1 Literature:

This part of data is classified and sorted according to the creativity of Zhuang stringed instruments, the functions and roles of Zhuang stringed instruments, and the preservation of Zhuang stringed instruments.

2.5.2 Audio and video materials:

Classify according to different contents and make notes and marks.

2.5.3 Photo materials:

First, classify the pictures according to their contents, such as characters, landscapes, musical instruments, performances, etc. In each category, they shall be sorted out according to the time sequence of shooting.

2.6 Data analysis:

Through the sorted data, the following data analysis tasks are mainly completed:

2.6.1 Analyze and summarize the vertical time axis and horizontal data comparative analysis of Zhuang stringed instrument production art.

2.6.2 The functions and roles of Zhuang stringed instruments in different historical periods are analyzed through data.

2.6.3 Through data analysis, this thesis summarizes the current situation, development trend, existing problems and reasons of the preservation and development of Zhuang stringed instruments.

2.7 Research Results Presentation :

Chapter 1 : Introduction

Chapter 2 : Review Literature

Chapter 3 : Research Methodology

Chapter 4 : The Creativity of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

Chapter 5 : The function and role of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

Chapter 6 : The guideline for preservation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region.

Chapter 7 : Conclusion Discussion and Suggestions

CHAPTER IV

The Creativity of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

The stringed instruments of Zhuang ethnic group in Guangxi mainly include Maguhu, Huluhu, Tuhu, Zutonghu and Jiaohu. This chapter will discuss the creativity of these instruments from the following aspects:

1. Creating methods of five Zhuang stringed instruments.
2. The concept of creating stringed instruments of Zhuang nationality.
3. Exploration on the improvement of Zhuang stringed instruments.

In response to the above questions, we specifically interviewed two key informants in the field of Zhuang stringed instrument creativity, one is Mr. Li Xike, the inheritor of Zhuang Bayin art and the luthier of Zhuang stringed instrument, and the other is Mr. Zeng Dan, a folk luthier of Zhuang stringed instruments. Through the discussion of these three aspects, we strive to further understand the basic principles, creativity ideas, and the reasons for the formation of these ideas of Zhuang stringed instruments, so as to further provide a scientific theoretical basis for the subsequent reform of instrument production.

1. Creating methods of five Zhuang stringed instruments:

1.1 Raw materials for making musical instruments:

According to interviews with two informants, the main raw materials needed to make these five Zhuang stringed instruments include wood, bamboo, snakeskin, bones, horns, gourd shells, and other accessories. The choice of raw materials by the luthier is the early stage of the musical instrument manufacturing process, including the conception of the shape of the instrument and the preliminary assumption of its timbre.

1.1.1 Wood



Figure 10. *Ostrya japonica*.

Source: Wang Guangguo (2022)

As for how to choose wood, Mr. Li Xike believes that the Qintou, Qingan, Qinzhou, and Qintuo of all Zhuang stringed instruments are made of wood. Therefore, the requirements for selecting wood for the five stringed instruments are the same. There is no uniform standard for the types of wood currently on the market, and luthiers can choose the type of wood according to the performance needs and preferences of buyers. At present, the commonly used woods for making stringed instruments are Mahogany, Ebony, and *Ostrya japonica*. For lumber only, the center part of the tree is used, not the sapwood of the tree.

According to Mr. Zeng Dan, Mahogany is often used to make Zhuang stringed instruments. The color of Mahogany is light yellow to dark reddish brown, with dark stripes, and full of luster. The wood has sour taste or sour smell, and is characterized by high density, high oil content, hardness, and wear resistance. Ebony is mainly produced in tropical areas such as Central Africa and Nigeria. Ebony is hard, heavy, delicate and difficult to process, but it has the advantages of glossy, smooth, relatively tasteless and strong corrosion resistance, and is often used for carving, inlaying, making musical instruments and handicrafts. This kind of wood is expensive and difficult to buy. Only when the buyer requires customization, the luthier will use ebony.

According to Mr. Li Xike, *Ostrya japonica* is hard and thick, ruddy in color, not easy to bend and crack, resistant to water and corrosion, good insect resistance, and

high plasticity. It is an excellent material in the fields of machinery, architecture, and furniture. Debao County, located in the southwest of Guangxi, has excellent advantages in producing area. It is convenient to purchase *Ostrya japonica*, high quality and inexpensive, and has become an important choice of wood materials for Zhuang stringed musical instruments.

1.1.2 Bamboo



Figure 11. Bamboo.

Source: Wang Guangguo (2022)

Bamboo is specially used to make the resonator part of the Zhutongqin. Guangxi has a hot and humid climate, abundant rainfall, and is rich in moso bamboo, so the preparation of bamboo is very convenient. Regarding the selection of bamboo, Li Xike believes that the best time to cut bamboo is after the 15th day of August in the Chinese lunar calendar. The period from October to November is the best because the bamboo grown in this period has less water, hard material and is not easy to grow insects. The selection of moso bamboo should choose suitable adult moso bamboo, neither too tender nor too old. Because bamboo with a shorter growth year is too soft, the sound produced by musical instruments is not loud enough. Bamboo that has been grown for too long is too brittle and easy to crack.

In Zeng Dan's view, to remove the insects or insect eggs in the bamboo, prevent it from no longer growing insects, make the Zhutonghu better preserved, and extend its service life, it is also necessary to treat the bamboo by high-temperature cooking. First, add water to the iron pot, put the steaming tray in the pot, put the cut

bamboo tube on the steaming tray for steaming, the steaming time will take about 1 hour, after the steaming is finished, take out the bamboo and let it dry naturally.

1.1.3 Snakeskin



Figure 12. Snakeskin.

Source: Wang Guangguo (2022)

Li Xike said that both Maguhu and Jiaohu use snakeskin to make vibration panels. According to experience, the leather of wild python skin has a unique structure of longitude and latitude, which is more elastic and flexible than other leather materials. The feedback timbre is better, and the range is wider. Therefore, python skin has become the preferred material for the vibration device of Maguhu. He said that the snakeskin he used mainly came from pythons in artificial farms in Vietnam and Yunnan in China. Breeding pythons are like wild pythons in appearance, but the cortex is quite different. Compared with the rearing python, the durability and timbre quality of wild python skin are better. However, wild pythons are protected animals and cannot be hunted and killed at will, so the number of wild python skins is small and difficult to buy. To ensure the sustainable development of skinned musical instruments, the industry even advocates the use of artificially farmed python skins as skin raw materials.

Mr. Zeng Dan said that a complete snakeskin can only take 5-7 skins. Irregularly arranged scales sometimes appear on the snakeskin. To make the sound better and more beautiful in appearance, it is necessary to avoid places with irregular scales for cutting. At this time, only 3 or 4 high-quality skins can be cut out of a

snakeskin. The python skin with good elasticity has high volume and good timbre. Bright, moderately thick python skin needs to be cut correctly so that the scales of the leather are evenly distributed and elastic.

1.1.4 Bones (cow or horse)



Figure 13. Cow leg bone.

Source: Wang Guangguo (2022)

Chinese stringed instruments are mostly bamboo and wood resonators, and the Maguhu is the only stringed instrument in my country that uses horse bones as resonators. Li Xike said that the horse bone he used was generally the femur of a horse aged 6-10 years old. The horse bone at this growth stage was fine and thick, and the Maguhu made of it was bright and penetrating. In addition to the proper size of the selected bone, the bone should be upright and clean, and the surface should be free of obvious bumps and scratches before it can become a qualified aggregate.

Mr. Zeng Dan introduced his own experience on this issue. He believes that there are few people who raise horses in Zhuang areas, and the local horses are small, and their leg bones are relatively thin, so it is difficult to select suitable production materials. So, he suggested using the leg bone of cattle to replace the horse bone. Although the bone density of the leg of cattle is not as high as that of horse bone, the bone of cattle is thicker and more regular. Moreover, the Zhuang region is rich in buffalo, and the supply of cattle bones is relatively sufficient and convenient.

1.1.5 Horn



Figure 14. Horn.

Source: Wang Guangguo (2022)

Li Xike said that the material used for the resonators of Jiaohu is buffalo horn. Guangxi Zhuang ethnic group belongs to the farming culture. The buffalo breeding is relatively developed, and the raw materials of horn are easy to collect. The resonance part of the Jiaohu should use the horn of an adult cow. After cutting the horn, first excavate and clean the inner chamber, and then open the sound hole.

Zeng Dan introduced his experience and said that there was a large odor inside the ox horn, so deodorization should be carried out first. The specific method is to soak the ox horn in gasoline for one day, and then take it out and clean it, then there is no odor.

1.1.6 Gourd shell



Figure 15. Gourd shell.

Source: Wang Guangguo (2022)

Gourd shell is the material used to make the resonator part of gourd hu. According to Li Xike 's experience, the mature gourd melons are first picked and air-dried, and then the gourd melon shells with good appearance and moderate size are selected for processing. Cut the selected gourd shell horizontally at the larger end and remove the seeds inside.

Zeng Dan believes that the naturally grown gourd shell is easy to grow moths. Once the moths grow, it will not only affect the timbre of the instrument, but also affect the service life of the instrument. Therefore, insect prevention should be carried out in advance. The specific method is to soak the gourd shell in lime water for more than 24 hours, and then take it out to dry, so as to prevent both insects and dry cracks. If you want to increase the hardness of the gourd shell, you can also apply a layer of quick-drying glue inside the gourd shell.

From the introduction of the main production materials above, the only difference in the selection of materials for Zhuang's Maguhu, Tuhu, Huluhu, Zhutonghu, and Jiaohu is the resonator part. Other parts except the resonator are all Crafted from wood.

1.2 Tools required for production.



Figure 16. Part of production tools.

Source: Wang Guangguo (2021)

Li Xike told the researchers that there are four types of common manufacturing tools, namely cutting tools, grinding tools, drilling tools and tools for fixing snakeskin.

The four types of tools contain different specific tools with different functions and features. The cutting tools are generally used to cut wood and bones, the grinding tools are used for molding, the drilling tools are used for drilling, and the tools for fixing snakeskin are used for the technology of fitting the snakeskin vibration membrane with the resonance box of musical instruments.

The tools used by Mr. Zeng Dan are also common in daily life. The cutting tools he uses are mainly divided into manual cutting and mechanical cutting. The manual cutting tool is a handsaw. Because it is light and safe, luthier often cuts small and fine parts. The mechanical cutting tool is an electric saw, which is powered by electricity. The circular saw blade is driven by a transmission mechanism to perform sawing operations. It is labor-saving, fast and smooth. The main function of grinding tools is to clean the inner wall of bones, shape the Qinzhou, Qingan, support and polish the Qintou. Grinding tools include hand-held grinding machine, sandpaper, file, and self-modified electric abrasive tools. Luthier generally use hand-held sanders and sandpaper to polish bones or wood, or to shape the Qingan, Qinzhou, and Qintuo. The file is small and flexible. It is generally used to trim the shape of horse head and thin the inner wall of horse bone. In the production practice, the musical instrument maker has modified the electric abrasive tool by himself, which can speed up the rotation, replace the size and thickness of the drill bit, and improve the efficiency of cleaning the inner wall of the bone. The drilling tools mainly include bench type electric drills and hand-held electric drills, which can manually control the drilling speed and change the size of the drill bit to meet the drilling requirements of different parts of the Qingan, Qintong, and Qintuo. Tools used for snakeskin installation and fixation are mostly molds designed by the luthiers themselves. Different luthiers have different methods, and they also need to use tools such as strong glue.

1.3 Musical instrument production process:

1.3.1 Production of Maguhu:



Figure 17. Maguhu.

Source: Wang Guangguo (2021)

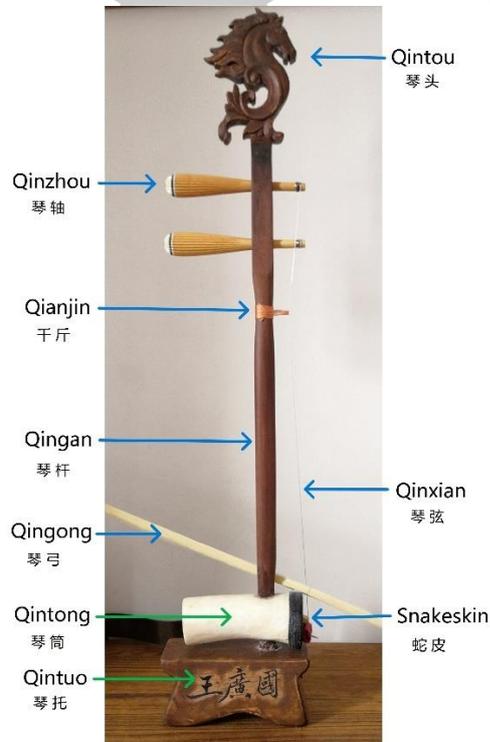


Figure 18. Names of parts of Maguhu.

Source: Wang Guangguo (2022)

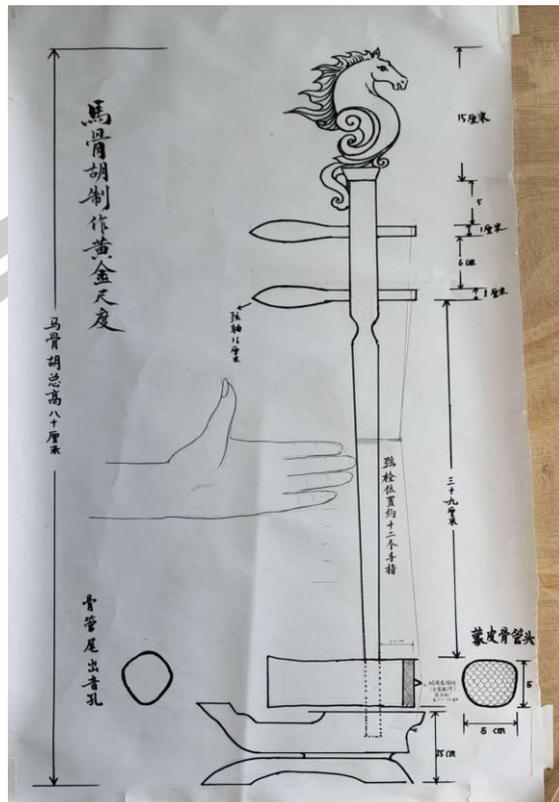


Figure 19. The chart of Maguhu, drawn by Mr. Zeng Dan.

Source: Wang Guangguo (2022)



Figure 20. Flowchart of making Maguhu,

Source: Wang Guangguo (2022)

According to the creating habit of Mr. Li Xike, when the materials and tools are ready, the wood used for the production of the Qtou, Qingan, Qinzhou, and Qintuo should be transported to the wood factory together, and then cut in batches according to the size specifications of different parts, and then take the cut wood block back to the

workshop for further processing. Generally speaking, the final assembly of these parts is carried out after each part is made separately.

Mr. Zeng Dan said that when creating the Qintou of Maguhu, first draw the shape of the horse head with a pencil on a square piece of wood with a side length of 20 cm. To make the horse heads of each Maguhu have a unified style and have their own elegant demeanor, a mold in the shape of a horse head was first made with a plastic plate. The outline of the overall horse head drawn by using the mold each time is roughly the same, but each horse head has its own characteristics in the process of fine carving. The finished horse head shape is about 15cm high, and it is decorated on the top of the Qingan, which is very visually beautiful.

In Li Xike's opinion, the Qingan is the part connecting the Qintong and the Qinzhou. It has the function of structural support and reflecting sound waves during performance. It is one of the important components of the horse bone. The production of Qingan must not only ensure its functionality, but also have good hardness and moderate elasticity to ensure its comfortable feel. Clear-grained wood has the characteristics of high density, good bending resistance, and strong sound reflection ability. Mahogany and Chinese toon wood with wood grains arranged in an orderly manner from top to bottom are the best materials for Qingan. For mass-produced Maguhu, the Qingan are generally processed uniformly by the foundry, but some luthiers choose to make the Qingan by hand to make high-quality Qingan that better match the different timbres of the Maguhu. The production of this handmade Qingan requires a mature level of handcrafting. The luthier needs not only rich experience in making Qingan, but also a good grasp of the playing skills of Maguhu to achieve the best level of craftsmanship in the production of Qingan. The biggest difference between mass-produced Qingan and hand-made Qingan is that the size of the Qingan mass-produced by the factory is the same from top to bottom, and the size of hand-made Qingan gradually decreases by about 2mm from top to bottom. The role of the gradual change in the size of the Qingan is to enhance the bending strength, so that the user feels comfortable when playing and can change the handle freely. The production of handmade Qingan has high requirements for luthiers, and its output is relatively small. At present, most of the Qingan on the market are mass-produced by factories.

The Qinzhou is the main part of tuning, so the choice of material is very important. The quality of the Maguhu depends largely on the raw materials and manufacturing process used. Therefore, when choosing the material of the Qinzhou, you should first consider whether its material and characteristics meet the requirements of the musical instrument. The material selection standard of the Qinzhou is the same as that of the Qingan. It must be straight and without marks, otherwise it is prone to cracking and deformation. Usually, the cutting specification is 15cm long and 3.5cm wide. First, fix a hexagonal plastic mold with a diameter of 3cm at the center point of the upper end of the wood with an iron nail, trace the shape of the hexagon according to the mold, and mark it with a pencil. Secondly, use a scribe to draw the centerlines and bottom centerlines of the four facades of the wood, and draw a circle with a diameter of 1cm using the center point of the bottom as the center of the circle. Then use a hand-held grinder to grind along the drawn line, grinding it into a shape with a thick top and a thin bottom, and then use a carving knife to carve hexagonal lines for beautification.

Mr. Zeng Dan believes that Qintong is the soul of Maguhu. It is very important to select high-quality Qintong materials for making Maguhu. The timbre of the Maguhu is also different if the selected bone size is different. Only by making a Qintong with the appropriate size, shape and thickness of the resonance cavity can the horse bone make the most pleasing sound. Luthiers generally choose the middle part of the femur bone from a mature horse bone. The bone should not be cracked, thin or severely deformed, and the shape of the bone should be as smooth as possible. The first step in processing horse bones is cooking and drying. The sundries in the horse bone will affect the timbre, volume, and service life of the Maguhu. Therefore, it is generally necessary to cook and dry the horse bone 2-3 times to boil out the fat and bone marrow residue in the bone and clean it. After the horse bone is cleaned and dried, the second step of processing the Qintong: use a saw bow or a miter saw to cut the length of the bone into 11-12cm. Horse bones are fragile, so be careful when cutting them. The third step is to outline the inner shape of the bone cylinder and the thickness of the Qintong with a pencil. The internal shape of the Qintong is generally like the shape of the bone itself, instead of grinding the inside into a round or oval shape, to ensure uniform sound wave transmission in the resonance cavity. According to their experience, luthiers generally control the thickness of the Qintong between 1-2mm, and the specific thickness depends on the shape

and size of the bone and the timbre requirements of the buyer. The last step in the construction of the Qintong is to punch the hole. Punch two holes perpendicular to each other at the larger end (head) of the bone so that the Qingan can pass through the Qintong and be fixed with the Qintuo; make a hole at the bottom of the smaller end (tail) of the bone so that Fix the Qintong.

The processing of snakeskin mainly includes the steps of cutting, cleaning, stretching, and pasting snakeskin. The technology of snakeskin treatment plays a decisive role in the timbre of Maguhu, and it is the process link that most tests the craftsmanship of the luthier. There is no reference standard for the degree of wetness, elasticity, and tightness of the snakeskin. It is based on the experience of the luthier, and it is also adjusted according to the size and thickness of the Qintong. The first is to cut the snakeskin and cut out a square snakeskin with a side length of 12-13cm. The thickness of the back of the snakeskin is different from that of the two sides, in order to ensure that the scales on the back of the skin are the same size on the left and right sides, the tension of the snakeskin is even, and the appearance is beautiful. The centerline of the spine of the snakeskin should be determined, and the centerline of the spine of the snakeskin should be used as the reference for cutting, leaving 6-7cm at the top, bottom, left, and right. The second is the treatment of the surface of the snakeskin, which refers to cleaning the oil on the surface after softening the snakeskin. The purchased snakeskin has been air-dried, and the water content of the snakeskin is insufficient. If it is directly used to paste the snakeskin, it will not only be difficult to handle, but also cause noise due to the arrangement of snakeskin fibers and uneven vibration. Therefore, after the snakeskin is cut, it needs to be soaked. There is a lot of oil on the snakeskin and adding an appropriate amount of washing powder when soaking in water will help to clean the oil. The time for soaking snakeskin in water usually depends on the thickness and hardness of the snakeskin and the temperature and humidity of the environment. If the snakeskin is soaked in water for too long, the water content of the snakeskin will be too large, causing problems such as softness and even rot. Skinning with improperly soaked snakeskin will cause noise to the musical instrument. Generally, it is advisable to soak until the reverse side of the snakeskin turns white. After the softening is completed, shovel the skin, that is, use a blade or other flat sharp object to remove the residual grease in the snakeskin and the excess attachment on the snakeskin. Next is the stretching of the snakeskin, that

is, fixing the snakeskin on the tool so that its fibrous tissue is evenly extended. The last process is to paste and fix the snakeskin. This step tests the technical level of the producer.

According to Mr. Li Xike, the early Maguhu did not have a Quintuo. In the 1960s, the Guangxi Song and Dance Troupe and Beijing Musical Instrument Manufacturing Factory found that the Quintong of Maguhu is small and the Qingan is short, which made it easy to lose the center of gravity when playing. It is very difficult, so people are specially organized to reform the Maguhu and add Quintuo to the Maguhu. The material selection of the Quintuo mainly follows the same principle as the material of the Quintong and the Qingan and the smooth and scarless wood is selected.

The above is the production method of each part of the Maguhu. Since the production method and process of the other parts are basically the same as the Maguhu, except for the production method of the Quintong (resonator) of the other four Zhuang stringed instruments, so in the following I won't go into details in the musical instrument production process.

1.3.2 Production of Huluhu:



Figure 21. Huluhu.

Source: Wang Guangguo (2022)



Figure 22. Flowchart of making Huluhu,

Source: Wang Guangguo (2022)

Mr. Li Xike said that the structure of Huluhu is roughly the same as that of Erhu, and their biggest difference is the resonator. This instrument is easy to get materials and simple to make. The resonator of Huluhu is made of two naturally mature cucurbit shells. Remove the bottom of the thicker end of the cucurbit, stick a tung wood sheet on the cut, and place a wooden Qinma in the opposite center. The gourd with the thinner end is carved into a national pattern or a plum petal shaped sound hole. Eight to ten symmetrical holes are opened for sound transmission. The resonator is 15 cm long and the face diameter is about 13 cm. Because its resonator is not as hard as the Erhu wooden resonator, the Huluhu has a low and thick voice. Its Qintou is decorated by another small gourd perpendicular to the Qintong and is made of hard mahogany or rosewood. The two chords are located below the Qintou, which is conical and carved with stripes to increase friction. The supporting Qingan is 70 cm to 80 cm long, made of wood or bamboo. The cylindrical shape is thick at the top and thin at the bottom. A silk Qianjin is set in the middle, and the lower end is loaded into the resonator. The two strings are wrapped with steel wire strings by silk strings or nylon, from the Qinzhou to the bottom of the resonator, with a range of a-a 2. The bow is an ordinary erhu bow, about 60cm long.

Mr. Zeng Dan believes that Huluhu belongs to the same category as the Chinese traditional stringed instruments. Its shape originates from the ancient Chinese Xiqin. Its structure and principle are like those of stringed instruments after the Song Dynasty. It is a folk musical instrument made in minority areas by imitating the shape of other traditional stringed instruments. Because the main material used to make it is

cucurbit, a natural plant peculiar to the southern subtropical region, its appearance is quite different from that of other string instruments. In addition, its vibrating plate is not made of snakeskin, but of thin wood, so its pronunciation is thick and strong, which is different from other string instruments and shows strong local characteristics.

Mr. Li Xike said that in the production process, the most critical step is to deal with the gourd shell used to make the resonator. Because the calabash shell is a kind of plant, which is vulnerable to insect damage, insect prevention treatment should be carried out before production. The specific method is to soak the dried gourd shell in lime water for more than 24 hours, and then take it out to dry, so that it will not be eaten by insects after treatment.

1.3.3 Production of Tuhu:



Figure 23. Tuhu.

Source: Wang Guangguo (2022)



Figure 24. Flowchart of making Tuhu.

Source: Wang Guangguo

The two informants agreed that the production of Tuhu is the easiest of several Zhuang stringed instruments because the materials used by folk artists to make the instrument are all native natural materials. The whole body of Tuhu is made of wood, most of which are made of Wutong wood, or fir wood. The length of the Qintong is about 25cm, and the diameter is about 16cm. The Qintong must be made of an entire log with the middle hollowed out and chiseled. One end of the barrel is pasted with a thin wooden board as the vibration panel. The thickness of the vibration panel should be moderate, generally 0.5cm. The method of other parts is basically the same as that of other string instruments. The height of the instrument is about 100cm throughout the month. Both Tuhu and Huluhu belong to mid tone stringed instruments, with a range of a-a2.

1.3.4 Production of Zhutonghu:



Figure 25. Zhutonghu.

Source: Wang Guangguo (2022)

พหุมนุ ปรณุ ทิโต ชิเว



Figure 26. Zhutonghu and Old bamboo shoot shell.

Source: Wang Guangguo (2022)



Figure 27. Flowchart of making Zhutonghu,

Source: Wang Guangguo (2022)

Mr. Li Xike said that Zhutonghu is one of the most ancient stringed instruments of the Zhuang nationality, which benefits from the ease and convenience of making Zhutonghu, because the whole body of the early Zhutonghu is made of bamboo, while bamboo is abundant in Zhuang nationality areas, which greatly facilitates the production and dissemination. Although wooden materials can also be used for parts such as Qingan and Qinzhou, many Zhutonghu still retains the tradition of bamboo materials. One of the most distinctive and difficult steps in the Zhutonghu production process is to process and install the Vibrating diaphragm. The skin of Zhutonghu is completely different from other stringed instruments. It uses the old

bamboo shoot shell as the vibration panel. Because the old bamboo shoot shell is hard and easy to break, it is not easy to paste and fix it, so the old bamboo shoot shell should be soaked in water first. Let it soften, and then glue it to the Qintong.

Mr. Zeng Dan said that Zhutonghu is also a kind of folk imitation musical instrument like other stringed instruments of the Zhuang nationality. The Zhutonghu is made of a length of bamboo tube with a bamboo knot, about 15cm in length and 8cm in diameter, with one end of the bamboo joint as the bottom, and a plum blossom-shaped sound hole engraved on the bamboo joint. Cut the other end flat and paste and fix the old bamboo shoot shell at the cut. However, most of the Maguhu made by luthiers now use bamboo tubes without bamboo joints as resonator, which is simpler and more convenient to make. The Qingan can be made of bamboo or wood, and the length is about 70cm. There are two hardwood pegs, about 14-15cm long, and the rest are basically the same as other stringed instruments. The selection of bamboo materials also requires attention to maintaining a diameter of around 8cm. Bamboo that has been cut down usually needs to be stored for 2-3 years before use, as the moisture of the bamboo has already dried out. This type of bamboo is more stable, less prone to cracking, and has better sound vibration.

1.3.5 Jiaohu:



Figure 28. Jiaohu.

Source: Wang Guangguo (2022)



Figure 29. Flowchart of making Jiaohu.

Source: Wang Guangguo (2022)

Mr. Zeng Dan thinks that the Qintong of Jiaohu is made of ox horn. The length of the horn is generally not less than 20cm. The diameter of the root of the horn is about 6-7cm. The root of the horn is pasted with snakeskin as the vibration surface. The sound hole is cut in the place to make the air inside and outside the resonator communicate. The Qingan is generally made of relatively hard wood and is cylindrical in shape with a length of about 70cm. The top of the instrument is decorated with a carved bull's head. The main production materials of Jiaohu are quite special, but its structural principles are not fundamentally different from other Chinese stringed instruments. It can be inferred that Jiaohu is also a modern minority musical instrument imitated by the Zhuang people using local resources and materials under the influence of other stringed instruments. Because the horn is hard and relatively small, its pronunciation is relatively strong, crisp, and loud, and it is a distinctive high-pitched stringed instrument.

Mr. Li Xike thinks that in the production process of horns, there is a very important link, which is to clean up the garbage inside the horns. If it is not cleaned, the smell of this instrument will be very smelly. The way to deal with it is to empty out the garbage in the horns, soak them in gasoline for more than 24 hours, and then clean them, so that there will be no peculiar smell.

It can be seen from the above content that although the five stringed instruments of the Zhuang nationality are imitated based on traditional Chinese stringed instruments in shape, they have their own characteristics and are different from traditional stringed instruments. Compared with other Chinese stringed instruments

such as the Erhu, the production technology of Zhuang stringed instruments is still very backward. The main production method is still relatively primitive handmade, and the instruments and tools are relatively simple, so the quality of the produced instruments is also uneven. The product is relatively rough.

2. The concept of Creating stringed instruments of Zhuang nationality.

2.1 The design concept of the appearance of Zhuang stringed instruments

The appearance design of the stringed instruments of the Zhuang nationality depends on the production technology level of the instrument maker, the aesthetic taste and habits of the maker, and the quality of the selected production materials and so on.

According to Qiu Chen's viewpoint in his doctoral thesis, there is often no strict unified standard for decorative components that do not directly affect the timbre during the production process of Zhuang musical instruments. The production of Zhuang String instrument is similar: Mr. Zeng Dan believes that the difference in appearance of Zhuang stringed instruments is mainly reflected in the Qintou and the Qintong (resonator), because apart from these two parts, other parts such as the Qingan, Qinzhou, Qintuo, Qinxian, etc. They all have fixed production parameters, and are generally processed in batches in factories, so there is little difference in shape. However, what the Qintong adopts are naturally grown materials, such as horse bones, bamboo, ox horns, gourds, etc. The shapes of these materials are difficult to be unified, and flexible design should be carried out according to the specific shapes of the materials. Zeng Dan believes that the design of the headstock is the freest, because the shape of the Qintou has no effect on the sound of the instrument, but only serves as a decoration, so the design can be very fine or simple, often according to the shape of the instrument. The name and the material design of the Qintong (resonator) correspond to the Qintou. For example, the Qintong of the Maguhu is made of horse bones, and the Qintou is correspondingly carved into the shape of a horse's head. The Qintong of Jiaohu is made of ox horn, and the Qintou is carved in the shape of a ox head. The Qintong of Huluhu is made of gourd, so a gourd-shaped pendant is often added when designing the Qintou. As far as he is concerned, he likes to make the Qintou slightly larger and carved very finely. After the assembly is completed, he also likes to apply a

layer of lacquer on the surface of the instrument to increase the color and brightness of the instrument.

Most of Mr. Li Xik agrees with Zeng Dan's point of view on the design concept of musical instruments, he also believes that the design of the headstock is difficult to achieve a complete unity. In fact, similar situations exist in the design of other types of musical instruments of the Zhuang nationality. However, Mr. Li Xike believes that the Qintou should not be made too large, which will increase the weight of the Qintou and affect the performer's performance. In addition, he is more inclined to use high-density wood, such as rosewood, which has higher brightness and fineness, and is more textured than painted, and its luster is more natural.

2.2 To maintain the characteristics of the instrument.

Mr. Zeng Dan thinks that every musical instrument has its own characteristics and personality, otherwise they would have no value and meaning of existence. For Zhuang stringed instruments, their biggest feature is their unique timbre, which is unique, irreplaceable, and highly recognizable for every Zhuang musical instrument. To maintain the timbre characteristics of the instrument, the key lies in the production materials and production process level. Different materials, especially those used for sounding devices, determine the timbre of different instruments. For example, the resonator of Maguhu is made of the femur bones of cows or horses. Due to the high density of bones and the smaller diameter than other stringed instruments, the sound of Maguhu is crisp and bright, and the sound penetrates powerful. Both high-pitched instruments, the Jiaohu and the Maguhu, use snakeskin as the diaphragm, but the difference is that the Jiaohu uses ox horn as the resonator, and the texture of the horn is relatively hard, but the shape of the horn is curved, and the length of the resonator It is also longer than the Maguhu, so the timbre of the Maguhu is stronger and thicker than that of the Maguhu. The pronunciation device of Huluhu is more different from the previous two. It uses a wooden board with a thickness of about 0.5cm as the vibration panel. The material of this panel must be made of sycamore or fir with low density, and the resonator uses the shell of gourd, due to the large resonance cavity and the large diameter of the vibrating panel, this determines that the calabash has a deep and thick tone, and it belongs to the Chinese musical instrument of the Zhuang nationality. Tuhu's pronunciation device is made of wood from the vibration panel to the resonator, and its

resonance cavity and vibration panel are also larger in diameter, so it is also a bass instrument. The pronunciation device of Zhutonghu is all made of bamboo, and the vibration panel is made of thinner bamboo shoot shells. The sound is deep but strong.

In Li Xike's opinion, raw materials, temperature and humidity will directly affect the structure of the instrument, and some ecological environmental factors will indirectly affect the shape and sound of the instrument. Grassland ecology and farming ecology are two completely different ecosystems. There are large differences in the way of life of people in different ecosystems, which will inevitably have an indirect impact on the structure and sound of musical instruments. For example, most people in the grassland ecology live in a nomadic way and have no fixed place to live. Therefore, musical instruments must be suitable for carrying and can be played on the move from the structural form to the playing method. Residents in the agricultural ecological environment have fixed residences and relatively stable work and rest schedules, so musical instruments are often structurally suitable for fixed performances. For example, the Zhuang area is in an agricultural environment, and their stringed instruments are played in a sitting position.

From this point of view, the most critical factor in maintaining the timbre of Zhuang stringed instruments is to maintain the original material selection method. So why do people in the Zhuang area choose these materials to make musical instruments? Mr. Zeng Dan believes that this is due to the ecological environment in which the Zhuang people live, because the ecological environment plays a decisive role in the development of musical instruments to a large extent. As we all know, the global ecosystem is mainly affected by the physical laws of the earth's climate, and ocean currents and cold currents are the main factors affecting the climate, which determine the characteristics of the ecological environment in different regions of the earth, especially the characteristics of vegetation that have the most direct impact on human life. Early human musical instruments were entirely made of natural materials, which means that vegetation conditions had a direct impact on the source of musical instrument materials. If there is a lack of raw materials suitable for making musical instruments, no matter how skilled a craftsman is, he will not be able to create a unique musical instrument. Bamboo musical instruments are a typical example. Due to limited ecological conditions, there are no bamboo forest resources in Europe (the world's most

abundant bamboo forest resources are in East and South Asia), so it is impossible to manufacture bamboo musical instruments like those in Asia. But Europe is full of forests, so the stringed instruments there are full of spruce fragrance. Furthermore, silk was not produced in Europe, so their early strings were made of sheep intestines. In East Asia, stringed instruments have always used strings made of silk. Climate factors also have a direct impact on the instrument. Faced with the many raw materials provided by nature, musical instrument craftsmen should choose those materials suitable for processing, preservation, and performance according to the local climate conditions to make musical instruments. Here we take the Indonesian gamelan band as an example. We know that the gamelan band uses many copper percussion instruments as its acoustic characteristics. From the perspective of the ecological environment, the reason can be explained as follows: the Java and Bali islands where the gamelan band is located belong to the tropical rainforest. The climate is hot and rainy all year round, and the humidity is high. In this environment, which material is more suitable for preservation and performance than copper musical instruments? What's more, Indonesia happens to be rich in copper and tin, the raw materials for making brass instruments. Of course, the stringed instruments of the Zhuang nationality in Guangxi are no exception, and the materials used to make these instruments are all locally produced species. For example, Guangxi is rich in bamboo and wood, so it is easy to find the wood used in the stringed instruments and the bamboo used in the Zhutonghu. Sufficient raw materials are provided for production; Guangxi has lush vegetation and is rich in gourd melons, which provide the main raw materials to produce gourds; the climate in the south is hot and humid, and there are many pythons in the jungle, which provides material support for the production of vibration devices for certain stringed instruments.

2.3 The musical instrument must be economical and practical.

According to Gao Shu, in the field of Chinese musical instrument production, the tradition of using local natural materials has always been preferred, and the production of Zhuang String instrument has also verified this view. The materials for making stringed instruments of the Zhuang nationality are also taken from common local materials. As Mr. Li Xike said, the wood used to make Qingan, Qinzhou, Qintuo, etc., mostly uses some hard iron wood grown locally. The wood used to make the

vibrating panels is generally local sycamore. Pony and buffalo, common animals in the Zhuang area, provide abundant and cheap materials to produce Maguhu and Jiaohu. Cucurbit gourd, a common local plant of the Zhuang nationality, also provides convenience for making Huluhu. The clever Zhuang people have made these ordinary materials into wonderful musical instruments, and they can play distinctive tones.

Mr. Zeng Dan believes that the use of local natural materials to make stringed instruments of the Zhuang nationality is not only because of the convenience of materials, but also an important reason is that the economic cost of making instruments can be lowered, so that the price of the produced instruments is also relatively low. Because the number of professional Zhuangju troupes in Guangxi is very small, high-end stringed instruments of the Zhuang nationality are not easy to sell. Most of the demand comes from the economically poor rural areas of the Zhuang nationality, where there are many folks eight-music troupes and folk Zhuangju troupes, their musicians are all farmers, and they don't have much money to buy expensive instruments, so stringed instruments made of cheap local materials can well meet their needs. But everything has two sides. Although the use of cheap materials can reduce the cost, it will also affect the overall performance of the instrument, which is not conducive to the development of Zhuang stringed instruments to high-end quality. Overall, it is not conducive to the improvement and development of Zhuang stringed instruments.

2.4 Made by hand.

Why in today's era, Zhuang stringed instruments are still made purely by hand instead of using advanced mechanized production methods?

Mr. Zeng Dan said that most of the musical instrument craftsmen in the Zhuang area are not professional. Because most of them were originally farmers or other occupations. Making musical instruments can only be done in their spare time, which determines that they have little time for musical instrument making, and relatively sporadic. In addition, the investment in industrial production line equipment is too large, and the cost is too high. Folk production artists do not have the economic strength and willingness to do so. Furthermore, modern production methods require professional technical support and the division of labor and cooperation of many personnel, which is even more inconsistent with the reality of the Zhuang area.

In Li Xike's opinion, the particularity of musical instrument shapes and production materials is not suitable for standardized production lines. For example, the resonator of Huluhu is made of gourd, and gourd is a kind of natural plant, and its shape and size are different. In this case, it can only be done by hand, and it cannot be done according to the mechanical unified standard. The other musical instruments, such as the bones for making the Maguhu, the bamboo for making the Zhutonghu, and the horn for making the Jiaohu, are all different and can only be completed by the experience of the maker. In addition, the market demand is too small. As the saying goes, demand determines production, but Zhuang stringed instruments, as a characteristic musical instrument of the Zhuang nationality, have a relatively small spread and audience, so there is less demand for output, and there is no need for large-scale production.

3. Exploration on the improvement of Zhuang stringed instruments.

According to Gao Shu's viewpoint, in the context of industrialization, the standardization of instrument production is an inevitable trend in instrument reform and an inevitable law that should be followed in instrument improvement.

So, what progress has been made in the improvement of Zhuang stringed instruments?

Mr. Zeng Dan said that the improvement of Zhuang stringed instruments was mainly focused on the Maguhu. Before 1949, the form of traditional Maguhu was relatively simple. There was no Qintuo. The Qintou of the instrument was straight rod or simple horsehead decoration. The bow was short. The strings were silk threads. The effective sound area is mainly played in the first position.

At present, the Musical Instrument Museum of the Chinese National Academy of Arts and the Yunnan Provincial Museum respectively have a collection of this kind of traditional Maguhu, and others are scattered in various places.



Figure 30. Zhuang Traditional Horse Bone Hu, Musical Instrument Museum of China National Academy of Arts.
Source: Yang Xiuzhao (2019)



Figure 31. Zhuang traditional Maguhu, Yunnan Provincial Museum,
Source: <http://www.ynnmuseum.cn/detail/4084.html> (2022)

From these two pictures, the traditional folk stringed instruments are far from the modern Maguhu in terms of craftsmanship and materials. The Maguhu in Figure 23 uses a wooden Qingan, but lacks technical design, even a simple shape. There is no

saddle at the bottom, the bow is made of cheap black horsetail, the strings are made of traditional silk strings, and the shaft is made of yellow horns. The Maguhu in Figure 24 uses a cheaper bamboo Qingan, and the bow is also made of black horsetail, and the strings are silk strings.

Mr. Zeng Dan said that after 1949, Liao Jiaxiu and other Zhuang musicians have carried out several improvement experiments on the traditional Maguhu based on their experience in playing the Maguhu and cooperating with the luthiers of the Beijing National Musical Instrument Factory. The specific improvement measures are as follows: Animal thigh bones are directly used to make Qintong or are spliced and bonded with horse bones to increase the volume of the Qintong and increase the volume; lengthen and thicken the Qingan; lengthen the bow or change to the Erhu bow; change to mahogany handle spiral strings shaft or mechanical shaft; switch to steel strings; add a 3cm high Qintuo, etc.

Mr. Li Xike said that in the 1990s, Peng Minxiong, a Guangxi instrument performer, and Man Ruixing, a Beijing instrument maker, jointly improved the Maguhu. The resonance part is made of cut horse bones and mahogany strips. The interior of the resonance has undergone some ingenious acoustic treatment to make the sound soft and mellow, and the treble is better than the Erhu. They have made great contributions to the improvement of the Maguhu, making the improved Maguhu more expressive and can be used as accompaniment, solo, ensemble and concerto instruments, but the improvement of the h Maguhu still has a long way to go. Because the improved timbre and volume are not ideal, the sound of the Maguhu that increases the barrel is heavier and older. With the development of the times, music tends to be more diversified. The existing Maguhu cannot fully adapt to the diversified and wider range of music, and the Maguhu production technology of Beijing National Instrument Factory was not fully developed in Guangxi at that time.

Since the 21st century, Huang Yige, the representative inheritor of the Zhuang nationality's Maguhu art, has made new improvements to the Maguhu. He has developed a series of Maguhu with treble, sub-treble, mid-range, and bass. The premise of development and improvement is to keep the original bone timbre unchanged. In addition, the timbre and volume of the Maguhu were improved to improve its quality. He also improved the appearance, structure, and shape of the Maguhu, and made the

final version of the specific size to better present the comprehensive performance of the Maguhu. The improved Maguhu has excellent production skills, good timbre, and sound quality, and is widely recognized by the performers in the industry, and its influence is gradually expanding.

Compared with Maguhu, the improvement of other four Zhuang stringed instruments, such as Tuhu, Huluhu, Zhutonghu and Jiaohu, is very slow and almost stagnant. What is the reason for this phenomenon? According to the interview with Mr. Li Xike, in the 1950s, China's musical instrument manufacturing industry developed rapidly, and the production level of the traditional stringed instrument Erhu was greatly improved. Erhu and alto Erhu on the market are not only good in quality and beautiful, but also cheap. Because the timbre of the Zhuang stringed instruments is very similar to that of the Erhu, and the timbre of the Zhutonghu, Huluhu, and Tuhu is very similar to that of the alto erhu, many orchestras and Zhuangju troupes directly abandon these Zhuang instruments and use the erhu instead. This caused a severe blow to the production of local stringed instruments, and no one was willing to make these Zhuang stringed instruments anymore. The development of these four Zhuang stringed instruments was interrupted and gradually disappeared from people's lives. It was not until the 1990s that Mr. Li Xike, the inheritor of the Zhuang Eight Music Troupe, restored these musical instruments. Due to being lost for decades, the production level of these four stringed instruments is even further behind that of the Maguhu.

Zhuang folk artists Zeng Dan and Li Xike have done many experiments to improve the Zhuang stringed instruments and experienced many failures. For example, they tried to replace the vibrating panel of the Zhutonghu with snakeskin, but the timbre of the instrument produced by this method is very close to that of the traditional Chinese stringed instrument alto Erhu, and it loses its individuality. Zeng Dan believes that the current problems with the stringed instruments of the Zhuang nationality mainly lie in the relatively similar timbres of Chinese instruments such as Tuhu, Zhutonghu, and Huluhu. Especially in band ensembles, the individuality of the timbre is not prominent enough. The key direction of musical instrument improvement exploration.

From this point of view, if we want to know whether the Zhuang stringed instruments have the value of improvement and whether they have the basic conditions for improvement, we must carry out a comprehensive and systematic, in-depth, and

detailed exploration, collation and research, and fully understand its development history and existing status before we can reach a conclusion. This kind of excavation, arrangement and research should at least include the following contents: what are its unique points in structure and acoustics; The performance posture and technique of musical instruments; The sound quality, timbre, volume, range, characteristics and limitations of the instrument; Performers' identity and skills, their social status; The relationship between musical instruments and local opera, folk art and other folk music, and the role they play in their related folk activities; The performance occasions and audience composition of musical instruments and related tracks. If all this is thoroughly understood, we can judge whether it has the value of improvement from its shape, structure, sound quality, timbre and performance techniques. If the answer is yes, we can start to improve. The basic ideas for the improvement are as follows: The first is not to pursue the complete functions, but to focus on the singing and lyrical characteristics of musical instruments; The second point is to retain its basic shape, sound quality and timbre characteristics, and focus on the improvement of materials and production technology; The third point is to maximize the advantages and avoid the disadvantages. While ensuring the characteristics of timbre and sound quality, we should focus on solving the problems in volume, sound quality and range.

Table 2. Summary of chapter IV.

The Creativity of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.		
Creating methods of five Zhuang stringed instruments	Raw materials for making musical instruments	<ol style="list-style-type: none"> 1) Wood 2) Bamboo 3) Snakeskin 4) Bones (cow or horse) 5) Horn 6) Gourd shell
	Tools required for production	<ol style="list-style-type: none"> 1) Cutting tools 2) Grinding tools 3) Drilling tools 4) tools for fixing snakeskin
	Musical instrument production process	<ol style="list-style-type: none"> 1) Production of Maguhu 2) Production of Huluhu 3) Production of Tuhu 4) Production of Zhutonghu

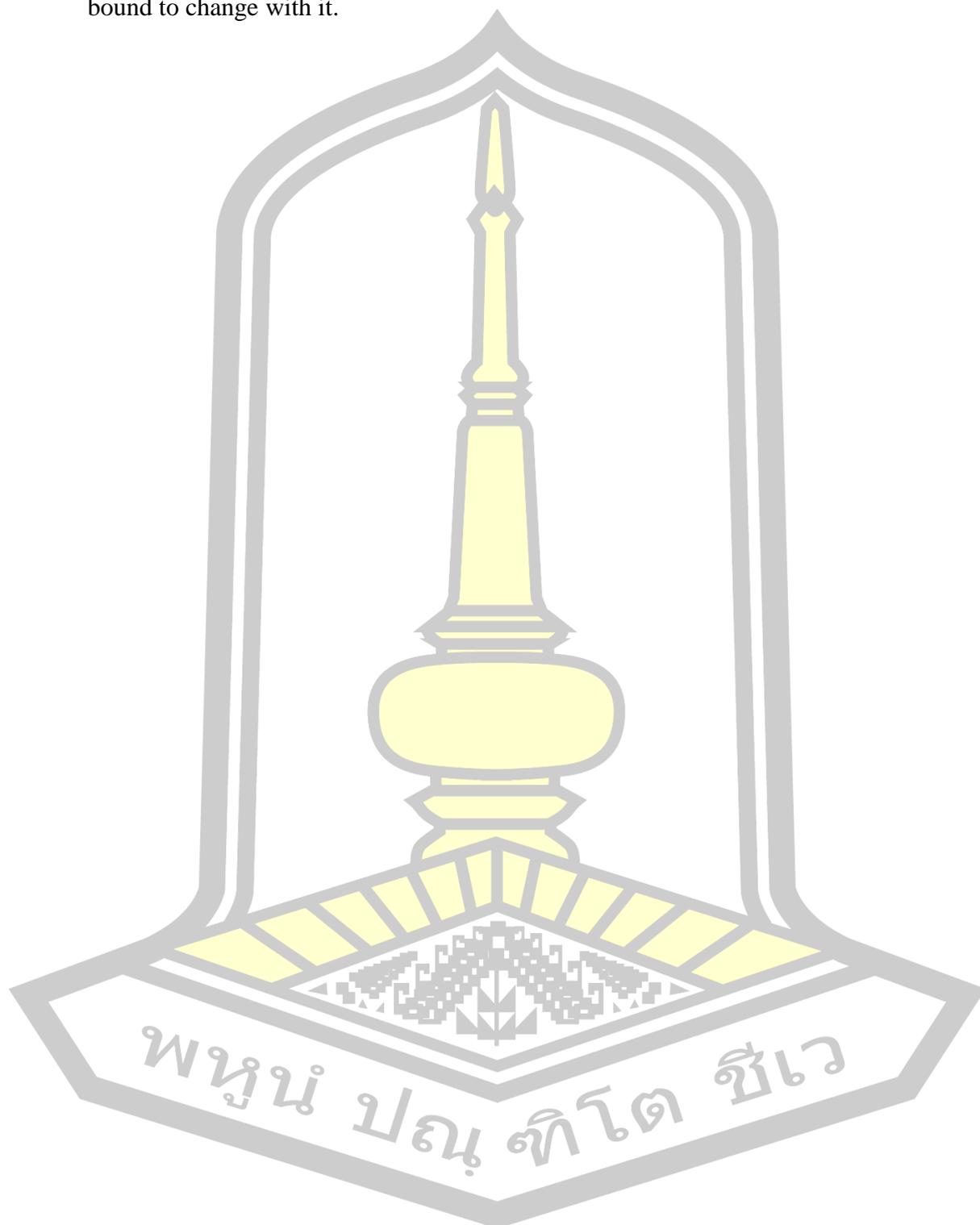
		5) Production of Jiaohu
The concept of creating stringed instruments of Zhuang nationality	The design concept of the appearance of Zhuang stringed instruments	The appearance design of the stringed instruments of the Zhuang nationality depends on the production technology level of the instrument maker, the aesthetic taste and habits of the maker, and the quality of the selected production materials and so on
	To maintain the characteristics of the instrument	The timbre characteristics of musical instruments depend on the materials and craftsmanship. Different materials, especially those used for sounding devices, determine the timbre of different instruments.
	The musical instrument must be economical and practical	Affected by the local economy, the use of local cheap materials can reduce production costs, but also affect the performance of musical instruments
	Made by hand	<ol style="list-style-type: none"> 1) Musical instrument makers are mostly non-professional. 2) Lack of technical and economic conditions for industrial production 3) Some natural materials are not suitable for mechanized processing. 4) Small market demand
Exploration on the improvement of Zhuang stringed instruments	Development status of five Zhuang stringed instruments	The development of the five Zhuang stringed instruments is extremely unbalanced, and only Maguhu has gradually matured after many improvements. The other four stringed instruments, such as Tuhu, Huluhu, Jiaohu, and Zhutonghu, have been interrupted for a long time and developed slowly.
	Four stages of instrument improvement	<ol style="list-style-type: none"> 1) Before 1949, the shapes of these five stringed instruments are relatively simple, there was no Quintuo, the head of the instrument adopts a straight rod or is carved with simple patterns, the bow was short, the strings were silk, and the effective tone was mainly played in the first position. 2) After 1949, the Quintong of Maguhu adopts horse bone splicing technology to increase the barrel and volume; Lengthen and thicken the Qingan; Change to erhu bow; Use steel wire strings; Add the Quintuo. The other four types of string instruments did not develop during this period, and some even gradually disappeared from people's lives.

		<p>3) In the 1990s, the Quintong of Maguhu was made of horsebone and mahogany, and the interior was acoustically treated. During this period, some luthier began to restore several other stringed instruments, such as the Huluhu, Tuhu, Jiaohu, and Zhutonghu. However, the production process was still at a relatively primitive level, just replaced the steel strings and added the Quintuo on the original basis.</p> <p>4) Since the 21st century, the production technology has been improved and the timbre and range has been improved. Especially the Magugu has made great progress, but the overall workmanship of other string instruments is still relatively rough.</p>
	<p>Suggestions for instrument improvement</p>	<p>1) Focus on the singing and lyrical characteristics of musical instruments.</p> <p>2) Keep its basic form, sound quality and timbre characteristics, and focus on the improvement of materials and production technology.</p> <p>3) To maximize the advantages and avoid the disadvantages, while ensuring the characteristics of timbre and sound quality, focus on solving the problems in volume, sound quality and range.</p> <p>4) Promote the balanced development of five stringed instruments</p>

In the research process of this chapter, the research theories of ethnomusicology and Organology were mainly adopted. For example, the research method of ethnomusicology is used to carry out field work and explore the creativity concept of Zhuang String instrument from multiple dimensions; Based on the principles of Organology, this paper conducts a multi-dimensional study on the origin, development, evolution, structure, characteristics, production technology, production materials and other aspects of the Zhuang String instrument.

All in all, the production methods and improvement ideas of Zhuang stringed instruments are all derived from the basic concepts of musical instrument production, and these concepts are also the core concepts gradually summarized in the long history of musical instrument development. The formation of these concepts is based on the unique natural environment and unique cultural ecological environment of the Zhuang

area. When these circumstances change, the core philosophy of instrument making is bound to change with it.



CHAPTER V

The function and role of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region.

According to the topic of this chapter, the researcher interviewed four relevant informants, including Professor Chen Kungpeng, Mr. Li Xike, Ms. Chen Chuncheng and Ms. Xu Yanqin. According to the interview results and survey data, this thesis analyzes the functions and roles of Zhuang stringed instruments in their national cultural system from the following two aspects:

1. The functions of Zhuang stringed instruments.
2. The roles of Zhuang stringed instruments.

1. The functions of Zhuang stringed instruments.

1.1 The entertainment function of Zhuang stringed instruments.

Entertainment is an essential attribute of music. In folk music, the entertainment function has the value of independent existence and is the most direct and convenient way to vent human thoughts and emotions. As recorded in the ancient Chinese book "Shi Jing", emotion will be expressed through words when it is agitated in people's hearts; If words are not enough to express feelings, they will be expressed by sighing; If the sigh is not enough to express feelings, it will be expressed by singing; If singing is not enough to express feelings, you can't help but dance to express them. Humans have created culture for the purpose of enjoying it. They use music to celebrate harvest, courtship, social activities and other social activities, so that people's psychological instincts can be adjusted in social life, and people's feelings can be warmed up in mutual communication, and at the same time, they can also get entertainment. (Zhang Guihua, 2012)

Professor Chen Kungpeng believes that Zhuang folk artists and music lovers often play Zhuang folk stringed instruments for entertainment and relaxation. In the process, they can reduce the fatigue of work, get physical relaxation and spiritual pleasure. In addition, playing a musical instrument can not only entertain yourself, but also play a role in venting emotions and releasing stress. The distress, depression, anxiety, joy, happiness, and other emotions encountered by the performers in real life can be vented.

Mr. Li Xike believes that this kind of entertainment is the favorite form of folk artists, because it is relaxed, free and flexible, and is not restricted by factors such as time, place, number of people, gender, age, performance level and form. They play their instruments to please themselves rather than others, so they often don't care if there is an audience, or how many there are. In terms of form, it can be a solo performance, or several people can play together, or you can sing and play at the same time; you can play at home, or in public places such as parks. Men, women, and children can participate, and the atmosphere is relatively relaxed and comfortable.

Xu Yanqin, a college student, said that in her hometown of Baise, many of the elders in the village can play Zhuang stringed instruments. They often play together spontaneously, and many people like to play at home. Even when they drink tea or chat, they often improvise some music. Their performance level is uneven, but the atmosphere is very relaxed and happy. In the slack season, this kind of entertainment is very frequent. Even in the busy season, they will have self-entertainment during the rest period. The elders told her that playing musical instruments can help them relieve fatigue, relax, and bring joy.

Chen Chuncheng, a Zhuang stringed instrument performer, believes that the intuitiveness, popularity and simplicity of Zhuang stringed instrument performances have attracted the less educated Zhuang people, which not only meets their needs for entertainment activities, but also obtains spiritual enjoyment to a certain extent. With the continuous development of social economy, people's entertainment activities are gradually increasing, but the stringed instruments of the Zhuang nationality are still an indispensable part of the entertainment and cultural life of most of the Zhuang people. For example, in the process of falling in love, young men and women of the Zhuang nationality often express their admiration for their lovers by playing the stringed instruments of the Zhuang nationality.

Mr. Li Xike said that the entertainment function is the initial and most basic function of Zhuangju on the North Road, and it is also the main reason why most people choose to watch Zhuangju and the performances of the Eight Music Troupe. The Zhuang people mostly live in mountainous and forested areas with relatively backward natural and economic conditions, especially in the west of Guangxi where the North Road Zhuangju is spread, and the borders with Yunnan and Guizhou. For a long time in the

past, the traffic here was inconvenient, the information was blocked, and people's lifestyle was extremely simple. Apart from singing folk songs, there were few recreational activities. The intuition, popularity and simplicity of Zhuangju attract the compatriots of the Zhuang nationality who are not highly educated, which not only meets their entertainment and pleasing aesthetic needs, but also obtains spiritual enjoyment to a certain extent. With the development of economic conditions, everything from costumes to makeup, from stage scenery to music and sound effects have been greatly improved, and the stage effects are more enjoyable and pleasing to the eye. The North Road Zhuangju repertoire is richer and more colorful. People laugh out loud or shed tears during the viewing process. Following the emotional changes of the people in the play, the rich emotions of the audience can be vented and expressed to their heart's content. It is precisely because of the leisure and entertainment effects that Zhuangju brings to the local people that the custom of performing Zhuangju and eight-music bands prevails during the slack season, singing festivals, Zhuangju festivals, weddings, and funerals, etc.

1.2 The folk ritual function of Zhuang stringed instruments.

Professor Chen Kunpeng believes that folklore is a knowledge and cognition system created by the people for thousands of years, and it is a cultural pattern that people pass on orally and in their daily lives. This cultural model is not only created by human beings, but also enjoyed by human beings, and it is constantly changing with the development of history and the evolution of life. Folk culture is formed in the long-term development process of a group of communities, and it is the spiritual and cultural symbol of a nation and a country. China has a vast territory and numerous ethnic groups, showing the characteristics of "different customs for ten miles, and different customs for hundreds of miles". The folk culture of the Zhuang nationality is rich and colorful, involving all aspects of life, and these folk cultures have also subtly infiltrated into various works of art, such as Zhuangju art, Zhuang eight-music band and so on. The function of folk rituals has a strong ethnic and folk religious color. This is because in the early history of the Zhuang area, the local production capacity and the level of awareness of nature were relatively low, which made the Zhuang people greatly dependent on and awed by nature. Therefore, they beg for the blessing and protection of gods and ancestors through various folk rituals. In these ceremonies, music is used as a medium for people to communicate

with gods and ancestors, and musical instruments act as magic instruments in the ceremonies.

Ritual music has a wide range of applications in Zhuang folk, it can be summarized into three categories: sacrificial ceremonies, festival ceremonies and life custom ceremonies.

1.2.1 Zhuang stringed instruments in sacrificial ceremonies:

Through the interview with Mr. Li Xike, we can know that in ancient Zhuang areas, productivity was low, and culture was closed, and they were often helpless in the face of natural disasters, birth, old age, illness, and death, which made them full of fear of nature and believed that all things had spirits, and everything in the world was dominated by gods. They also believe that music has a magical power that can transcend language to communicate with the gods and pray to the gods and ancestors in the form of music, in order to help them drive away bad luck and disasters and realize all good wishes. The earliest sacrificial ceremonies used singing, dancing, and playing musical instruments at the same time, in which the musical instruments mainly played the role of accompaniment to the human voice. But later, with the continuous increase of the types of musical instruments, the music has been continuously enriched, and the form of instrumental music performed alone is sometimes used in the ceremony. These ceremonies are generally held on traditional Zhuang festivals for worshiping gods and ancestors and are also often used in funerals. However, with the advancement of science and technology, the cultural and cognitive level of the Zhuang area has improved, and the traditional farming methods have undergone tremendous changes, and people have gradually got rid of the plight of survival. In this case, such sacrifices have become less and less.

Professor Chen Kunpeng said that the sacrificial ceremony of ethnic minorities in Guangxi is a system with various types and functions. Relevant and all-encompassing. Human beings have strong adaptability and creativity in coping with harsh environments, answering doubts, and solving problems, which is fully reflected in ritual beliefs and sacrificial activities. Judging from the sacrificial ceremonies of ethnic minorities in Guangxi, people have almost "solved" all kinds of difficulties and doubts encountered in survival and life through the creativity and application of "gods". In the traditional sense, music, as an important organic part of the ceremony, exists to serve the

ultimate purpose of the ceremony, just like other components such as scriptures, dances, plot performances, etc. From the insider's point of view, ritual music has important functions such as "psychic medium" and entertaining gods; from the outsider's point of view, the ambiguity of music language makes it have an important carrier function.

Through the interview with Miss Xu Yanqin, we can learn that the Zhuang people have long believed in Taoism and witchcraft. If there is a sudden disaster at home, the Zhuang people will go to the local "Xian Po (folk wizard)" and ask her to predict the fortune and resolve the predicament. If important ceremonial activities are held at home, local Taoist priests will be invited to help with the practice or let them inform the procedure of the ceremony.

Ms. Chen Chuncheng believes that these folk beliefs are, after all, a kind of hope that exists in people's hearts. People cannot directly communicate with the gods, so the only way to communicate is to rely on sacred ritual music. They believe that music has mysterious power beyond language and can make people The gods understand the prayers and devotion in their hearts.

1.2.2 Zhuang stringed instruments in festival ceremonies:

Mr. Li Xike told the researchers, in the Zhuang area of Guangxi, in addition to traditional Chinese festivals such as Spring Festival, Mid-Autumn Festival, Lantern Festival, Ching Ming Festival, Dragon Boat Festival, etc., there are also many Zhuang people's own festivals, such as Folk Song Festival, Niuwang Festival and so on. In the celebration of these festivals, people sing and dance, often use the Bayin band, which is mainly composed of Zhuang stringed instruments, to play music, or to accompany songs and dances. People hope to bring good luck and happiness through this way. People hope this way to bring good luck and happiness. In this kind of festival celebration, the function of musical instruments is no single. They have certain folk religious color and certain entertainment function, and the ultimate purpose is to make the festival atmosphere more enthusiastic.

Ms. Chen Chuncheng said that in Guangxi, March 3 of the lunar calendar is a large-scale folk festival of the Zhuang nationality. The ceremony reflects the sanctity of the ceremony, the song fair activities are full of aesthetics, and activities such as grabbing firecrackers, touching red eggs, and throwing hydrangea show the entertainment of the festival. Sacrifice is an important ritual form of "March 3rd" of the Zhuang

nationality in Guangxi. It mainly includes offering sacrifices to ancestors and gods such as Zhenwu, Huapo, and Longmu. The sacrificial ceremony begins with the worship and awe of nature, which is the embodiment of folk beliefs. The sacrificial ceremony expresses respect and awe to the gods and ancestors and prays for the protection of the gods and ancestors. The ritual of communication is an expression of the sanctity of the festival.

Professor Chen Kunpeng said "In the ceremony, the living world and the imaginary world are fused with a single set of symbolic forms and become one world." The specific site of the ritual becomes a "sacred space". In this "sacred space", people can't help putting away the laziness in daily life and can't help but feel a sense of sacredness and sublime in their hearts. The solemn and sacred sacrificial ceremony process, such as the grand sacrificial song and dance performance, the performance of Zhuang stringed instruments, the solemn reading of sacrificial texts, the offering of food, and the devout worship, all make the participants of the ceremony feel strongly emotionally touched, making people's emotions Both posture and movement are put into the ceremony, and a strong sense of sacredness emerges spontaneously. Therefore, sacrificial ceremonies can arouse the sense of sacredness in the inner spiritual level and purify people's hearts.

Xu Yanqin talked about her own point of view on this issue. She believed that singing folk songs is an indispensable way of life for the Zhuang people. Folk songs are indispensable for labor production, romance, festivals, weddings and funerals. Zhuang people like to sing folk songs together at specific festivals. The accompaniment of folk songs is the use of Zhuang stringed instruments. The song fairs are mostly concentrated in spring and autumn, and the "March 3" song fairs are a representative of the spring song fairs.

It can be seen that many festivals sacrificial activities in Guangxi are sacred. Sacrificial activities are a combination of social belief and art of survival, a condensation of living wisdom and aesthetic taste. Various sacrificial ceremonies reflect the beauty of solemn sacrificial ceremonies; In addition to antiphonal songs, there are also performances such as folk dances and acrobatics, which integrate various art categories such as song, dance, music, and folk acrobatics, mixing entertainment with aesthetics.

1.2.3 Zhuang stringed instruments in life customs and ceremonies:

Through an interview with Mr. Li Xike, we learned that the Zhuang area of Guangxi, there are many life customs that are very important to the local people, such as weddings, births, birthdays of the elderly, moving to a new house and so on. These folk ceremonies are long-term folk customs, which are unofficial and non-institutionalized. Among these folk ceremonies, marriage ceremonies, as the most important life ceremonies in folk ceremonies, have transmission and stability. Because the local villagers believe that the wedding ceremony must pray to the gods to bless the couple with happiness and stability after marriage, so the elders will strictly follow the procedure and content of the ceremony passed down from their ancestors, such as inviting the Zhuang nationality to perform in the wedding ceremony. Because of this, the most common daily folk ceremonies performed by the local eight-music band are wedding ceremonies, while birthday ceremonies and new house relocation ceremonies are rarely performed. According to the statistics of Li Xike, the inheritor of Zhuang folk octave art, most of the current performances are wedding ceremonies, and performances for him only account for a small proportion.

The following is a wedding ceremony recorded by Xu Yanqin, a university student of the Zhuang nationality, in his hometown of Jingxi County: At 11:00 in the morning, the Bayin Band came to the door of the wedding host, and the host started to set off firecrackers to show his welcome to the band. After hearing firecrackers, the members of the Bayin Band entered the host's house one after another in the order of wind, string and percussion. The instrument played at this time was "Ma Zou Jie". After the band went to the living room, they continued to play in a standing position. This is the host preparing a banquet for the guests. The banquet in the living room is only for the band members, and other guests can only eat in the open space outside the house. This shows that the band members are the most honorable to the host. guests. After the banquet was set up, the band members began to play in a sitting position and started the welcome session. While playing, they waited for the guests to arrive one after another. The music played during the period includes "Ge Chang Diao" and "Ba Ban". During the performance, the musicians can take appropriate rest according to the situation, and the band members can take the opportunity to eat during the break. At about 12 o'clock, the wedding banquet officially began, and the band began to play the music "Zheng Diao" to set off a warm and joyful atmosphere. After the wedding banquet, the band began to

perform "Cai Cha Diao", and the members of the Zhuang Eight Music Troupe played the roles of gods and tea picking girls. After the performance, the guests offered a toast to the Bayin Band, and as a polite response, the Bayin Band members offered tea to the guests. Afterwards, the band played "Ma Zou Jie" again, the wedding ceremony ended, and the band returned. (Xu Yanqin, 2022)

Professor Chen Kunpeng believes that we should not only pay attention to its composition rules, but also analyze its cultural function and significance from the perspective of musicology in combination with the folk activities it participates in. Throughout the above-mentioned wedding process, the octave of the Zhuang nationality runs through it all the time. Even during the banquet, it still plays non-ceremonial repertoires to set off the atmosphere of the ceremony. In addition to its function of appreciation, it also has a symbolic function. It is the product of the language environment and living environment of the Zhuang nationality and has become an important tool for people to socialize. In folklore activities, due to the participation of octaves, the main body of the activity has changed from the two-way communication mode of "human-human-god" to the three-way communication mode of "human-music-human (god)". The prominent character of the music throughout the event. As the saying goes, "with the help of the sound of strings, the emotions of the performer and the real life of the listener reflect each other, and what the sound of music suppresses is not the heartstrings of the listener!" At present, Zhuang Bayin is actively exploring more transmission methods, protection measures, and its unique "Lehua" to create the hometown of Chinese octave culture.

According to Ms. Chen Chuncheng, in the traditional Zhuangju repertoire, there are many folk customs reflecting love and marriage. The Zhuang nationality has had the custom of "choosing a mate by relying on songs" since ancient times. "Song fairs" are popular in Zhuang areas, and traditional singing activities are held at specific times and places. This is an important means for Zhuang youths to choose a spouse. They sang to each other freely, and through singing, they showed their talents, revealed their inner voices, and exchanged ideas. The Zhuang people's life folk custom of "choosing a mate by singing in antiphonal songs" means that no matter what family background, tall, short, fat or thin, you can find your favorite partner in the process of singing in antiphonal. The process of singing in antiphonal is actually a highly artistic literary activity. In the

traditional repertoire of Zhuangju, the heroes and heroines in many love and marriage dramas will get to know each other through antiphonal songs and playing musical instruments when they first meet.

According to Miss Xu Yanqin, many families also invite bands in the custom of birth ceremonies in the Zhuang area. Newly married women who are not pregnant first ask Hua Po for a child, and then go to Hua Po to express their gratitude after giving birth. In the Zhuang area, women who have just given birth have to stay in the room for a month. During this period, they cannot wash their hair and wear a hat., not barefoot, not in contact with cold water, it is best not to go out. On the twelfth day after the baby is born, invite relatives and friends over for a dinner. At the same time, chickens and ducks are killed, and the cooked chickens, ducks, pork, rice wine, sugar cakes, and apples are used to worship the ancestor shrines and Huapo shrines at home. Then go to worship the land god, the purpose is to tell the ancestors, the land god's own happy event, and at the same time to thank Hua Po for her kindness. On that day, grandma and other sisters-in-law will bring two chickens, eggs, and fruits to visit the newborn and the mother. Grandma and relatives will put the red envelopes prepared in advance on the newborn's pillow to care about the mother's emotions. Grandma should prepare brown sugar hair cake, red eggs, a piece of boiled pork, two chickens, red glutinous rice, two baskets of rice wine, new rice, new clothes and silver bracelets for the child, wishing the newborn a safe and healthy growth. At the same time, before the full moon wine, the in-law's family should also prepare red eggs to give back to the grandmother, and let the grandmother take it home and distribute it to relatives to share the celebration.

Ms. Chen Chuncheng said that with the advancement of science and technology, the change of lifestyle and the improvement of living conditions, there are fewer and fewer sacrificial ceremonies and festival ceremonies. Ritual music is now mainly used in life custom ceremonies. Another important reason for this phenomenon is that among these three types of ritual music, musicians are paid only when they participate in life custom ceremonies, while performances in sacrificial activities and festival celebration ceremonies are not paid at all.

1.3 The stage art function of Zhuang stringed instruments.

Stage art refers to an art form performed by actors on the stage, which mainly includes art forms such as drama, music, dance, acrobatics, and magic. Actors face the

vast audience, and the audience is the most intuitive recipient. In the process of stage performance, not only the superb acting skills of the actors and the reasonable construction of the stage scene by the staff are required, but also the matching of the music and the lighting are required to jointly create a warm stage atmosphere and render the audience's emotions. (Ke Qiuru, 2020)

Professor Chen Kunpeng said that appreciators understand the truth, goodness and beauty displayed in the works through appreciation of stage art works, and thus subtly recognize the value and power of this kind of truth, goodness and beauty, and then improve their world outlook, outlook on life and values. In the process of human development, the increasing abundance of material life makes people gradually pursue the improvement of spiritual life. In leisure life, people are more and more advocating the appreciation of artistic activities, and the construction of spiritual civilization is the general trend, but the main task faced by artists is to meet the aesthetic requirements of urban and rural residents for life. Standing in the "forest of musical instruments in the world", the musical instruments of Chinese ethnic minorities contain the cultural characteristics of different nationalities. The unique timbre and the national temperament and heritage it carries can greatly enrich today's people's spiritual food supply needs for informatization, globalization, and diversification. More importantly, by appreciating, learning, and playing minority instrumental music, it can also provide a fertile soil for the abundance of human aesthetic development.

Through field investigation, we can learn that the Zhuang stringed instruments are mainly applicable to the following three forms of stage performance:

1.3.1 Zhuang stringed instruments used in Zhuangju art.

Professor Chen Kunpeng said that Zhuangju is a dramatic art form created by the Zhuang people. Like other Chinese drama arts, it is a comprehensive performing art form integrating drama performance, music, dance, stage art and other art forms. Among them, music occupies the most important position, because the singing and instrumental accompaniment of Zhuang ju are the most important signs that distinguish it from other types of drama.

The accompaniment instruments used in Zhuangju are mainly divided into stringed instruments, percussion instruments and wind instruments, etc. Among them, the commonly used stringed instruments are Maguhu, Tuhu, and Huluhu. Among all the

musical instruments, the most distinctive ones are the Maguhu and the Huluhu. Their Qintong are made from the big bone of a horse and the thick gourd shell respectively. They have unique timbres and are unique accompaniment instruments for Zhuangju. Maguhu is the main instrument of the whole band. Its tone is high-pitched, crisp, and penetrating, which belongs to the high-pitched instrument. Tuhu and Huluhu belong to the middle musical instruments. When playing, they closely follow the melody of Maguhu and set it off. The layers are distinct and harmonious, producing the artistic effect of multiple voices. The accompaniment music is closely related to the singing aria, using instruments such as Maguhu and Tuhu to accompany the actors and assist in singing. There are various forms of accompaniment, which can not only follow the main theme of the singing aria, but also make impromptu variations on the singing aria according to the needs of the plot, or in some passages. Meditation and processing to achieve the purpose of contrasting with the emotion of the singing.

Ma Ai Diao (Excerpt)

Score production: Wang Guangguo



Figure 32. Excerpt of Zhuangju music "Ma Ai Diao",

Source: Wang Guangguo (2023)

The score example in the picture above is an excerpt of the Zhuangju music "Ma Ai Diao". During the performance, the same melody is used for both singing and string performance. It is suitable for both singers and string players. The only difference is that the string instruments will fill in some notes when the singing stops. This

example is the actual pitch of Maguhu, while the actual pitch played by Tuhu and Huluhu will be one octave lower than that of Maguhu.

1.3.2 Stringed instruments of the Zhuang nationality used in the Ba Yin band.

According to the interview with Mr. Li Xike, Zhuang Bayin is a kind of traditional instrumental music of the Zhuang nationality, which is mainly spread in Zhuang-inhabited areas such as Jingxi County and Debao County in Baise City, Guangxi. The Bayin of the Zhuang nationality are deeply loved by the Zhuang people for their unique national characteristics and artistic charm. Bayin in Chinese means various Zhuang musical instruments made of eight different materials, which refer to: metal, bamboo, wood, leather, melon shell, membrane, bone, leaf, etc. For example, among stringed instruments, the resonant cavity of the Maguhu is made of horse or cow leg bones, the Zhutonghu is made of bamboo, the whole body of the Tuhu is made of wood, and the resonance of the Huluhu The cavity is made of gourd shell, while the resonance cavity of Jiaohu is made of horn. The common feature of these eight raw materials is that they are common in daily life and easy to find. When these ethnic instruments are used in ensemble, the timbre is full and rich, which increases the artistic expression and appeal.

As for the origin of the Bayin, there is currently no documented record, and the age of its formation cannot be verified accurately, but the origin can also be detected from the composition of its instruments and the music played. The Bayin music "Xian Yue Qu" sounds not only the aftertaste of Taoist temple music, but also the rhythm of Cantonese music, and the melody of local folk songs in minor mode. Combining the cultural exchanges brought about by the prosperous commercial activities in the history of Jingxi, we infer that the formation of the Jingxi Bayin is directly related to the introduction of Taoism in the Central Plains after the Tang and Song Dynasties, and the cultural exchanges triggered by the active business transactions. In other words, the Bayin of the Zhuang nationality in Jingxi are the result of the continuous absorption, digestion, transformation, and integration of foreign cultures by the Zhuang ancestors for their own use. Its origin and history are at least three hundred years old. According to oral traditions of several generations of performers, the performance of Zhuang Bayin was gradually invited to follow the dragon and lion dances and stage pavilions

during festivals and played while marching. personnel, so that the performance enhances the artistic appeal. Jingxi Zhuang Bayin has no fixed band until now, it is a hobby of the masses, free combination. Due to the limitation of mastering musical instrument technology and the fact that it is mainly a hobby, it is difficult to popularize the Bayin performance technology, which also increases the difficulty of transmission. According to the survey, Jingxi County used to have Bayin activities in towns and towns, but now except for Xinjing Town, there are no Bayin masters in other places, so the activities have stopped. The musical instrument making skills of Zhuang Bayin have gradually recovered, and there is only one piece of Bayin left, namely " Xian Yue Qu ". It is said that there were other repertoires in the past, but due to various historical reasons, they have been lost. " Xian Yue Qu " has smooth tunes, beautiful melodies, and is easy to remember. The Bayin of the Zhuang nationality is one of the outstanding cultural heritages of the Zhuang nationality. It was born out of Taoist music and handed down by its own characteristics. It is the result of the fusion of foreign culture and Zhuang culture. Because of its unique artistic charm, it has aesthetic value and research value in music and aesthetics.



Figure 33. Zhuang Ba Yin Band,

Source: Wang Guangguo (2021)

Xian Yue Qu (Excerpt)

Score production: Wang Guangguo



Figure 34. Excerpt of Zhuang Ba Yin music "Xian Yue Qu",
Source: Wang Guangguo (2023)

As shown in the figure, the stringed instruments of the Zhuang nationality are most fully used in the Bayin band. In addition to the five common stringed instruments of the Zhuang nationality, there are even some newly imitated bass stringed instruments. Although there are many types of musical instruments in the Bayin band, they mainly adopt the form of unison when playing together. As shown in the example above, all the stringed instruments play the same melody.

1.3.3 Zhuang stringed instruments for solo performance

According to the interview with Chen Chuncheng, a young Zhuang stringed instrument performer, of all the Zhuang stringed instruments, only Maguhu can be used as a solo instrument, while the other four stringed instruments are only used for drama accompaniment or Bayin band. This is because among the five stringed instruments of the Zhuang nationality, the Maguhu is the most distinctive instrument. It has a high-pitched sound, outstanding personality, and the strongest expressive force. The most mature of the five instruments. As a precious traditional folk music culture of the Zhuang nationality, the Maguhu art has great historical significance in the development of the entire Zhuang nationality's music and culture. Maguhu has an extremely important position in the music art of the Zhuang nationality.

Solo instruments are inseparable from the creativity of solo pieces, and this also applies to Maguhu. Maguhu's music creativity is like the development of other instrumental music works. It has roughly experienced several different development stages from adaptation, transplantation, creativity to the formation of a variety of styles. Before liberation, Maguhu, like the other four stringed instruments, was mainly used in Zhuangju and Bayin band. After the 1960s, through the joint efforts of the older generation of composers and performers, he adapted and created Maguhu solo, unison and ensemble works. Maguhu's works in the same period include "Spring Morning in Zhuang Village" and "Happy Zhuang Village" and so on. Since the 1980s, with China's reform and opening, the strong impact of many popular music elements and the change of people's auditory aesthetic concept, the creativity of Maguhu's music is also facing great challenges like the creativity of other national instrumental music. Some professional colleges, group professionals, and folk composers are trying to find a new path that can make Maguhu's music creativity have modern pop music style and creativity techniques, and at the same time have national and regional cultural connotations, to reflect this era. Social spirit. The representative works of this period include "Good Spring by the Youjiang River", the instrumental trio "Feelings on the Murals of Viewing Huashan", and the large-scale symphony suite "Zhuang Tian Ge" with Maguhu as the lead instrument, and the film and TV music "Buluotuo River", "Legend of Maguhu", etc., thus the creativity of music works of Maguhu has entered a higher level and diversified development stage. At the beginning of the 21st century, Guangxi Cultural Audio-Visual Publishing House published the country's first Zhuang Nationality's Maguhu performance album "Magical Maguhu", performed by Chen Kunpeng, which fully demonstrated the artistic charm of the Maguhu and carried forward the Zhuang nationality. Excellent national culture. In 2007, Zou Jian tried to use the Maguhu, a characteristic instrument of the Zhuang nationality, combined with the cello and piano of Western music, and created the trio "The Love of Vine Trees". In 2009, the country's first Zhuangju "Zhuang Jin" also incorporated elements of Maguhu music. These have ushered in an unprecedented new dawn for the creativity and application of Maguhu music, marking that Maguhu art is being more widely used in TV, movies, music, musicals, and many other musical genres, and will be more widely used Attention and recognition from all walks of life.

Spring Morning in Zhuang Village (Excerpt)

Score production: Wang Guangguo



Figure 35. Excerpt of Maguhu Solo "Spring Morning in Zhuang village",
Source: Wang Guangguo (2023)

This is the most famous Maguhu solo music in Zhuang music. It can be seen from the music score above that Maguhu has the stage art function as a solo instrument, but the other four String instrument cannot be used for solo.

1.4 The function of ethnic culture exchange and dissemination of Zhuang stringed instruments.

Any national culture has its cultural soil on which to survive, and the Zhuang stringed instrument culture is no exception. As an important part of the Zhuang cultural ecosystem, it plays an important role as a medium in the process of national cultural exchange and dissemination.

1.4.1 Zhuang stringed instruments are one of the important carriers of Zhuang history and culture.

Yang Xiuzhao and Lu Kegang mentioned in their monographs, the formation and development of any kind of culture are closely related to the development of history. As an important part of national music culture, musical instruments and instrumental music truly record the history and cultural development of the nation. People can see society from musical instruments. History can be discovered. Most of the twelve ethnic groups in Guangxi have ethnic musical instruments representing their own ethnic styles, which reflect the historical development and cultural characteristics of each ethnic group from different angles. For example, the world-famous bronze drum of the Zhuang nationality was

produced in the Spring and Autumn Period of China. It marked that the history at that time had entered the Bronze Age, and it was a symbol of the ancient culture of the ethnic minorities in the south of the Lingnan and southwestern regions. From its exquisite shape and complicated decoration, it is enough to show that the bronze casting technology and production process at that time have developed to a very high level. The various decorations on the surface of the bronze drum truly recorded the social life, economy, politics, and culture at that time. For example, the sun pattern on the drum surface shows that the ancients worshiped the sun; the bird pattern and the frog relief may be related to the totem worship of the ancients; the music and dance patterns also have the meaning of totem sacrifice and prayer; There are patterns of playing bronze drums, playing Lusheng, and dancing all the time. The form of musical instrument ensemble and dance has appeared at that time, and it has reached a relatively high level. Due to the development of history and the changes of the times, the situation of minority musical instruments is also constantly changing. Most of the musical instruments handed down to today have evolved and evolved over a long period of time. In view of the differences in the geographical environment, economic conditions, social customs and cultural conditions of various ethnic groups, the degree of evolution of musical instruments of each ethnic group is not the same. It will also be larger. As far as Guangxi is concerned, the current fact is that some musical instruments of ethnic minorities have been developed and improved. (Yang Xiuzhao, Lu Kegang, etc. 1989)

Professor Chen Kunpeng said that because the Zhuang ethnic group does not have an independent written language, there are very few documents about the stringed instruments of the Zhuang. In this way, the stringed instruments themselves as real objects have become important clues for historical research. In this way, the stringed instruments themselves as real objects have become important clues for historical research. As explained in the literature review section of this article, musicologists Yang Yinliu, Yang Xiuzhao, and Gou Xiaolan all mentioned in their works that traditional Chinese stringed instruments all originated from Xiqin in the Song Dynasty in China. They are like these traditional stringed instruments in terms of playing methods, so it can be inferred that the Zhuang nationality's stringed instruments are imitated by the Zhuang people based on the characteristics of traditional stringed instruments and using local materials.

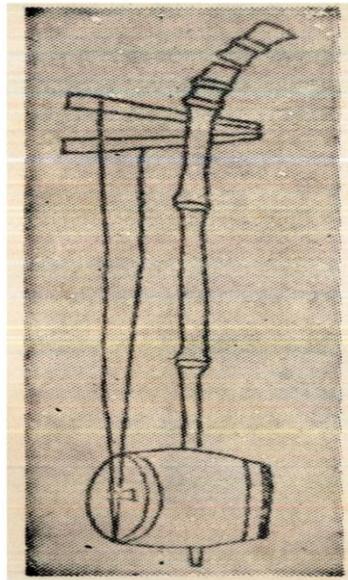


Figure 36. The painting of Xiqin in the Song Dynasty, excerpted from "Yue Shu", written by Chen Yang in the Song Dynasty.

Source: Yang Xiuzhao (2022)

From the picture above, we can see that compared with modern stringed instruments of the Zhuang nationality, the Xiqin of the Song Dynasty is very similar in terms of the overall structure of the instrument and the specific components, which is enough to be strong evidence to support the above point of view.

Ms. Xu Yanqin told the researchers, there are many folk stories about the origin of the stringed instruments of the Zhuang nationality. For example, the Maguhu is pronounced "Randu" (meaning "stringed instrument made of bone" in the Zhuang language) or "Ranlie" (meaning small and high-sounding instrument). Regarding the origin of this name, there is a moving legend in the Zhuang area: Long ago, there lived a clever and pretty girl, A Ran, and a hardworking and brave young man, A Lie, who grew up together. fall in love. A Lie is an excellent hunter, and often pulls up Tuhu to confide his heart to A Ran, and A Ran expresses his affection with beautiful folk songs. A Ran's family has a maroon-red horse, tall and strong, with a shiny coat, and it runs like flying, and is well-known far and wide. One day, the local chieftain wanted to buy the horse with "a lot of money", but when he saw the beautiful A Ran, he ordered the horse and A Ran to be snatched back to the cottage. The chieftain forced A Ran to marry him, but A Ran refused to die and was locked in a room in the backyard. After the chieftain got the horse and the

beauty, he was overjoyed. When he tried the horse, he was overturned by the horse and his head was broken. In a fit of anger, he sent someone to kill the horse, then skinned the horse, picked out the horse's bones and threw them in front of Aran, threatening that if he did not marry him, he would have to be skinned and boned like a horse. Seeing the tragic misfortune of her beloved horse, Aran was deeply saddened. She pulled out some long ponytails, packed up a horse's thigh bone, and asked someone to deliver it to Ariel. Ariel was in agony, so he used the horse's leg bones as the Qintong and the horse's tail as the bow hair to make a unique Maguhu. The sound was high and clear, resounding through the valley. From the beautiful sound of the Maguhu, A Ran learned when and how Ariel rescued her. At night, Ariel climbed over the high wall, rescued A Ran, and shot the chasing chieftain to death. From then on, the two of them left the cottage where they were born, traveled all over Zhuang Township to teach the Maguhu skills, and carved horse heads on the top of the Maguhu as decorations. Later, the beautiful sound of the Maguhu resounded in the villages and villages... To commemorate A Ran and A Lie, people called the Maguhu "Ran Lie", which has been passed down from generation to generation and has been handed down to this day. Of course, the above is just a legend and cannot be used as a basis for research. Since the Qing Dynasty, cultural exchanges among various ethnic groups have become increasingly frequent. After the Erhu in the Han area was introduced to the Zhuang area, the Zhuang people imitated the Maguhu according to their own aesthetics. According to this statement, the Maguhu has been produced for more than 200 years. History.

Although folk stories cannot be regarded as historical facts, these stories and legends are an important part of the Zhuang nationality's history and culture after all and play an important auxiliary role in our comprehensive understanding of the history and culture of Zhuang's stringed instruments.

1.4.2 Stringed instruments of the Zhuang nationality are an important medium of communication within the ethnic group.

Ms. Chen Chuncheng believes that it turns out that a nation's representative musical instrument is a sign that members within a nation seek a sense of national identity. For ethnic minority areas, the lively character makes them all love singing and dancing, and they have made a lot of musical instruments to accompany songs and dances. At this time, special musical instruments have become common instruments for some ethnic minorities. People use musical instruments from time to time to convey their personal

thoughts and feelings to the outside world, such as: the Lusheng of the Miao nationality, the Pipa of the Dong nationality, the Chuangtounin of the Yao nationality, and the stringed instruments of the Zhuang nationality. etc., can convey delicate feelings to the people they like, and help people find love, that is, musical instruments of ethnic minorities have a strong function of social activities. In this way, young men and women of some ethnic minorities often convey their personal emotions through musical instruments, and musical instruments at this time have become an important medium for people's social interaction.

Miss Xu Yanqin said that the Miao people in Guangxi hold a large-scale event called "Da Tong Nnian" during the Spring Festival every year. "Da Tong Tian" is a way of fellowship between local villages. The whole event takes three days and three nights. During the event, reed bands from different villages will perform reed blowing competitions, sing songs, and dance with Lusheng to celebrate the profound friendship between the two parties. Through such activities, cultural and emotional exchanges within and between ethnic groups are strengthened, and people's friendship and cohesion are further consolidated.

Mr. Li Xike said that there are a lot of similar activities in the Zhuang area. Every Zhuang festival, the Bayin Band from all over the country start to go from village to village, exchanging performances. One is to greet each other, but to exchange performance skills. This kind of activity is called in the local area for "You Yuan". Since ancient times, there has been a custom of traveling from village to village to perform. Different villages use musical instruments as bridges to strengthen communication. Song fair is a specific folk activity held by the Zhuang people. Each place will be held at a specific time and place, and each place will have a different time. When the time comes, everyone will go to each village to perform, exchange feelings, and sing folk songs. Zhuangju performances, Zhuang musical instrument performances and other activities, the host village will also set up long tables to entertain people from other places. Song fairs in the rural areas of the Zhuang nationality are very common, and it is the main place for cultural entertainment and love activities for young men and women of the Zhuang nationality. Song fairs are generally held during festivals or during slack seasons. Young men and women put on neat clothes and gather at the song fairs. Young men and women gather in groups of three or four to find their favorite objects, ask and answer questions with singing, and convey and

express with Zhuang stringed instruments. Emotion, this is that music can replace language to express admiration for lovers.

Xu Yanqin said that in her hometown of Baise City, not only the Eight Music Troupe, but also the Zhuangju has become a link of cultural and emotional exchanges between regions and masses in the process of spreading. Its communication function is reflected within the troupe, between different troupes, between actors and audiences, between audiences, and between different villages and different ethnic groups. It takes a certain amount of time to rehearse a Zhuangju, and actors and bands need to constantly work together. After work, the villagers gather to rehearse the performance. Everyone expresses their opinions, communicates with each other, and learns from each other, forming a positive interaction within the troupe and strengthening emotions among the villagers. Even some villagers who used to have conflicts reconciled and became good friends during the rehearsal of the Zhuang drama. The annual Zhuangju Art Festival is the most important performance opportunity for each troupe, and it is also a meeting for exchanges and learning with other troupes. Before participating in the art festival, each troupe will perform a performance in each village as a rehearsal, and then go to the county to participate in the art festival performance. When they return, they will organize a dinner party. On the evening of the dinner party, they will also perform social dramas to thank the masses for their support. If you win a grand prize, you will invite the compatriots in the whole village to dinner; if you don't win a prize, you will only invite the elderly in the village. This is a traditional custom that the troupe has always preserved. Zhuangju performances not only attracted the local Zhuang people, but also compatriots from other neighboring ethnic groups came to watch. They might not understand the Zhuang dialect at first, but after a long time, they could understand and understand it. exchange between. After watching the Zhuang drama performance, the audience couldn't get out of the plot for a long time. Everyone shared their views and ideas with each other, which became a topic of conversation after dinner and inadvertently promoted communication among the masses. With its unique performance customs and performance methods and content close to life, Zhuangju has built a bridge of communication for the masses, and its communication function is obvious.

In the continuous performance and communication, the performance skills, production techniques and classic repertoire of the Zhuang stringed instruments have been

passed down from generation to generation. At the same time, due to the performance and performance, the culture and art of the Zhuang nationality have also been spread by the audience, realizing cultural transmission and exchange function. What is passed on and exchanged is not only the music itself, but also the culture, history, and philosophy of the Zhuang people.

1.4.3 Stringed instruments are a business card for Zhuang culture to communicate with the outside world.

Through an interview with Professor Chen Kunpeng, we learned that the multi-ethnic nature of Guangxi is determined by the variety of ethnic groups immigrating, and the ethnic pattern of large mixed and small settlements effectively guarantees better communication, interaction and even integration of various ethnic groups while respecting each other's living space. It provides conditions for the formation of an inclusive, inclusive, and open national character. Zhuang culture has been influenced by Han culture for a long time, which has become an important factor affecting the formation of Zhuang national character. With the continuous development of society and economy, the communication and contact between various ethnic groups are becoming more and more frequent, and the characters of each ethnic group show different manifestations in the cultural exchange and integration. The stringed instruments of the Zhuang nationality were developed by the ancestors of the Zhuang nationality through learning from and innovating in exchanges with other ethnic groups. The ancestors of the Zhuang nationality actively accepted foreign cultures and made efforts to localize them. This is determined by the open and inclusive national character of the Zhuang nationality. From the eclectic formation process of the Zhuang drum culture, we can realize that the stringed instruments of the Zhuang nationality, as musical instruments that were not first created and used by the ancestors of the Zhuang nationality, have evolved from diversity to integration, and finally gradually integrated into the Zhuang society. The Zhuang nationality is an entity nation with an open and compatible character. At the same time, the Zhuang people also have a mind to tolerate differences and respect each other, which means that the Zhuang people tolerate cultural differences among various ethnic groups in exchanges and learning and respect the cultures of each ethnic group and their national cultural identity. Mutual respect refers to the mutual benefit and coexistence of the Zhuang and other ethnic groups. As guardians of each other, each nation shares the fruits and develops together. In the process of communication and

interaction between the Zhuang people and other ethnic groups, they should pay attention to maintaining their unique cultural traditions and actively absorb foreign cultures. This is of great significance to the spread of Zhuang culture. Only by maintaining the dignity of all ethnic groups can we form a harmonious relationship in which all ethnic groups help each other and help each other, promote mutual trust, harmonious coexistence, and common progress of all ethnic groups, and enhance the cohesion and centripetal force among ethnic groups. When the Zhuang nationality interacts with the Han culture and other ethnic cultures, it does not take the loss of its own cultural characteristics as the premise and price but realizes tolerance and absorbs the excellent elements of other cultures through equal exchanges and mutual appreciation with the cultures of various ethnic groups. The Zhuang nationality has a long history of contact and long-term exchanges with other ethnic groups, and at the same time retains its own characteristics in the history of long contact and long-term exchanges. This kind of inclusiveness is not only in the past tense, but also in the present tense.

Zhuang stringed instruments, in addition to their functions, also act as a catalyst for the development of local economy, art and culture, and have the function of promoting the integration and development of regional resources and enriching the artistic and cultural heritage of ethnic areas. Inheriting and carrying forward the stringed instruments of the Zhuang nationality can not only promote the prosperity of the local cultural and art industry, but also contribute to the improvement of the local artistic and cultural heritage; it also has positive significance in stimulating economic growth and the development of local tourism and agricultural and sideline products economy. The study of traditional ethnic crafts should be combined with regional economic development. Only when good social benefits are produced based on social reality, can the traditional crafts of ethnic minorities show their vitality. Only when local traditional crafts and arts are continuously blended with the production and life of human society, and constantly adapt to the people's ever-changing aesthetic taste, value orientation and life needs, can they keep their roots and innovate, and highlight the national and local characteristics more and more. Traditional craft features. Zhuang stringed instruments rely on local Zhuangju, Bayin band, and other art forms to hold the Red Maple Cultural Tourism Festival, which stimulates the development of the local tourism industry and expands the market for local agricultural and sideline products. The local area is in the subtropical monsoon climate zone, with high

altitude and low latitude, warm and humid climate, and abundant sunshine. The navel oranges produced are thin and juicy, sweet, tender, and refreshing, and are one of the local characteristic agricultural products. In addition to navel oranges, there are also high-quality agricultural products such as star anise, hawthorn, and black pig. The agricultural and sideline products exhibition held during the annual Red Maple Festival and Tourism Festival provides a reliable platform for attracting investment. Actively promote the brand of "Hometown of Maguhu Art of the Zhuang Nationality" and promote the integrated development of traditional crafts, national art, social production, and political economy. It can not only give full play to the economic value of Maguhu, effectively integrate regional resources, but also further enhance the economic and political status of Maguhu art and provide impetus for a virtuous circle of culture and economy.

2. The roles of Zhuang stringed instruments.

The main performance forms of Zhuang stringed instruments include solo, ensemble by eight tone bands, and accompaniment to Zhuangju. When used in different situations, their role is different. Let's analyze in order:

2.1 The Role of Five Zhuang String Instruments in Solo.

Among the five stringed instruments of the Zhuang ethnic group, only the Maguhu is used for solo performance. Professor Chen Kunpeng believes that the reason why Maguhu was able to appear on the solo stage is because of its unique timbre, which is highly recognizable and can also reflect the style of Zhuang music. However, several other musical instruments are very similar in timbre to traditional Chinese stringed instruments, such as the Erhu and Zhonghu. Therefore, people often use Erhu and Zhonghu to replace the other four Zhuang stringed instruments, resulting in slower development of these instruments and no opportunity to appear on the solo stage.

2.2 The role in Zhuang ethnic Bayin bands.

In the Zhuang Bayin band, all five Zhuang stringed instruments are included, but their roles are different. In the Bayin band, the main musical instrument is still the Maguhu, and other instruments are used for accompaniment. The reason for this is that Li Xike believes that it is still determined by the timbre characteristics of the instruments. In the band, although all the string instruments play the same melody, the Ma Gu Hu's timbre is loud and bright, the most prominent, while most of the other string instruments

are in the mid-range, and the timbre is not very prominent. This determines that in the octave band, Maguhu plays the main role, while other string instruments play secondary roles. Due to the fact that Bayin music is only a single melody ensemble form without harmony, there is no division of voice parts. In other words, the role of string instruments in the band is determined by their timbre. Except for the Maguhu, the role of the other four string instruments is the same.

2.3 The Role of Zhuang String Instruments in Accompanying Zhuangju.

In the accompaniment of Zhuangju, Maguhu still plays a dominant role, while other string instruments such as Zhutonghu, Tuhu, Jiaohu, and Huluhu are less important. According to Ms. Chen Chuncheng, except for the mandatory use of Maguhu as an iconic musical instrument, other stringed instruments are rarely used in Zhuang opera, only occasionally used by amateur folk troupes. In some professional theater troupes, except for the Maguhu, other stringed instruments have been completely replaced by the Erhu and Zhonghu.

It is of great significance to understand the roles of Zhuang String instrument. Through the different roles of Zhuang musical instruments in different scenes, we can clearly understand the status of various musical instruments, accurately evaluate the value of various String instrument in different occasions, and then make us clear the direction of musical instrument reform and development, and formulate more scientific plans for them.

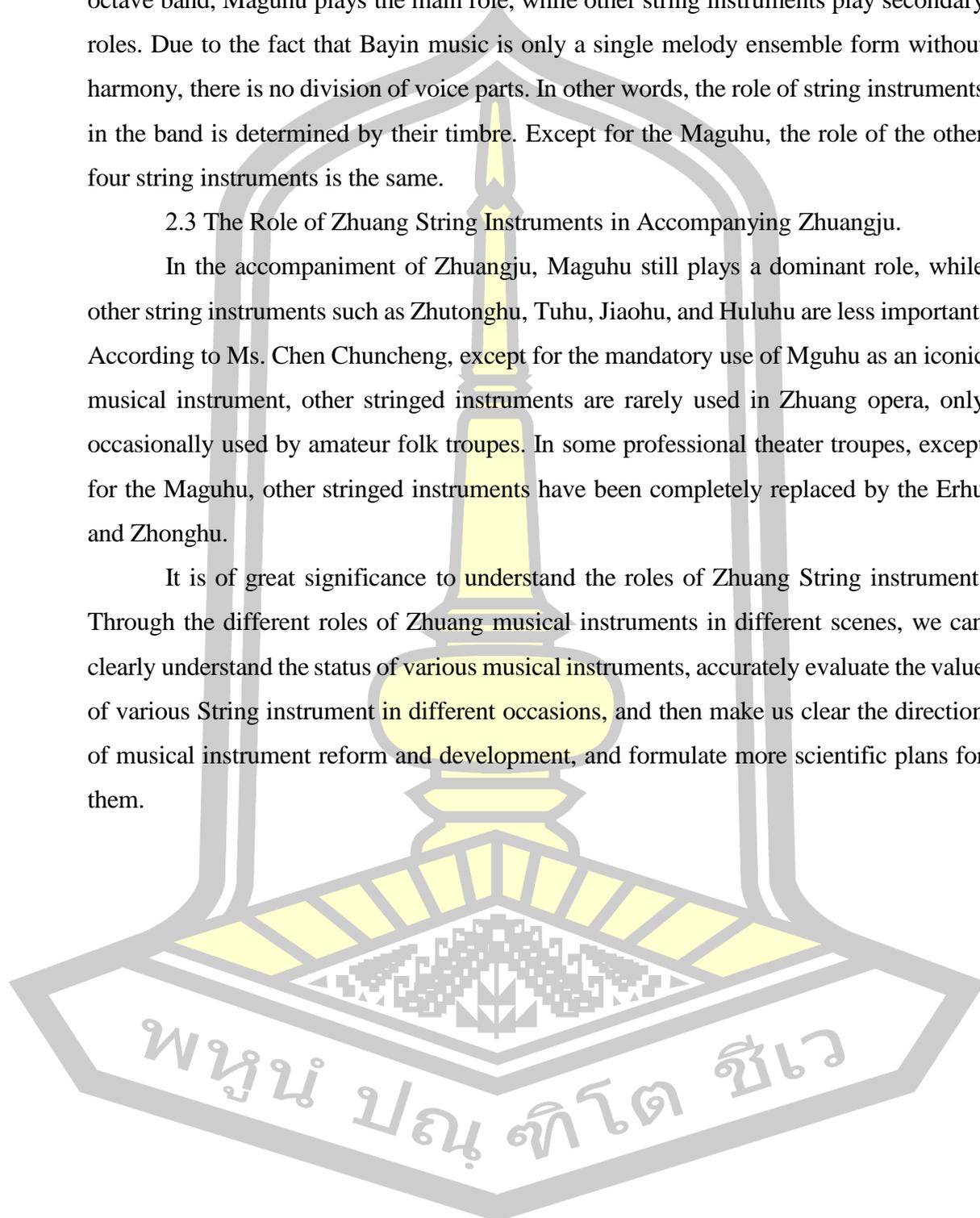


Table 3. Summary of chapter V

The function and role of Stringed Instruments of the Zhuang Ethnic Group in the Chinese Guangxi Zhuang Autonomous Region		
The functions of Zhuang stringed instruments	The entertainment function of Zhuang stringed instruments	The performance form, number of people, occasions, and gender are relatively free, and they are mainly used for creativity activities after work.
	The folk ritual function of Zhuang stringed instruments	1) Used for sacrificial ceremonies. 2) Used for festival ceremonies. 3) Used for living customs and rituals.
	The stage art function of Zhuang stringed instruments	1) Used for Zhuangju art. 2) Used for the Ba Yin band. 3) Used for solo performance.
	The function of ethnic culture exchange and dissemination of Zhuang stringed instruments	1) Zhuang stringed instruments are one of the important carriers of Zhuang history and culture. 2) Zhuang Stringed instruments are an important medium of communication within the ethnic group. 3) Stringed instruments are a business card for Zhuang culture to communicate with the outside world
The roles of Zhuang stringed instruments	The Role of Five Zhuang String Instruments in Solo	Among all Zhuang stringed instruments, only Ma Gu Hu is used for solo.
	The role in Zhuang ethnic Bayin bands	In the Zhuang ethnic Bayin band, the Maguhu is the most important leading instrument, indispensable, and plays the main role. And other stringed instruments play a supporting role.
	The Role of Zhuang String Instruments in Accompanying Zhuangju	When accompanying Zhuang Opera, Maguhu is also indispensable and plays the main role. Other stringed instruments are not important and are often replaced by other traditional Chinese stringed instruments.

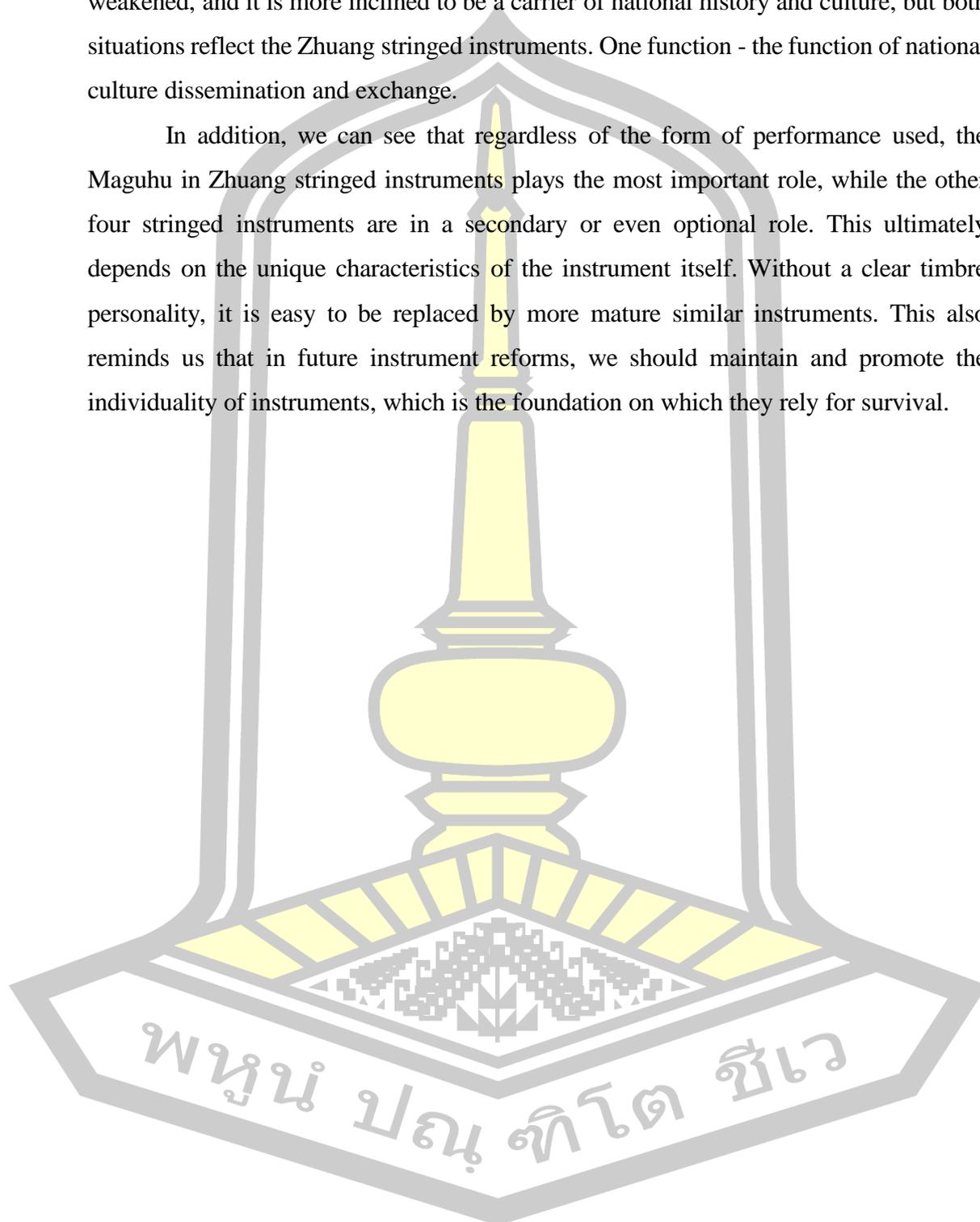
In the research process of this chapter, the research theories of ethnomusicology and Folklore studies are mainly adopted. For example, the investigation and study of folk culture belongs to the social and cultural dimensions emphasized in the field of ethnomusicology, and also belongs to the field of Folklore studies. Based on these principles, this paper explores the influence of folk culture soil on the String instrument

of the Zhuang nationality and the functions and roles of String instrument of the Zhuang nationality in this environment.

Based on the contents of this chapter, we can clearly understand that the stringed instruments of the Zhuang nationality in Guangxi have multiple functions and roles in the entire cultural ecology of the Zhuang nationality. There are several indispensable links in the communication process of Zhuang string music art, namely: performers display musical works through instruments, and then pass them on to art recipients. To the role of a bridge. From all this, it seems that the properties of Zhuang stringed instruments as a musical instrument will not change. However, with the different art recipients, that is, the objects of art transmission, this transmission chain has also undergone some changes. Currently, Zhuang stringed instruments in addition to its inherent musical instrument properties, it also endows some new functions. As mentioned in this chapter, when the object of art communication is the performer himself, that is, when the performer entertains himself by playing the instrument, the Zhuang stringed instrument is both a musical instrument and a tool for the performer to entertain himself at this time, the musical instrument has an entertainment function. When the object of art communication is the ancestors or gods of the Zhuang nationality, musical instruments become the medium of communication between people and gods and become the common psychological sustenance of the whole ethnic group. Mysterious power, at least in the minds of the Zhuang people, and the musical instruments currently have the function of folk rituals. When the stringed instrument is displayed as a stage art, the audience, or listeners, who are the object of art acceptance, aim to appreciate the music performance, to obtain an artistic aesthetic experience. Currently, the instrument returns to its basic attribute, that is, the instrument itself. Currently, it has the function of stage art. Different from the previous cases, when the stringed instruments of the Zhuang nationality serve as a medium for cultural exchange and dissemination within the ethnic group or between the Zhuang nationality and the outside world, the cultural transmission chain presents diversity. The essential property of being a musical instrument exists, and the two ends of the transmission chain are still the relationship between the performer and the audience. However, when the Zhuang stringed instrument is displayed in a museum as a historical relic or as a handicraft to the audience, its mission changes from disseminating music to disseminating national history and culture, and the two ends of the transmission

chain are no longer performances. In this case, the attribute of musical instruments is weakened, and it is more inclined to be a carrier of national history and culture, but both situations reflect the Zhuang stringed instruments. One function - the function of national culture dissemination and exchange.

In addition, we can see that regardless of the form of performance used, the Maguhu in Zhuang stringed instruments plays the most important role, while the other four stringed instruments are in a secondary or even optional role. This ultimately depends on the unique characteristics of the instrument itself. Without a clear timbre personality, it is easy to be replaced by more mature similar instruments. This also reminds us that in future instrument reforms, we should maintain and promote the individuality of instruments, which is the foundation on which they rely for survival.



CHAPTER VI

The guideline for preservation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region.

As a traditional musical instrument with a unique charm and a long history of the Zhuang nationality, stringed instruments still retain a sense of mystery. Folk artists continue to play stringed instruments, tell stories about stringed instruments, and teach stringed instrument performance skills, hoping that it can be better inherited. The stringed instruments of the Zhuang nationality are facing development pressure from many aspects such as the social environment and economic conditions in the new era. To ensure the sustainable development of these instruments, measures should be taken actively to promote the construction of various aspects and effectively protect and inherit the outstanding characteristic instruments of ethnic minorities. Regarding this issue, this chapter will discuss from the following aspects:

1. Current situation and difficulties of the preservation of Zhuang stringed instruments
2. Suggestions for the preservation of Zhuang stringed instruments

According to the above questions, the researcher interviewed six informants: Professor Chen Kunpeng, Mr. Li Xike, Mr. Zeng Dan, Mr. Huang Yige, Ms. Chen Chuncheng and Miss Xu Yanqin. The occupations of the six informants are different, which also helps us to understand the problems in the development of Zhuang stringed instruments from a more comprehensive perspective.

Due to the separation of production technology and performance skills of Zhuang stringed instruments, the transmission of Zhuang stringed instruments is divided into two parts: performance and production. The performers are divided into troupes and individual enthusiasts, and the producers are divided into official non-heritage inheritors and folk luthiers. There is less communication between the two groups of performers and producers, and their respective development is relatively slow. Due to the lack of support from all aspects, the transmission and dissemination of Zhuang stringed instrument production technology and performance skills have encountered certain obstacles.

1. Current situation and difficulties of the preservation of Zhuang stringed instruments

1.1 Current situation and difficulties of preserving the creating technology of Zhuang String Instruments.

The vigorous development of national musical instruments is inseparable from highly skilled performers and luthiers who are constantly improving the instruments behind them. Usually, in music appreciation, the audience will pay attention to the way of music presentation, the content of music performance and the performers. Craft and instrument maker. There is a Chinese proverb "If a worker wants to be good at his work, he must first sharpen his tools." Musical instruments are not pure handicrafts, they integrate people's vision, hearing, touch and emotion. Different materials can create musical instruments with different timbres and qualities. The same production materials, through the integration of different producers into their own experience and aesthetic feelings, will also create musical instruments with completely different styles and sound quality. However, in recent years, unprecedented difficulties have been encountered in the production and transmission of Zhuang stringed instruments, mainly in the following aspects:

1.1.1 The number of luthiers of Zhuang stringed instrument has dropped sharply.

According to Professor Chen Kunpeng, the transmission, dissemination, development, and evolution of national culture are inseparable from inheritors. In ethnic areas of our country, the inheritors of ethnic culture have always been technicians and intellectuals with certain skills in traditional society. Due to the limitations of class, social status and even social development level, school education has not been very good. In popularized areas, school education is still unable to undertake the responsibility of inheriting national culture. Currently, the inheritors of national culture are a general group. Although scholar An Xuebin explained the cultural inheritors, he believes that cultural inheritors specifically Excellent elements who collect, research, inherit, disseminate, and innovate national culture and play an important and distinctive role in cultural development. But more often, a group of people representing the transmission of national traditional culture are silently doing the same thing, living in the society, in the village, "In village life, the creativity and transmission of art is mainly to satisfy the

spiritual requirements of the villagers are closely integrated with the various practical activities of the people." However, this kind of creativity and transmission must have a relatively stable core of cultural characteristics to ensure that it maintains the inherent characteristics of the national community. This is persistence, the transmission and expression of collective memory, and the identification of ethnic group identity.

However, the current predicament is that most of the stringed instrument makers in the Zhuang area are old people. Many of them have passed away, or they are too old to engage in production work, resulting in a serious shortage of musical instrument makers, and even the danger of extinction. When the author visited Jingxi County, Baise City, I learned that there are only two local luthiers who have clearly mastered the production technology of Zhuang stringed instruments. One is Huang Yige, the provincial inheritor of Guangxi Maguhu art. He is good at making Maguhu and has excellent playing skills. The level of the Maguhu is second to none in the local area. He said that he only intends to pass on the making skills of the Maguhu to his apprentice Chen Shaolong. The second one is Nong Zhiguang. Before he retired, he was very interested in the string music art of the Zhuang nationality. He not only joined the Zhuangju troupe in the county, but also mastered the production technology of musical instruments through his own study and exploration. He stated that he had no apprentices, his children had their own jobs, and he had no intention of inheriting the craft of making musical instruments. In Jingxi County, which is adjacent to Debao County, there are only two musical instrument producers left, namely Mr. Zeng Dan and Mr. Li Xike. In the summer of 2022, Mr. Zeng Dan's musical instrument production room was hit by a flood, and he was temporarily unable to engage in musical instrument production. However, Mr. Li Xik was 73 years old, and it was difficult to continue his high-intensity work.

Why is there no successor in the string production industry of the Zhuang nationality? Mr. Huang Yige believes that there are many reasons. First, with the acceleration of urbanization in China, many young people yearn for a rich and colorful city life, and most of them leave the countryside to work in cities. The Zhuang people's rural areas are economically backward, and the loss of young people is even more serious. Secondly, the economic income of making stringed instruments of the Zhuang nationality is too low to meet the survival and consumption needs of young people. For example, making a Maguhu requires meticulous processing from material selection, production,

combination, polishing, and decoration. In addition, the selection of bone quality and the production of horse bone grinding are extremely demanding, so it may sometimes take two or three years to make a well-crafted Maguhu. Most of the producers have given up the idea of making a living in this industry due to the excessive cost and energy expended and the lack of huge market profits. From this point of view, the transmission of Zhuang stringed instrument making skills is worrying.

1.1.2 The creating technology of musical instruments is backward.

Mr. Li Xike said that in today's highly industrialized musical instrument production industry, the main method of Zhuang's string music production is still the primitive manual workshop. The production technology and equipment are relatively primitive and backward, not only the production cycle is long, the output is low, and the quality is also uneven. In addition, there is no unified industrial production standard, and musical instrument producers rely entirely on personal experience to produce, which greatly limits the production level of Zhuang stringed instruments. Most of the current stringed instrument producers of the Zhuang nationality have not studied professional musical instruments, and are seriously lacking in the knowledge of physics, materials, and acoustics necessary for the modern musical instrument production industry. Therefore, the overall performance of the instruments produced is different from other traditional stringed instruments. far.

1.1.3 Raw material shortage

Mr. Zeng Dan said that for Zhuang stringed instruments, the increasingly prominent problem this year is the shortage of production materials. For example, the materials that are in great demand in production are mainly wood, python skin, and bones, especially wood and python skin, which are even more scarce materials. Because wood is the most consumed in the production of stringed instruments, such as rosewood and mahogany. A variety of expensive furniture and other wooden goods. Therefore, the rate of regeneration of wood cannot keep up with the rate of consumption and demand. Some large lumber manufacturers began to hoard lumber raw materials, which exacerbated the shortage of lumber. Similarly, python skin is also a very scarce material. Since wild pythons are protected animals, most of the stringed instruments now use the skin of farmed pythons. Moreover, traditional Chinese musical instruments such as Erhu, Zhonghu, Gaohu and other stringed instruments are all It is made of python skin. It is

conceivable that its demand will have a huge impact on the biological environment. According to a conservative statistic from the China Musical Instrument Information Center, more than 100,000 pythons will be hunted and killed in a year. Leather has become a very scarce resource. The pony horse bone used for making musical instruments, or a high-quality Qintong of Maguhu is even more precious. Now the number of Debao pony horses in stock is less than 500, accounting for one ten thousandth of the total number of horses in the country. One or less, this is enough to determine the preciousness of the Debao pony. Therefore, many producers use beef leg bones instead of horse bones.

1.1.4 The market demand is too small.

Mr. Huang Yige believes that one of the important reasons for the extinction of the Zhuang stringed instrument production technology is that the market demand is too small to produce on a large scale, let alone find an appropriate market. Therefore, more production masters have found other jobs, and have no intention of engaging in the production of Maguhu. Stringed instruments of the Zhuang nationality are characteristic musical instruments in the Zhuang nationality area, and their circulation range is basically only in the Zhuang nationality area. There is a big gap between the market demand and the erhu and other instruments that are popular across the country. Coupled with the decrease in performance groups and string lovers in recent years, the demand is getting smaller and smaller.

Professor Chen Kungpeng said that Mr. Huang Yige from Debao County, Baise has devoted himself to the organization and creativity of local folk music art for many years. In recent years, he has repeatedly contacted the local government, Guangxi Normal University, Baise Normal University, Guangxi Art Institute and other related units, hoping to cooperate with to cooperate with them to protect the local folk music culture as soon as possible. Huang Yige once said in the five-year development plan for Zhuang stringed instruments: "If someone wants to learn the craft of making musical instruments, I will teach them without hesitation." However, Mr. Huang Yige alone There are indeed too many difficulties and hardships for one person to complete this complex and arduous task of protecting and inheriting national culture.

1.2 Transmission status and difficulties of Zhuang string performers.

There are very few professional groups and individuals engaged in the performance of Zhuang stringed instruments. Because the playing method of Zhuang stringed instruments is basically the same as that of Erhu, many professional groups often play Zhuang musical instruments concurrently with erhu players. For now, Zhuang stringed instrument performers are mainly concentrated in Zhuang folk art groups and individuals, such as folk Zhuangju troupe and Bayin band. Since most of their occupations are farmers, not only the performance level is generally low, but also the personnel are unstable. With the downturn of the folk performance market, the transmission of performance talents has also encountered greater difficulties, mainly manifested in the following aspects:

1.2.1 Zhuang stringed instrument performers are aging seriously.

According to Mr. Huang Yige, very few young people learn to play Zhuang stringed instruments, and the elderly are the main force currently mastering this skill. Take the Qingshui Zhuangju Troupe in Debao County as an example. There are 18 members in the troupe, all of whom have retired or are about to retire. The average age of actors in the troupe is over 60 years old. There are few young people in the town, and even fewer are willing to learn and learn well. The stringed instruments of the Zhuang nationality are essential instruments for Zhuangju performances, but nowadays there are very few people who can play these instruments. When performances are needed, most amateur troupes can only barely complete the performances by borrowing bands from each other. On the other hand, it is manifested in the lack of hardware conditions such as simple venues and incomplete equipment. As far as Debao County is concerned, in the 1950s and 1960s, a total of 96 amateur Zhuangju troupes (teams) were active in counties, towns, and villages. Every major festival or event, they performed on stage, forming the Zhuangju Art "blossoms everywhere". Nowadays, not only are there few performances by professional troupes, but most of the performances by amateur troupes are struggling due to lack of funds and venues, and very few can perform normally. The situation of more than 20 amateur theater troupes in Jingxi is basically the same. It is understood that a complete performance of a Zhuangju needs a lot of material support such as musical instruments, costumes, makeup, props, and stages to be realized. And these amateur troupes are extremely lacking.

Mr. Li Xike also introduced that the members of the Jingxi Zhuang Bayin band are also elderly people. As the leader of the band, he himself is 73 years old, so he is more worried about the future development of the band.

1.2.2 Lack of professional Zhuang stringed instrument teachers.

According to Chen Chuncheng, a Zhuang stringed instrument performer, compared with other kinds of musical instruments, stringed instruments have a certain degree of difficulty in learning. Cultivating a string performance student puts in more energy and takes a longer cycle to become a talent. With the expansion of the teaching scale, the problems of lack of teachers and uneven levels become more prominent. The transmission of Zhuang stringed instrument performance skills is the same as many other folk arts in China. The biggest feature is the use of oral teaching in the form of teaching, lacking scientific teaching methods and systems. At the beginning of 2003, my country implemented the Chinese national folk culture protection project, and the government began to pay more attention to the protection of national folk traditional culture, so a lot of basic work was done. However, a large number of precious folk cultural heritages in our country are still facing the situation of shrinking day by day. The cultural heritage passed down from hand to mouth, oral tradition and behavior is disappearing, and many traditional skills are on the verge of extinction. In addition, the "oral teaching" from master to student is to comprehend its gist in the heart. As a result, there are inevitably deviations or even ambiguities in the understanding in everyone's mind. Reference, and in a sense, different genres are drawn invisibly. As a result, the sorting, protection and dissemination of Zhuang stringed instruments and their music have been subject to distortion and variation in varying degrees.

Ms. Chen Chuncheng said that few people have received systematic training nationwide and have a professional and scientific understanding of performance techniques. The timbre of Zhuang stringed instruments and the singing and melody of Zhuangju are very well integrated. To play Zhuang stringed instruments well, you must be able to deeply understand the feelings of Zhuang people embodied in Zhuangju and integrate them into the performance. In this process, the performer is required to break through the barriers of national language, understand the Zhuangju with Zhuang language as the performance language, keep up with the rhythm of Zhuang pronunciation, and sympathize with the performers of Zhuangju. Based on the above requirements, there are

very few candidates who meet the standard of excellent performer. The musicians in most Zhuangju troupes in Zhuang areas are not fixed. For example, sometimes in a temporary performance, the Zhuang stringed instrument players in the team cannot attend because they cannot allocate time in time, and the head of the group will invite other musicians who can play erhu to play the Zhuang stringed instrument. This practice does not mean that Zhuang stringed instrument performance does not require professional training and professional quality, but rather reflects the amateur nature of folk opera performers. The lack of understanding ability and professional performance of talent in the troupe has hindered the wide spread of Zhuang stringed instruments among the people.

1.2.3 Campus promotion lacks sustainability.

According to Mr. Huang Yige, the inheritor of Zhuang stringed instruments, although the government has also given support from top to bottom in the corresponding aspects, in June 2009, the youth Zhuang string art training base was unveiled in Debao County, Guangxi. In 2010, the construction of the Zhuang String Art Center Training Base Building was started in Debao County, Guangxi., carrying out string music into campus activities, etc., but due to many difficulties in the process of transmission, the status quo of its lost faults has not changed much. Since the introduction of Zhuang stringed instruments into the campus, a new generation of musical instrument transmission learners have emerged on the Debao campus. These learners started learning in elementary school, but only a few continued to learn in middle school and university. There are three reasons for this: First, the pressure on students to study increases year by year after they enter middle school, and they cannot consider the study of musical instruments and culture courses, and they give up halfway before they can achieve success. The second is that there are currently no colleges and universities offering Zhuang stringed instrument performance majors, and they think that learning stringed instruments is useless for further education, so they will not continue. Third, many parents do not have enough understanding, have not established good cultural self-confidence, and have not encouraged and supported their children to learn and inherit such an excellent culture. Many parents believe that studies are the priority, and even oppose their children to continue learning musical instruments. These interventions will interrupt the transmission chain of the local Zhuang string art.

In Debao County, several primary schools including Experimental Primary School, Jianhe Primary School, and Yunshan Primary School have carried out pilot teaching of string music into the campus. The pilot schools arrange musical instrument courses in the weekly interest sports classes that students self-enroll and choose, mostly on the third or fourth day of the week, fifth grade students. In addition, the county also opened string instrument training courses for primary and secondary school music teachers, but unfortunately only one session was held. It has not been implemented in middle schools yet, and the teachers who teach the courses are also uneven. The assessment mechanism needs to be improved, and the implementation of the acceptance of learning results and transmission effects is not strong enough.

1.3 The current situation and difficulties of the spread of Zhuang's string music culture.

1.3.1 Insufficient publicity and funding from the government.

According to Mr. Huang Yige, as the birthplace of the string music culture of the Zhuang nationality, Debao County should make full use of the local cultural name card of string instrument art. However, it was found from the field visits that the local publicity of string music culture has not been particularly effective, and even the residents do not have a high level of awareness of it. Second, government funding is insufficient. Musical instrument teaching has less investment in hardware facilities and teachers, which is also the reason for the bottleneck in the development of musical instruments. Therefore, it is the key point to promote the development of string art that the government should increase investment in publicity and create a "cultural business card" and "cultural brand" belonging to the people of Debao. In addition, the teacher assessment system needs to be improved urgently. There are no systematic textbook regulations, and there are also problems with the evaluation of the qualifications of teachers who teach musical instrument art, resulting in uneven levels of teachers.

The government's protection, transmission, and development of Zhuangju, Bayin band, and other literary and artistic groups, which are the main channels of transmission of Zhuang stringed instruments, is a systematic project involving a wide range of aspects, but there is no doubt that the government should play a leading role. Because the government's emphasis is directly related to the effectiveness of cultural heritage protection and development. Comparing the situation in Debao and Jingxi

counties, it will be confirmed. The government of Debao County has always attached great importance to the protection and transmission of cultural heritage. The county's financial department allocates 100,000 yuan to the Zhuang string art inheritors each year, and 240,000 yuan to support 48 amateur theater troupes. As the specific lead unit for cultural heritage protection, the County Cultural Center has 2 intangible cultural heritage protection specialists. There is a training place with a construction area of 80 square meters in the museum, which is specially used for carrying out intangible cultural heritage activities; outside the museum is a training center with a construction area of 280 square meters, which has two classrooms, a musical instrument and South Road Zhuang Showcase of real dramas. In addition, the museum will also use two-thirds of the free opening funds allocated by the central government each year to support activities such as excavation and transmission of projects that have entered the "intangible cultural heritage" protection list in this county. Because of this, the Zhuangju in the county is doing well at present, and they can win the first and second prizes in the Zhuangju competition in the whole region every year. The fly in the ointment is that although the county government and the Bureau of Culture and Sports attach great importance to it, the support and cooperation of the township governments are not enough. Although Jingxi County has conducted a comprehensive survey of Zhuangju on South Road in recent years, initially sorted out the materials of Zhuangju, and organized amateur Zhuangju troupes from all over the county to perform, but the funding is not normal, and the protection measures are not in place. For example, there is no clear annual budget for the troupe's performances, purchase of equipment, training of screenwriters, and training of actors, and there are no clear requirements for the tasks and specifications of the troupe's performances. Therefore, the county's amateur troupe is not as fast as Debao's.

1.3.2 The performance art form and content of Zhuang stringed instruments are outdated.

Mr Zeng Dan said that at present, the performances of Zhuang stringed instruments are still dominated by folk amateur groups such as Zhuangju and Bayin band. However, due to the lack of innovation in the form and content of performances of these cultural groups and their obedience to stereotypes, the loss of audience is serious, especially young people. Few people enjoy this art form. Taking the Zhuangju Troupe as an example, not only the actors are aging, but the audience is also aging. Whenever the

Zhuangju troupe rehearses or performs, those who can take the initiative to watch and are interested are basically old people over the age of 50, while young people under the age of 30 basically lack interest in Zhuangju. do not want to see. It's no wonder they, because Zhuang drama scripts are old-fashioned, and the methods are outdated. Traditional Zhuangju repertoires, whether it is performing Zhuang stories, or transplanting or adapting Han repertoires, are mostly based on the theme of showing the love stories of gifted scholars and beautiful women, and there are not many changes in costumes, singing, performance, etc. Young people will feel that Zhuangju the content of the performance is far from their real life, and the artistic expression of Zhuangju is not consistent with their aesthetic taste.

1.3.3 Impact of contemporary new media.

Xu Yanqin, a Zhuang student, said that as young people, few people are interested in Zhuang stringed instruments and their music, because there are too many modern art forms and entertainment methods, and young people like fashion and new things.

Professor Chen Kunpeng talked about the reasons for this phenomenon. In today's era, not only production technology is modernized, but also lifestyles, entertainment methods, and values are "modernized". First, these "modern" methods are bound to "divert" the audience. In the past, folk literature and art groups developed slowly in a closed-door environment. Today, the changes in the environment of the times have a strong impact on each group. Not only have there been more exchanges and competitions between various dramas, but there are also TV, film, Internet, Various leisure, and entertainment methods such as games, concerts, and sports competitions are "competing" for audiences. In an era with so many charms, audiences must of course choose entertainment methods and appreciation objects according to their own preferences, which makes the folk-art groups on which the Zhuang musical instruments depend must fall into a predicament. Second, these so-called "modernizations" are both good and bad. For example, pragmatism and hedonism will make people enthusiastic about "super-cool" fast food culture and pop art, while neglecting or even dismissing traditional folk art. Because of this, the younger generation is less interested in Zhuangju art, and even regards it as "local custom" and is ashamed to pay attention to it.

1.3.4 The communication channel of the Zhuang string art is backward and single.

Young performer Chen Chuncheng thinks that, before the Internet was widely used, it mainly relied on folk art troupes or troupes to perform in villages. Although there are people who can play stringed instruments in every troupe, there are fewer people who are proficient in playing stringed instruments. Due to the lack of recording awareness, recording equipment and technology, the relevant literature and film and television materials of Zhuang string performance and production technology have not been effectively preserved. In the process of Zhuang stringed instrument production and performance creativity, some knowledge cannot be accurately expressed in words, data, images, and languages. There are very few channels for future generations to learn string performance and production skills except for personal teaching, and the dissemination and development of musical instruments is quite limited.

In the information age, the exposure of string music as the voice of the nation on the Internet is insufficient. In the initial stage of excavating and protecting the string music culture of the Zhuang nationality, the Debao government provided financial support and media publicity for its development like a "flash in the pan", but it was only limited to local news media in Guangxi. For example, reporting news about Zhuang stringed instruments performances, writing interview news, etc. in local news accounts. After 2015, the government and campus cooperation did not continue to follow up. The past five years have been an era of short video explosions. Many short video platforms have emerged. All walks of life have used short videos and other online social platforms to promote their products and achieved good results. However, the stringed instruments of the Zhuang nationality failed to catch up with the explosion of short videos in time and did not achieve efficient exposure. Neither the inheritors of musical instruments nor their direct disciples have personal or dedicated short video platform accounts to promote Zhuang stringed instruments. Some musical instrument lovers also occasionally post promotional videos about Zhuang stringed instruments on other social platforms, but they are mainly for Zhuangju, and there are fewer videos dedicated to promoting musical instruments.

1.4 Current situation and difficulties of Zhuang stringed instrument music creativity.

No matter what kind of art form, without the creativity and innovation of works, it is impossible to continue to develop. The music creativity of Zhuang stringed instruments is subdivided into several fields of application. First, in Zhuangju works, stringed instruments are only used as accompaniment for singing. Therefore, this kind of musical innovation depends on the innovation of Zhuangju scripts. Script construction is a key link in the construction of Zhuangju. Taking Guangxi South Road Zhuangju as an example, there are not many old scripts preserved and not enough new scripts created. According to Mr. Huang Yige, there were originally about 200 traditional repertoires of South Road Zhuangju. However, due to various reasons, most of the scripts have been destroyed or lost, and now there are very few left. At the same time, there are not many Zhuangju plays created after the founding of New China. There are 52 plays in Debao County, but very few are still being performed.

Mr. Huang Yige thinks that the main reason for the lack of scripts is the lack of creativity talents. We know that Zhuangju is a comprehensive art, and its main creativity personnel include screenwriters, directors, music, stage art and other talents, and screenwriting is the key among the keys. But as far as rural amateur theater troupes are concerned, there is no strict division of labor. Almost all performances have the content of a repertoire taught by an old artist - some are self-compiled, and more are "brought". Moreover, these old artists are both screenwriters and directors in a non-strict sense, and some may also serve as leading actors, music vocal design and stage costume design at the same time. Such multiple roles, coupled with limited quality and ability, will inevitably lead to "supply in short supply" of Zhuangju. What is especially sad is that with the passing away of these old artists, there are already very few talents who can play the role of main creators and leaders. Therefore, when rural Zhuangju troupes want to rehearse Zhuangju, they are faced with the problem of "repertoires are hard to find". Entertainers request scripts for performances. It is understood that there are only four or five old artists in Jingxi County who can create and write scripts. When various amateur troupes need to perform, they go to them for scripts to alleviate the urgent need. As far as the county song and dance troupe is concerned, due to the small number of creativity personnel and young age, they are not familiar with the traditional culture of the Zhuang nationality and are not proficient in the national art of Zhuangju, so it is difficult to produce excellent works.

Similarly, the Zhuang Bayin band, which is a form of instrumental ensemble, also faces the dilemma of lack of works. According to Mr. Li Xike, compared with the stereotyped writing method of the feat accompaniment music, the innovation of the Bayin band requires a more professional creativity method. But for folk artists, this is undoubtedly very difficult. Therefore, the repertoire used by the Zhuang Bayin band is basically those traditional repertoires, such as "Xianjiale", "Pingbandiao", "Tandiao", "Caihuadiao", "Xidiao", "Kudiao", "Shidiao" and so on. Ensemble and a variety of local folk tunes.

Ms. Chen Chuncheng said that as the only solo instrument among the stringed instruments of the Zhuang nationality, the Maguhu, its music is also an extremely important part of the stringed music art of the Zhuang nationality. The local folk artists who are engaged in the performance of Maguhu still follow the way of "oral teaching". There are only a handful of people who make Maguhu music, which undoubtedly seriously restricts the creativity and development of Maguhu music. The melodies that have been handed down to the solo or ensemble of the Maguhu are now only the traditional repertoires such as "Spring Morning in Zhuang Township" and "Camel Bell in Zhuang Mountain" compiled in the 1960s. Due to deviations, there are still multiple versions of these tracks in the folk. In recent years, some new music works created for Maguhu can be vaguely collected in folk or music groups. However, since the keynote of Maguhu music depends on the characteristics of Zhuang culture and Zhuangju, it is difficult for creators to create music. To capture its essence, it must also have a strong and distinctive unique charm of the Maguhu. Therefore, from the perspective of musical form, these works are still a little immature and have not been able to spread within a certain range. Therefore, Maguhu's art urgently needs a group of professionals to integrate into it and inject new blood into the creativity and innovation of Maguhu's music. Only in this way can Maguhu's art glow with youth and vitality and better promote the updated development of Maguhu's art.

1.5 Other issues in the preservation and development of Zhuang stringed instruments

1.5.1 The development level of five Zhuang stringed instruments is uneven.

Mr. Zeng Dan believes that looking at the development of the five stringed instruments of the Zhuang nationality, it is obvious that the development level is

unbalanced. This difference is specifically reflected in the specific links such as musical instrument production process, application scope and dissemination. The fundamental reason for this imbalance lies in the performance and characteristics of the instrument itself. Among the five kinds of musical instruments, the most mature one is Maguhu, which has a distinctive timbre different from other string instruments because of its sonorous, pure, and penetrating sound. First, from the aspect of creating technology, the creating technology of Maguhu is becoming more and more perfect. However, the other four stringed instruments are not prominent due to their timbre characteristics, which is close to the timbre of traditional instruments such as Erhu or mezzo Erhu, but the timbre is often not good enough. Therefore, since the 1960s, most Zhuangju troupes have changed to use Erhu and mezzo Erhu to replace Tuhu, Zhutonghu, Jiaohu and Huluhu, and the development of these instruments has been interrupted. Until the 1990s, Li Xike, the inheritor of the Bayin of the Zhuang nationality in Jingxi County, and Zeng Dan worked together to restore these four stringed instruments, but they lacked decades of development opportunities, leading to a growing gap with other musical instruments in terms of production technology, and their workmanship and design were relatively rough. In addition, in the field of practical application, Maguhu is the most important leading instrument in both the Zhuangju Troupe and the Bayin band, and also the only Zhuang stringed instrument that can be used for solo. Other instruments can only be used for accompaniment of Zhuangju or ensemble of Bayin bands.

1.5.2 Academic research on Zhuang stringed instruments is relatively weak.

Throughout the study of Chinese and foreign musical instruments, most musical instruments should have their literature and genealogy records in their storage materials. However, the string art of the Zhuang nationality is just like many other traditional Chinese cultures. There are no textual materials and books about it introducing the stringed instruments and music of the Zhuang nationality. Therefore, it has become the biggest obstacle to the research on the transmission and protection of Zhuang string music art. Researchers have never been able to trace the origin of Zhuang string music from a clear historical perspective. In the process of researching and collecting his music, the author has hardly seen his "tangible" music scores. The difference in scores also caused great difficulties for many scholars when recording research. One of the reasons that cannot be ignored is one of the characteristics of its music culture - improvisation.

We cannot deny that improvisation is one of the salient features of folk music creativity, and its advantages are well known. Even today, many experts and scholars still advocate the conclusion of improvisation and its ambiguity in traditional Chinese notation. But its disadvantages cannot be underestimated. Compared with material culture, intangible culture exists in time and space. After the performance, a kind of cultural heritage may disappear one after another. The string scores that we can hear and see now are only a very small part of the many excellent scores that are voluminous, and they have not been recorded in detail. Whether they can be preserved is a real problem. From the perspective of the feasibility of the declaration of the world's intangible culture at present, music notation data occupies a very important position. The author believes that the historical documents of the stringed instruments of the Zhuang nationality and the existing folk music scores, audio-visual materials and academic writings collected, collated and recorded by professional music scholars should be the object of preservation. Music workers can also use a variety of methods and means to transform those volatile "intangible" musical cultural heritages into long-lasting text, audio, and audio-visual materials, thereby establishing a complete Zhuang string record filing model.

Professor Chen Kunpeng believes that as a kind of music culture and art with strong regional characteristics in Guangxi Zhuang Autonomous Region, the string art of Zhuang nationality is immeasurable in terms of its humanistic value and historical significance for a regional cultural system, but the actual research on the string art of Zhuang nationality is an extremely important task. Few people are involved in the field, and there is a lack of more professionals to pay attention and further research. Looking at the relevant treatises and research results on Zhuang string music, it can be said that there are very few. Indeed, as a kind of folk culture, the string art of the Zhuang nationality is rooted in the folk, but it needs more new environment and soil to support its development. As far as non-governmental organizations or individuals are concerned, they are only a relatively weak group. First, they do not have strong professional skills and a more reasonable way of transmission to realize the ability to support and manage a kind of culture and art. As far as the current situation of the development of Zhuang string music is concerned, the Zhuang string music art cannot bring back the dying cultural phenomenon with just a few people or a certain group. It needs more and stronger people from the social field to join in and work together To solve the major problem of cultural

regeneration; secondly, the local art inheritors are not protected reasonably by the government. The government should clarify the functions and roles of functional departments in the and protection of national culture from the institutional level for the transmission and protection of folk art. status, to form a scientific, reasonable and sustainable national culture transmission and protection mechanism and system, but in the local management, the government agencies have not been able to participate in a timely manner, which also lays the foundation for the local development of Zhuang string music art. thirdly, there is not enough art funding, and due to the lack of attention and lack of control by government agencies, there is no strong umbrella for the protection and transmission of Zhuang string art, which seriously hinders The development, protection and transmission of Zhuang's string music art has been vigorously carried out. As experts and scholars in Guangxi, they should have the responsibility and obligation to inherit and protect the local culture in a timely manner, and use their professional perspective to excavate its culture, so that its research and development have strong scientific and authoritative. However, in the actual protection and transmission work, not only the number of researchers is very small, but also the research level is still shallow. Among them, at the unveiling ceremony of the Guangxi Intangible Cultural Heritage Research Center hosted by a certain unit in January 2009, a special concert of the horse bone tiger performed by a folk-art group was performed. The transmission of art and its culture has played a certain role, but the performers of this performance are still performed by old folk artists such as Huang Yige, and we have not seen a new generation of inheritors or researchers for them. Development proposes more and more effective development and promotion strategies, which are inconsistent with the development of Zhuang culture in the Zhuang Autonomous Region and the prosperity of Chinese culture. As far as the development of Zhuang string music is concerned, the form of culture cannot be copied or forged, and more professionals should pay attention to and discover this excellent art culture.

2. Suggestions for the preservation and development of Zhuang stringed instruments.

Stringed instruments of the Zhuang nationality are an excellent part of the traditional culture of the Zhuang nationality in Guangxi and an artistic treasure of the

Chinese nation. In order to solve the problems faced by the Zhuang stringed instruments, better protect and inherit the Zhuang instrumental music culture, display the unique artistic value, find new development vitality, create a minority cultural brand of "Zhuang stringed instruments", comprehensively promote the integrated development of culture and tourism, and realize rural revitalization. With the development of civilization, the following suggestions are put forward.

2.1 Strengthen the transmission and protection of Zhuang stringed instrument production technology.

In terms of the transmission of national musical instruments, protecting the traditional production process and technical requirements of national musical instruments is the primary issue. Every national musical instrument has its own special national characteristics in terms of shape, structure, material selection, playing tone, and playing methods. The research on the transmission of Zhuang stringed instrument production technology is also the need for the transmission and protection of the form characteristics of this characteristic minority musical instrument production process. The craftsmanship of the stringed instruments of the Zhuang nationality is the same as that of all ethnic minority instruments. In the long-term historical development process, due to the limitations of itself and the environment, there are generally too many problems of transmission. For such cases, we can expand the development of production techniques from the aspects of inheritors, places of transmission, channels of transmission, and media.

2.1.1 Strengthen the training of inheritors of Zhuang stringed instruments and expand the group of inheritors.

It is necessary to protect the carrier of music intangible cultural heritage, that is, the inheritor, and increase the training of the inheritor, which is the key to the protection and transmission work. Increase rewards for inheritors to provide guarantee for the cultivation of skill inheritors. At present, there are many deficiencies in the transmission system and development mechanism of Zhuang stringed instrument culture, mainly because of the lack of rewards and protection for artists, and the lack of incentives to attract people to learn Zhuang stringed instruments. Environment and conditions and necessary financial support. Therefore, on the one hand, it is necessary to improve the transmission system and development mechanism of Zhuang stringed instruments. On

the other hand, it is necessary to increase protection and rewards for artists and establish a Zhuang stringed instrument culture research fund to provide financial support for artists and performers, to attract more people to understand and learn Zhuang stringed instruments, to inspire artists dig out successors and heirs to provide material foundation and technical support.

Broaden the region and path of the Zhuang stringed instrument transmission target group to ensure the effectiveness of transmission. At present, the transmission of stringed instruments of the Zhuang nationality faces the dilemma of small number of people, uneven age distribution and weak professional strength. Debao County, Baise City has taken measures such as launching Zhuang stringed instruments into the campus, setting up children's Zhuang stringed instrument art transmission classes, and establishing a Zhuang stringed instrument art center to try to cultivate new talents of Zhuang stringed instruments and expand the Zhuang stringed instrument art team. These measures have achieved certain results in the early stage, but they have also brought hidden dangers to the development of Zhuang stringed instruments, such as young inheritors, weak learning beliefs, and low learning effectiveness. After 2015, the government forces basically withdrew, and the transmission channels of Zhuang stringed instruments are mainly the transmission of theater troupes and individual enthusiasts, and the number of inheritors in terms of production and performance is very limited. To increase the number of inheritors of Zhuang stringed instruments and ensure the art development of Zhuang stringed instruments, the cultivation of inheritor groups should be strengthened. The scope and group of transmission are limited by region and kinship. The making and performance techniques of Zhuang stringed instruments cannot be taught only by text, audio materials or physical carriers. For the convenience of demonstration and practice, Zhuang stringed instrument artists usually choose inheritors in their families. This action limits the source and number of inheritors of Zhuang stringed instruments. Therefore, first, the geographical scope of the transmission group should be expanded, and the target group of the inheritors should no longer be limited to the local area of Debao, and more exchange activities in other places should be organized. Secondly, break through the original transmission path based on kinship, and build a Zhuang stringed instrument skill training school to introduce more high-quality students and form a reasonable transmission echelon. The traditional way of family transmission

based on family lineage is an important position for handicraft transmission, but receiving social and cultural education is necessary to improve the comprehensive quality of inheritors and make them produce high-quality works. Only by social education forming a talent base of high, middle, and low levels, coupled with the assistance of family education, can we ensure an objective talent base for each category of arts and crafts.

2.1.2 Expand the geographical scope of transmission.

Expand the geographical scope of transmission, advocate diversified transmission, encourage the transmission of Zhuang stringed instrument culture in multiple forms such as families, masters and apprentices, primary and secondary schools, universities, cultural palaces, communities, and towns, and establish a long-term urban and rural development model with regional development. Co-construct and share the transmission mechanism; in addition, starting from the transmission channels and media of Zhuang stringed instrument production technology, through the intervention of professional groups and researchers, excavate and innovate more and more reasonable Zhuang stringed instrument production technology, and carry out batch production according to its market demand.

2.1.3 Improve the information database of Zhuang stringed instruments.

Improve the information database of Zhuang stringed instruments and strengthen the construction of cultural heritage platform bases. The primary task of protecting Zhuang stringed instruments is to improve the data and information of Zhuang stringed instruments from birth to evolution to the present and form a complete cultural information chain of Zhuang stringed instruments. The Zhuang stringed instrument art base should combine more modern technology with the Zhuang stringed instrument art style in terms of architecture and decoration style. The internal construction of the training base should also set up a research platform to increase the academic research on Zhuang stringed instruments, to make up for the lack of integration between the current real society and the Internet, so that its skills are no longer limited to folk art, so that people all over the world can understand Zhuang stringed instrument culture. In addition, it is necessary to pay attention to the recording and transmission of the creativity and performance of the Zhuang stringed instruments and strengthen the collection of the

remains of the Zhuang stringed instruments, so that the research on the Zhuang stringed instruments becomes evidence based.

To solve the problem of backward musical instrument production technology, the government should increase financial and technical support, and do a good job in the introduction of modern musical instrument manufacturing technology and personnel training. For the shortage of raw materials, while strengthening the breeding efforts, speed up the progress of technology research and development, and look for alternative raw materials. It is reported that some people have developed artificially imitated snakeskin, and it is expected that this technology can be applied to practice as soon as possible. In view of the small market demand, we should relax our thinking and expand the scope of promotion of Zhuang stringed instruments, not only in Zhuang areas, so that they can be popularized in a wider range, to stimulate the enthusiasm for musical instrument production.

2.2 Diversified training of Zhuang stringed instrument performers

2.2.1 Further support the path of folk transmission.

The string art of the Zhuang nationality is a "living" cultural heritage, and it is now an autonomous region-level intangible cultural heritage. Then, the establishment of the Zhuang Minority String Music Art Folk Institution will also play an inestimable value and significance for the transmission and protection of the Zhuang Minority String Music Art. The training institute can also expand its actual effect in a certain sense. For example, Zhuang stringed instrument exhibition halls, museums, community cultural centers, children's learning bases, school characteristic education, etc. have been established in various places, and strive to create institutional characteristics from point to surface, and effectively inherit, promote, and popularize Zhuang stringed instruments in line with the purpose of "people-oriented, inheriting skills" music art. In April 2012, Guangxi's first children's Maguhu art transmission class was held in Debao County (March 26, 2011). A total of 60 primary school students from the county's first Maguhu art transmission class participated in the class training. The Propaganda Department of the Baise Municipal Party Committee and relevant leading departments attached great importance to this activity and made a special study on the protection and transmission of local intangible culture, and formally established the first children's horse bone art base. According to the county's vision, the children's training and transmission class will

be used as an opportunity at present, and when the time is ripe, Zhuangju and folk songs will be integrated into the construction of the Maguhu base to form a long-term construction mechanism. Huang Yige, the inheritor of Debao Maguhu, is now the teacher of this training class. It is required to start from the baby and start from the platform of transmission and protection. The author believes that soon, this move will push the development and prosperity of the Zhuang nationality's string music art to a certain extent to a new stage, and at the same time enable the Zhuang nationality's culture and art to be better preserved and developed.

2.2.2 Set up a professional transmission team to provide professional teacher guarantee for the transmission of Zhuang stringed instruments.

Set up professional bands, hold training courses on the preservation of Zhuang stringed instrument art, and train a group of Zhuang stringed instrument art inheritors and cultural industry transmission teams. Through the band's national tour and other means, expand the communication effect, attract more people to join the team, participate in professional performances and technical exchanges. Based on existing resources, build a Zhuang stringed instrument skills transmission team with talents in performance, production, creativity, teaching, and research, etc., provide economic security to avoid the loss of talents, and use the advantages of experts to focus on cultivating those students who have innate endowments and love Zhuang stringed instruments. To enrich the professional teaching staff. Through the platform of publicity and display, the professionalism and authority of cultural identity are enhanced, and the cultural industry transmission team is cultivated in multiple dimensions.

2.2.3 Increase school transmission.

Strengthen the cooperation and exchanges between the Zhuang stringed instrument art and local colleges and universities, incorporate it into the school's ethnic culture theory course system, set up the Zhuang stringed instrument music major, form a complete and mature teaching system, and enhance the atmosphere of learning and preserving the Zhuang stringed music skills. Let students subtly understand and feel the charm of Zhuang stringed instruments and promote the construction of national art and campus national culture. Strengthen cooperation between government departments and universities, the government will increase support, encourage and support colleges and universities to set up Zhuang stringed instrument music majors, set up special learning

institutions and Zhuang stringed instrument art research institutes, jointly train professional Zhuang stringed instrument inheritors, and increase employment in Zhuang stringed instrument art opportunities to promote the stable preservation and continuous vitality of Zhuang stringed instruments.

The transmission and protection of Zhuang stringed instruments will take a long time and rely on many media resources to enrich the Zhuang stringed music art and develop it in the long run. One of the most important media is to rely on some professional colleges and universities to take the initiative to move closer to them and use this resource to promote the better development of the Zhuang string music art; The national cultural heritage and put the national and local characteristics into the local professional colleges, and gradually develop it as a school-based curriculum, which also has a complementary effect. Introducing Guangxi's local ethnic minority music culture into colleges and universities and developing and experimenting with it as a school-based curriculum is not only conducive to the formation of local colleges and universities' school-running characteristics, but also conducive to the cultivation of students' individualized abilities and the development of teachers' professionalism. In addition to using the development of college curriculum projects as the main medium of college dissemination, if we want to truly affect students within a certain range of precious national music culture, we should also use some media publicity and support to further realize it. It has become a good opportunity for students to get in touch with national music culture.

2.3 Broaden the transmission path of Zhuang string art.

It is necessary to formulate a publicity plan for Zhuang string music culture, integrate multiple forces to guide and expand the promotion of Zhuang string music culture, improve the popularity of Zhuang string music culture, and strive for more display space for it. Zhuang stringed instruments need to adapt to the requirements of the times and change their own communication mode. With the coverage of information technology on human life, people's means of obtaining information are gradually digitized. Zhuang stringed instrument inheritors, theater troupes and fans should actively use various online social platforms to promote the Zhuang stringed instrument culture in an all-round and multi-angle way. For example, register the WeChat official account, and regularly push relevant knowledge about the history of Zhuang stringed instruments, national legends, production, performance, and musical instrument creativity. Upload

videos of playing or making Zhuang stringed instruments, explaining the historical origins and performance techniques of Zhuang stringed instruments on the video platform. Only through Internet dissemination can the stringed instrument culture of the Zhuang nationality be exported quickly and widely and gain wider attention. The relevant departments of the Debao government should strengthen the official publicity of the Zhuang stringed instrument culture, further stimulate the vitality of the Zhuang stringed instrument cultural market and activate the Zhuang stringed instrument cultural industry. Promote the development of the industry chain. To build and connect influential display platforms for capable Zhuang string instrument artists, and to continuously export excellent content of Zhuang string instrument art. Broadening the publicity channels of Zhuang stringed instruments and strengthening publicity will, on the one hand, help to enhance the awareness and social influence of the Zhuang stringed instrument culture, and pave the way for a broader stage. On the other hand, it has attracted more people to understand and learn the stringed instruments of the Zhuang nationality and has consolidated the mass base.

Strengthen the emphasis on the transmission of the Zhuang stringed instrument art and promote the Zhuang stringed instrument culture to go out. Strengthen attention, vigorously promote publicity, increase capital investment, select outstanding performers and excellent programs to influential stage shows, expand the popularity and extensive influence of Zhuang stringed instrument art, and let more people through good works and good performing arts. People know and love it, making it an art form that is loved by the masses.

2.4 Vigorously improve the level of music creativity and the number of works of Zhuang stringed instruments.

If you want to create good music works, you must first have talents who can create. Make full use of the professional talent resources of local colleges and universities, tap creativity talents, and take the road of cooperation. Strengthen cross-field and cross-professional cooperation and create new music works. It is necessary to tap the musical characteristics and charm of the instrument itself, dare to innovate, and strengthen the cooperation between Zhuang stringed instruments and other instruments in performance and creativity. Further explore and create new works that integrate with different types of music, opera, drama, opera, stage play and other modern art performance forms, to

further enhance the popularity of Zhuang stringed instruments and provide a platform and opportunity for better protection and transmission.

Collect new string music works of the Zhuang nationality through various channels to increase composers' creativity interest and enthusiasm. The way to collect music works can be organized by the Chinese Music Association and other relevant departments, such as holding the "National Instrumental Music Creativity Competition", "Chinese Minority Instrumental Music Creativity Competition", "Chinese Minority Instrumental Music Performance Competition", etc., which can encourage ethnic music creativity Prosperity and development, and promote the improvement of music creativity of Zhuang stringed instruments. In addition, when soliciting music creativity, an influential instrumental music performance competition can be held under the guidance of the local government. This exhibition can not only promote the art education and cultural dissemination of Zhuang stringed instruments, enhance people's level of cultural accomplishment and artistic cognition and appreciation of Zhuang stringed instruments, but also focus on displaying and carrying forward Chinese traditional national culture. More importantly, it can attract, mobilizing a group of musicians to understand the culture and art of stringed instruments of the Zhuang nationality in Guangxi, and at the same time to create and excavate music more deeply, it is possible to produce a number of excellent string music works of the Zhuang nationality. Of course, it is indeed not an easy task to preserve a music form well. This is a difficult task that requires the joint efforts of a long time or even several generations to complete. The author proposes this move now mainly in the hope that more people will be involved in this work to complete the important task of continuing a national culture. Today, some colleges and universities are gradually improving the development of ethnic music in Guangxi, and hope that composers will participate more in the creativity of ethnic minority instrumental music. Soon, we can see that the stringed instrument music of the Zhuang nationality will once again take root and sprout in the fertile soil of Guangxi nationality.

2.5 Promote the construction of a platform for academic research on Zhuang stringed instruments.

For the preservation of Zhuang stringed instrument art, there is another very important measure, that is, under the new form of cultural diversification, we should consider rebuilding a new pattern and ecological conditions to meet the needs of today's

social development and cultural construction. In other words, it is to integrate all the forces that can be preserved and conduct an in-depth analysis of the Zhuang stringed instrument art, so as to form an effective research model. The establishment of this model can be attributed to the establishment of the Zhuang stringed instrument art research center platform. Its core task is to organize manpower and material resources to carry out reasonable planning, implementation, acceptance and results of the Zhuang stringed instrument art as an academic research topic. Promotion, etc.; at the same time, it is necessary to conduct regular surveys of the collected cultural content, establish a cultural catalog and formulate collection planning, reasonable protection and transmission methods, and promotion models.

The art of stringed instruments of the Zhuang nationality has been circulated among the people all the year round, and the distribution of documents and materials is relatively scattered. Various versions of folklore, music scores, and written records are relatively messy. different aspects. For the collation of Zhuang stringed instrument art literature, scientific methods and means should be used to process the disordered literature collected so as to make them orderly and systematized for storage and timely reference.

In addition, to solve the problem of unbalanced development of musical instruments in the preservation and development of Zhuang stringed instruments, we must first conduct in-depth research and judgment, accurately find out the reasons for the unbalanced development, and formulate corresponding solutions based on these reasons. Through musical instrument reform and practical exploration, we will improve the timbre quality and performance of musical instruments from the perspectives of musical instrument production technology, communication methods, and academic research, tap the potential of musical instruments, and strive to narrow the development gap.

Table 4. Summary of chapter VI

The guideline for preservation of stringed instruments of the Zhuang ethnic group in the Chinese Guangxi Zhuang Autonomous Region

Current situation and difficulties of the preservation of	Current situation and difficulties of preserving the creating technology	1) The number of luthiers of Zhuang stringed instrument has dropped sharply. 2) The creating technology of musical instruments is backward.
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Zhuang stringed instruments	of Zhuang String Instruments	<ol style="list-style-type: none"> 3) Raw material shortage 4) The market demand is too small
	Transmission status and difficulties of Zhuang string performers	<ol style="list-style-type: none"> 1) Zhuang stringed instrument performers are aging seriously. 2) Lack of professional Zhuang stringed instrument teachers 3) Campus promotion lacks sustainability
	The current situation and difficulties of the spread of Zhuang's string music culture.	<ol style="list-style-type: none"> 1) Insufficient publicity and funding from the government. 2) The performance art form and content of Zhuang stringed instruments are outdated. 3) Impact of contemporary new media 4) The communication channel of the Zhuang string art is backward and single.
	Current situation and difficulties of Zhuang stringed instrument music creativity	<ol style="list-style-type: none"> 1) Existing music is relatively old, and new music works are seriously lacking. 2) Lack of professional Zhuang string music creativity talents
	Other issues in the preservation and development of Zhuang stringed instruments	<ol style="list-style-type: none"> 1) The development level of five Zhuang stringed instruments is uneven. 2) Academic research on Zhuang stringed instruments is relatively weak.
Countermeasures and suggestions for the preservation of Zhuang stringed instruments	Strengthen the transmission and protection of Zhuang stringed instrument production technology.	<ol style="list-style-type: none"> 1) Strengthen the training of inheritors of Zhuang stringed instruments and expand the group of inheritors. 2) Expand the geographical scope of transmission. 3) Improve the information database of Zhuang stringed instruments.
	Diversified training of Zhuang stringed instrument performers	<ol style="list-style-type: none"> 1) Further support the path of folk transmission. 2) Set up a professional transmission team to provide professional teacher guarantee for the transmission of Zhuang stringed instruments. 3) Increase school transmission.
	Broaden the transmission path of Zhuang string art	It is necessary to formulate a publicity plan for Zhuang string music culture, integrate multiple forces to guide and expand the promotion of Zhuang string music culture, improve the popularity of Zhuang string music culture, and strive for more display space for it.
	Vigorously improve the level of music creativity and the number of works	To create good music works, we must first have creativity talents. Make full use of the professional talent resources

	of Zhuang stringed instruments	of local colleges and universities, tap creativity talents, and take the road of cooperation.
	Promote the construction of a platform for academic research on Zhuang stringed instruments	Organize personnel and material resources to carry out reasonable planning, implementation, acceptance and promotion of Zhuang stringed instrument art as an academic research topic. At the same time, it is necessary to conduct regular census of the collected cultural content, establish a cultural catalog and develop collection planning, reasonable protection and transmission methods and promotion models.

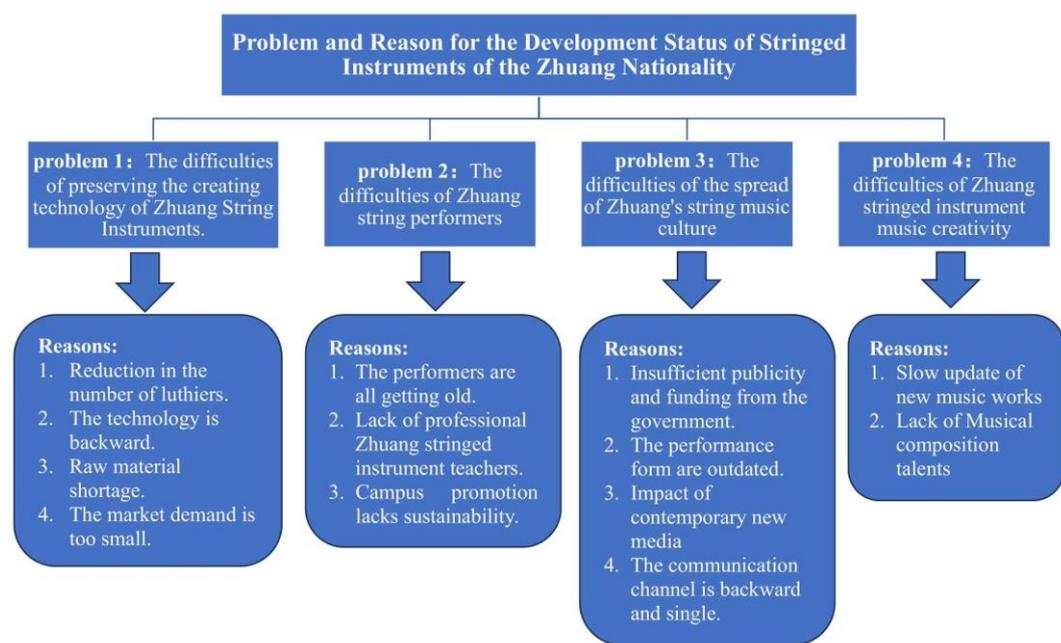
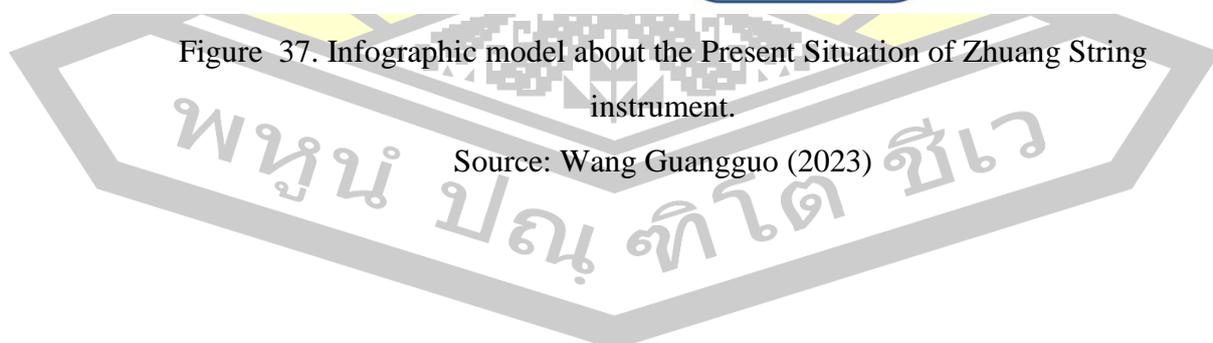


Figure 37. Infographic model about the Present Situation of Zhuang String instrument.

Source: Wang Guangguo (2023)



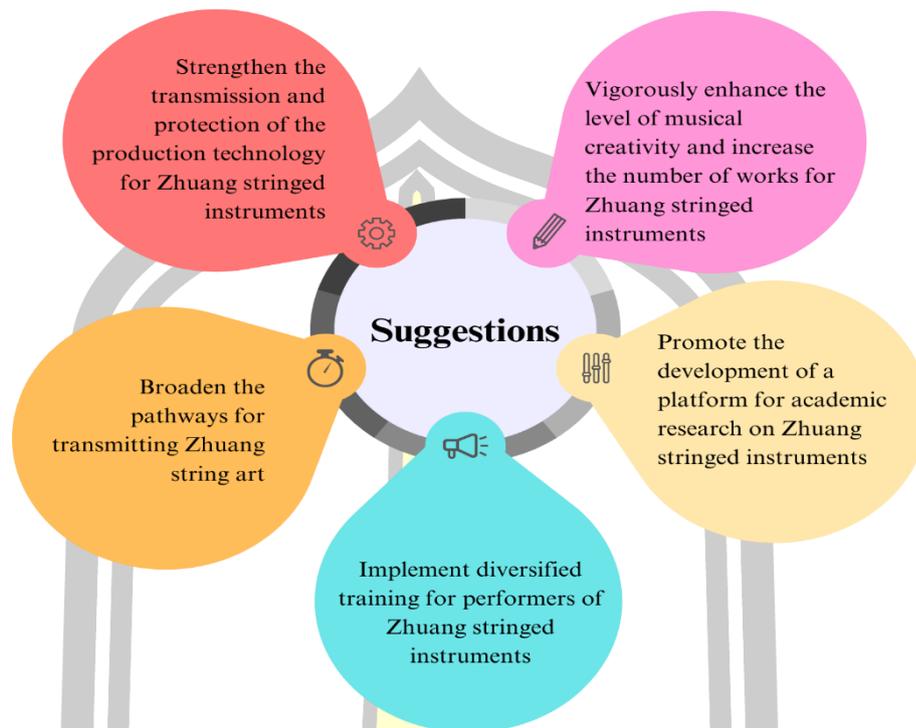


Figure 38. Strategic plan for the preservation of Zhuang stringed instruments.

Source: Wang Guangguo (2023)

It is necessary to ensure the validity of the preservation of Zhuang stringed instruments. Establish a scientific and stable social education mechanism, set up a cultural transmission team covering the needs of Zhuang stringed instrument production, artistic creativity, performance skills, theoretical teaching and research, cultural publicity, etc., and provide inheritors with as detailed learning as possible under the current conditions. Data, long-term, comprehensive and systematic training for inheritors, cultivate a comprehensive and high-level Zhuang string music art team, and add fuel to the preservation and development of Zhuang string instruments.

พหุบัณฑิต ชีเว

CHAPTER VII

Conclusion Discussion and Suggestions

1. Conclusion

From chapter IV: The main difference in the creativity methods of the five Zhuang stringed instruments are the Qintong (resonator) and the Qintou. Among them, the Qintong is the most critical part to determine the timbre of an instrument, and it is different in terms of materials and technology. The Qintou is only used for decoration. Each Luthier designs and makes Zhuang stringed instruments according to his own aesthetic habits. The creativity methods and improvement ideas are derived from the basic concept of instrument production, including the aesthetic taste of folk Luthier and the level of creativity technology.

From chapter V: We can learn that Zhuang stringed instruments have multiple functions and roles. When Zhuang stringed instruments assume different functions, their roles will often be different. Because of the different levels of development of the five kinds of string instruments, even when performing the same function, they are in different positions. Among them, Maguhu is the most important one. It is the only one of the five instruments that can be used for solo, while the other four string instruments are only used for accompaniment and ensemble, and sometimes can be replaced by other instruments.

From chapter VI: The preservation of Zhuang stringed instruments should be explored from the aspects of preservation technology, performance techniques and talents, music creativity, transmission methods and ways, and summarize the problems and reasons existing in the preservation of Zhuang stringed instruments and put forward specific countermeasures and suggestions for these problems.

According to the analysis of literature review, we already know that other people's research on Zhuang String instrument has a single perspective and insufficient depth. For example, they often only provide general introductions to musical instruments, lacking deeper understanding and insights. This research conducted a comprehensive study of the Zhuang String instrument from the perspectives of the concept of musical instrument production, the functions and roles of musical

instruments, and the protection of musical instruments. The research perspective is more comprehensive and in-depth, the research methods are more scientific, the conclusions are more accurate and persuasive. This is the key point that distinguishes this study from other studies.

From the research results, this thesis has achieved the expected research objectives. On the whole, this study has the following significance: 1) It makes up for the lack of single research perspective and insufficient research depth in this field. 2) It provides theoretical reference for the healthy development of the art of Zhuang stringed instruments in Guangxi, China. 3) Provide research data and ideas for future researchers.

2. Discussion

In the process of researching this topic, there are still some controversies in the academic circles regarding some specific issues. There are mainly the following points:

2.1 Discussion on whether the creativity process of Zhuang stringed instruments should be standardized and reformed.

Man Ruixing, a well-known Chinese pipa production expert, believes that the mass production of Chinese national musical instruments is limited by various conditions. The materials are different, the shape is inconsistent, and the performance is also very different. It is a common phenomenon that each batch is "non-standard". Compared with the standardization of the world's musical instrument industry, the degree of "standardization" of the shape and sound of national musical instruments at that time reminded practitioners that the "natural" state of national musical instruments has produced a huge gap with the "modernization" of society. The difficulty of standardizing Chinese and Western musical instruments is reflected in the issue of production materials, making the musical instrument industry gradually realize that the personality and vocabulary of local musical instruments are naturally worth cherishing, but industry development and applied research need to be supplemented by a "universal language". The advocates who lead these discussions include musicologists with high academic status in addition to front-line musicians in production, performance, and creativity. As early as 1954, the Institute of Ethnic Music of the Central Conservatory of Music was established. Li Yuanqing, the first person in charge at that time, published

a series of articles guiding the development of Chinese musical instruments, specifically proposing that "the musical instruments produced by the decentralized musical instrument workshops should reach the It is still very difficult to unify the specifications at present, but some preparatory work should be done now to create the necessary conditions for the standardization of the specifications of musical instruments in the future. (Gao Shu, 2021)

However, in response to this problem, Chen Kunpeng, a Maguhu performer of the Zhuang nationality and an expert in musicology, believes that for the stringed instruments of the Zhuang nationality, it is difficult to establish the standardization of the production process, and it does not meet the actual situation. The first question encountered is who will determine this standard? From what point of view? Is it the author's standard or the performer's standard? Or the standards of musicology experts and scholars? This may be difficult to define and unify. The second is how to implement the standard? The special production materials of Zhuang stringed instruments themselves have great uncertainty and randomness, which is exactly contrary to the implementation of standards.

For this issue, the above two views have their own reasons and reasons. So, do Zhuang stringed instruments need standardization reform? I think it is possible, but the "standard" I said is a limited standard, that is, some controllable links in the production of Zhuang stringed instruments can be standardized and standardized. For example, the effective chord length of stringed instruments, the length of the Qintong, the production specifications of the Qintuo, the Qinzhou, the Qintou, the Qingan and other components can be completely standardized, while those uncontrollable links, such as the size of the horse bone and gourd shell and shape, it is difficult to achieve complete unity. In this case, a certain amount of flexibility can be allowed in the selection of materials. In this way, the unique personality of the Zhuang stringed instruments can be preserved, and the performance and parameters of the instruments can be unified to the greatest extent.

2.2 Discussion on the transmission value of some stringed instruments of the Zhuang nationality.

According to the above content, it can be known that each member of the Zhuang stringed instrument family has different levels of development. Judging from the frequency of use at the current stage, Maguhu has the most distinctive features, the

highest level of overall development, and the most widely used. It is used in Zhuangju troupes, Bayin bands and solo pieces, and they are all the main instruments. While other stringed instruments are mostly replaced by Erhu and Zhonghu in Zhuangju troupes, only a few folk troupes occasionally use Tuhu and Huluhu. Except for the Maguhu, no other stringed instruments are used for solo performance. Only in the eight-music team of the Zhuang nationality can all these five stringed instruments gather.

Li Xike, the inheritor of the eight-tone art of the Zhuang nationality, believes that all five stringed instruments should be vigorously inherited. He believes that replacing the Zhuang stringed instruments with other instruments in the troupe will lose the meaning of Zhuang music. However, Chen Chuncheng, a young Maguhu performer, believes that the four instruments of the Zhuang nationality, the Tuhu, the Ijiaohu, the Zhutonghu, and the Huluhu, have more prominent features than the horse bone hu, and are similar in tone to the erhu and the middle hu. , but it is not as good as Erhu and Zhonghu in terms of sound quality and instrument performance stability, so there is no need to continue reform and transmission.

Xiao Youmei, a famous Chinese musicologist, once put forward a point of view on the improvement of old musical instruments. He said that whether an old musical instrument needs to be improved depends on whether it has the value of improvement. Whether it is worth judging depends on the following points: first, the timbre of the instrument must be good; second, the range of the instrument must be wide, preferably more than three octaves; chromatic scale.(Xiao Youmei, 1991)

Judging from Mr. Xiao Youmei's several standards, the Zhutonghu, Huluhu, Jiaohu, and Tuhu of the Zhuang nationality do have deficiencies in timbre and sound quality. but I think. The reason why these kinds of stringed instruments are still popular among the people shows that they still have a certain vitality. Their biggest advantages are low production cost, low price, convenient production, and easy dissemination in economically backward areas. On this basis, it is not impossible to improve the quality and performance of musical instruments through the improvement of modern technology.

2.3 Discussion on campus transmission of Zhuang stringed instruments.

The focus of the debate here is actually whether stringed instruments should be passed down and disseminated in primary and secondary schools. Li Ying, a music

teacher at No. 7 Middle School in Fu'an City, Fujian Province, once published a thesis and wrote: the equipment related to ethnic music culture can better improve students' interest in ethnic music, especially ethnic musical instruments, and make them make faster progress in club classes. The equipment should naturally be based on musical instruments. In fact, each national musical instrument contains a relatively long history and a relatively profound culture. The transmission of national music culture and the music education carried out by schools are mutually complementary and mutually supportive. Among them, the conventional music education in schools can enable students to acquire systematic music knowledge, which can be regarded as the transmission of music culture. The required foundation, prerequisite.

Huang Yige, the inheritor of Zhuang horse bone art, holds a different point of view. Based on his experience in teaching Zhuang stringed instruments in primary and secondary schools, he said that the popularization of teaching in primary and secondary schools is helpful to the development of Zhuang stringed instruments, but it cannot fundamentally solve the dilemma of musical instrument transmission. First, because elementary school students are relatively busy with their studies, parents worry that contacting them will affect their children's academic performance, so few students can really persevere. The second reason is that the most important bottleneck in the development of Zhuang stringed instruments is the lack of communication among high-level professional groups, which is the main reason for the lack of influence of instruments. In the thesis published by Liang Xiaoyan and others, it is believed that strengthening cooperation and exchanges with local colleges and universities, incorporating Zhuang stringed instruments into the school's ethnic culture theory course system, and setting up a major in musical instrument art and music will form a complete and mature teaching system and enhance professional skills. The atmosphere of learning and transmission allows students to subtly understand and feel the charm of Zhuang string music and promote the construction of national art and campus national culture. Strengthen the cooperation between government departments and universities, the government will increase support, encourage, and support colleges and universities to set up Zhuang string music majors, set up special learning institutions and art research institutes, jointly train professional inheritors, and increase employment

opportunities in Zhuang string music art. In order to promote the stable transmission and continuous vitality of musical instruments.

I believe that whether it is the popular transmission of primary and secondary schools or the leading transmission of professional groups, they are both necessary and non-conflicting, and should be vigorously advocated and supported.

3. Suggestions

3.1 Suggestions for applying the results of the study.

The results of this study can be applied to the field of Zhuang stringed instrument creativity and provide the ideas of instrument improvement for the Luthier.

The results of this study can provide relevant data and theoretical support for future researchers in this field.

The results of this study can provide government departments with feasible strategies and reference for the preservation and dissemination of Zhuang stringed instruments.

3.2 Suggestions for further research.

Although this study fills some research gaps in this field, there are still some meaningful research topics that need to be further explored, such as:

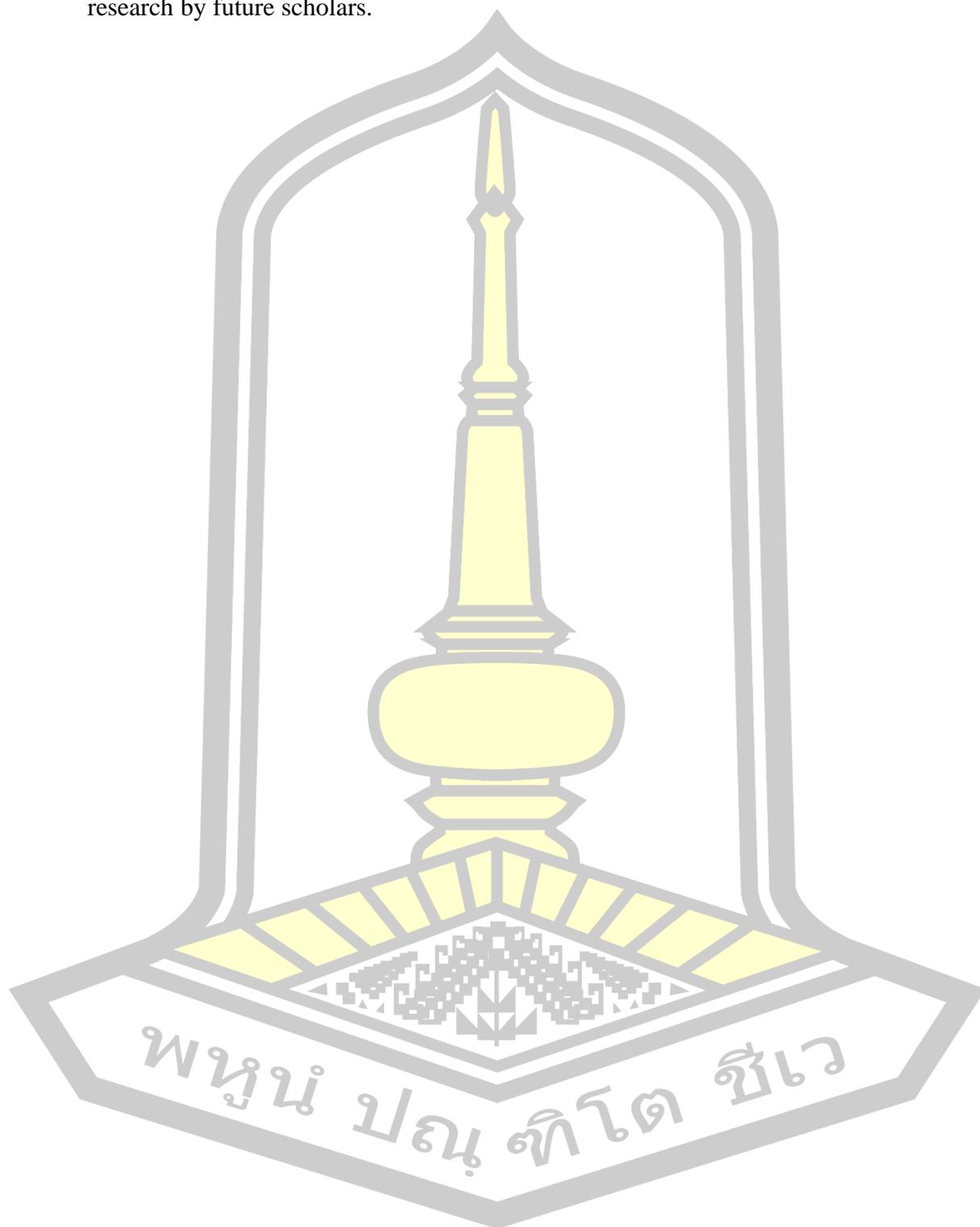
3.2.1 Research on the musical characteristics of Zhuang String instrument.

The research on the music characteristics of Zhuang stringed instruments is still relatively weak. The music types involved in Zhuang stringed instruments cover different types of music in three major application fields, including Zhuangju music, Zhuang Bayin music and Maguhu solo music. Through the comparative study of these music types, we can explore the internal relations and laws of their music styles. I believe that the research in this field is of great value and significance.

3.2.2 A comparative study of String instrument of Guangxi Zhuang nationality and String instrument of Southeast Asia.

In terms of geographical location, Guangxi and Southeast Asian countries are relatively close, and the climate environment is similar, and Guangxi has always had frequent cultural exchanges with Southeast Asian countries. So, is there any cultural interaction, infiltration or connection between Zhuang stringed instruments and

stringed instruments of Southeast Asian countries? This needs further exploration and research by future scholars.



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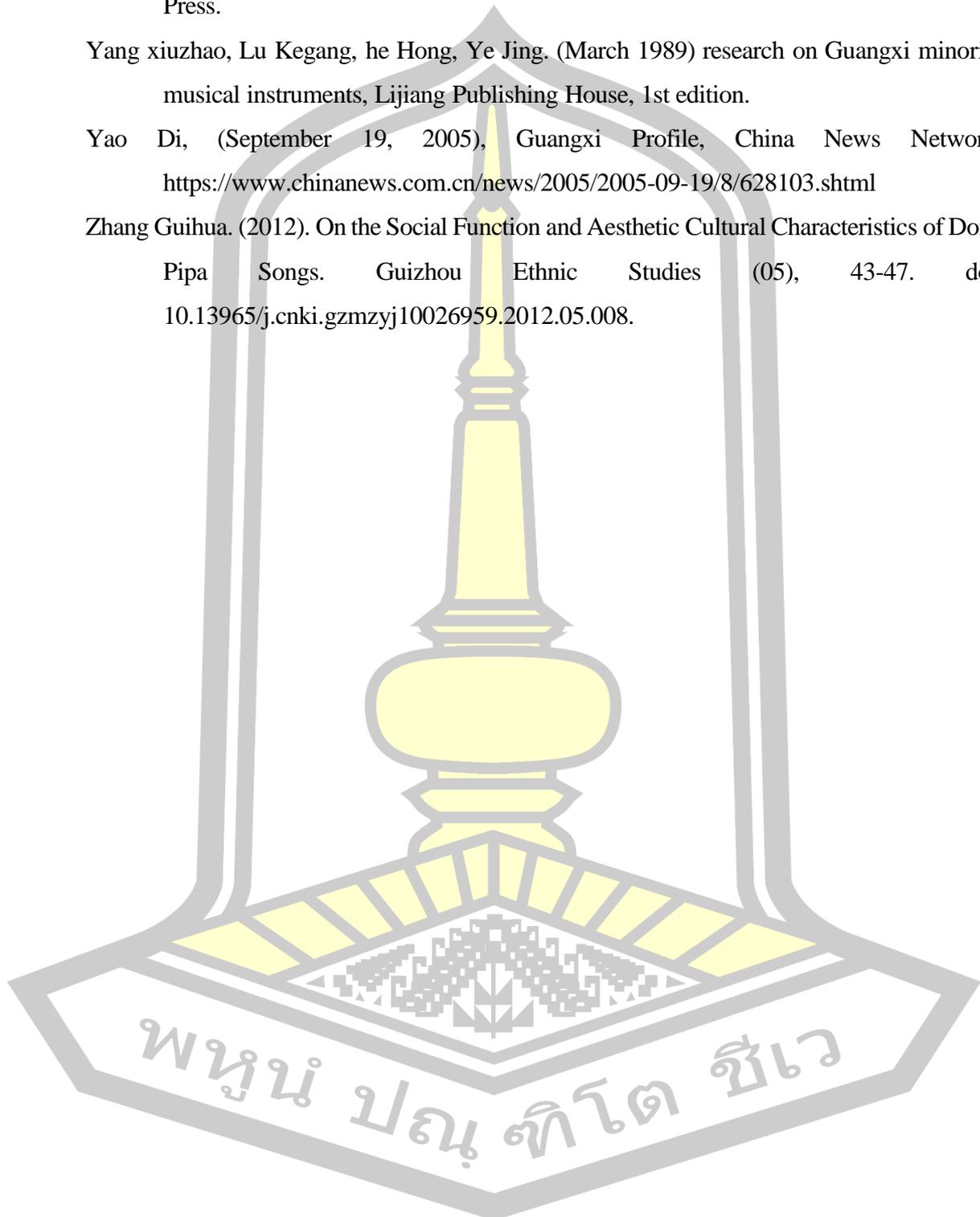
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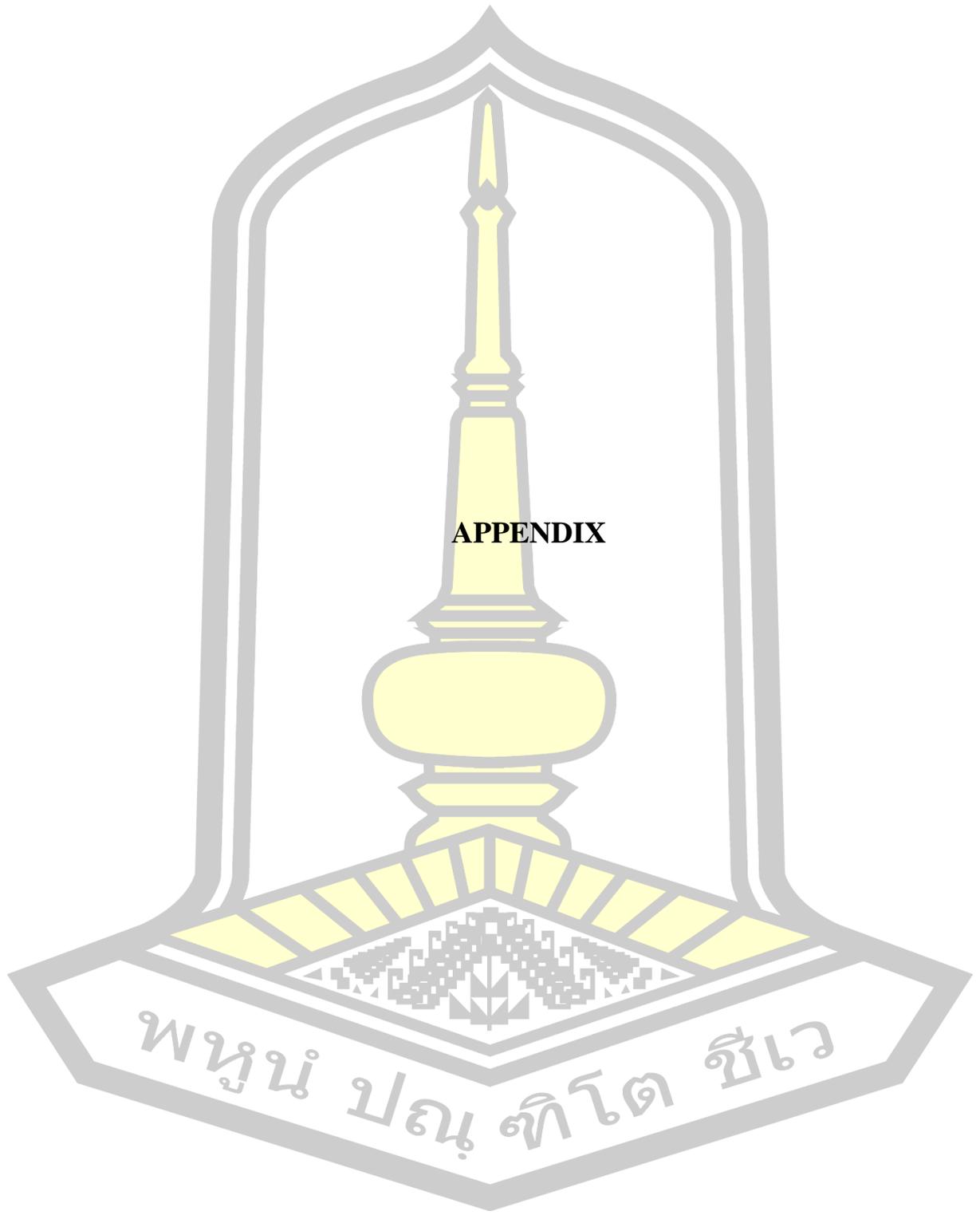
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APPENDIX

พหุบัณฑิตยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

Appendix I Key informant interviews: Prioritization methods and criteria

Purpose of Engagement	Key Informant	Frequency of Engagement	Prioritization Method	Prioritization Criteria
The main informant of the field work, providing information for the topic and objectives	Li Xike	Ongoing (twice a year)	According to the needs of this study, this informant provides data for three main objectives	Must be a well-known local inheritor, with more than 30 years of experience in the field of Zhuang stringed instruments and important achievements
The main informant of the field work, providing information for the topic and objectives	Zeng Dan	Ongoing (twice a year)	According to the needs of this study, this informant provides data for two main objectives	An important local producer with more than 30 years of experience in the field of Zhuang stringed instruments and important achievements
The main informant of the field work, providing information for some key research points	Huang Yige	Ongoing (once a year)	According to the needs of this study, this informant provides data for some important information	Must be a well-known local inheritor, with more than 30 years of experience in the field of Zhuang stringed instruments and important achievements
Provide macro guidance and determine the research direction from the perspective of experts	Chen Kumpeng	Ongoing (once a year)	According to the needs of this study, this informant provides data for two main objectives	Famous experts and professors in this field, with research experience of not less than 30 years
Provide supporting data from the perspective of performer	Chen Chuncheng	Ongoing (once a year)	According to the needs of this study, this informant provides data for two main objectives	Zhuang stringed instrument professional performer with playing experience of no less than 20 years
Provide supporting data from the perspective of local ordinary people	Xu Yanqin	Ongoing (once a year)	According to the needs of this study, the informant provided some data in two objectives	Must be a native of Zhuang nationality

Summary: according to the above table, all informants are divided into three groups, namely

General group, Scholar group and Casual group. Different groups have different selection criteria. They provide data from different fields and perspectives. This selection is to make the research conclusions more comprehensive and more reliable.



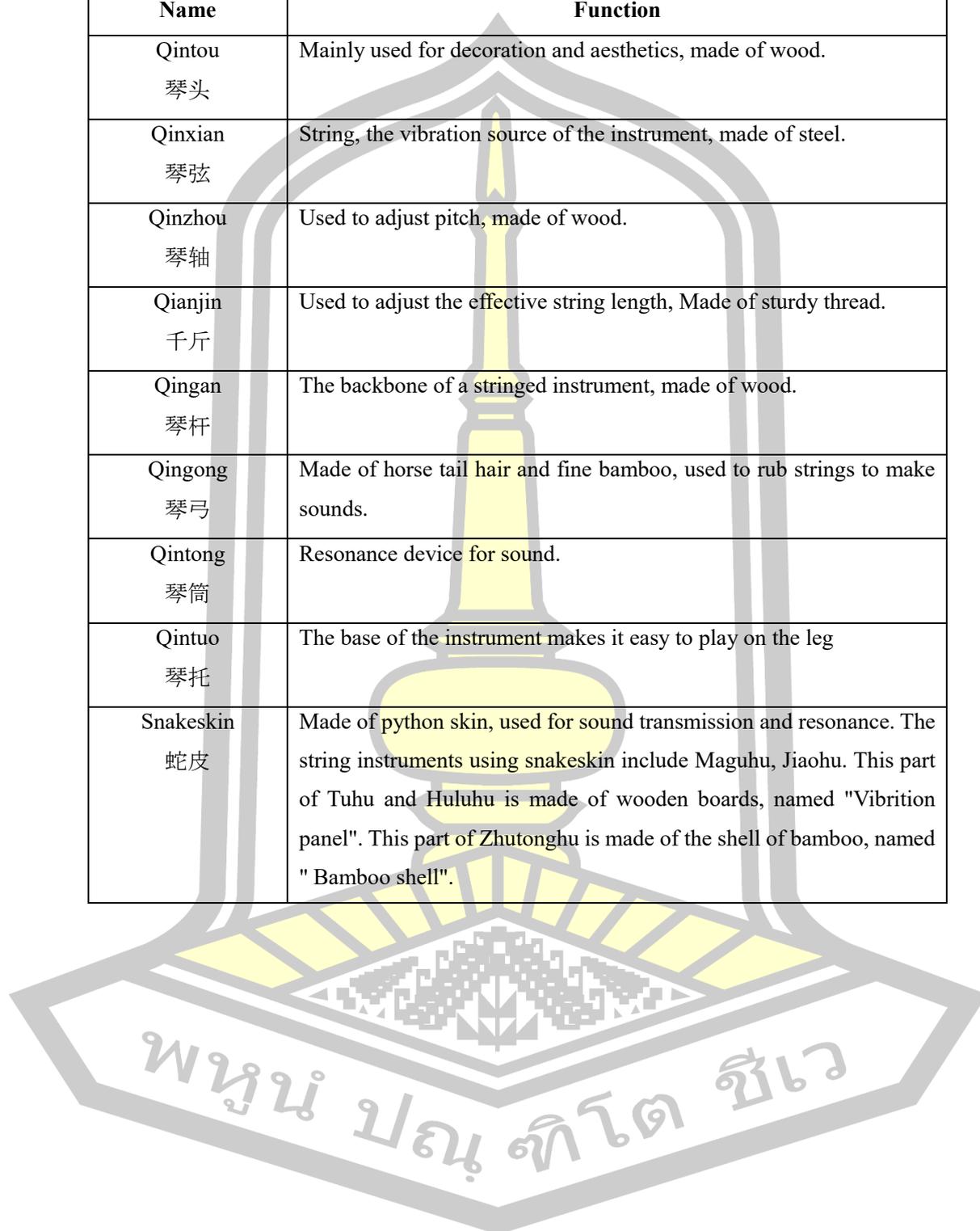
Appendix II main interview log

Time	Site	Informant	investigation content
August 7, 2021 - - August 10, 2021	Jingxi County, Baise, Guangxi	Li Xike, Zeng Dan	Investigate the production technology of Zhuang stringed instruments and participate in the production process.
June 28, 2022	Nanning	Chen Kunpeng	The function, preservation, and related research theories of Zhuang stringed instruments
June 30, 2022-- July 2, 2022	Debao County, Baise City, Guangxi	Huang Yige	Transmission and protection of Zhuang stringed instruments; Relevant data on the production of Maguhu; Situation of music creativity talents and performance talents
July 3, 2022	Jingxi County, Baise, Guangxi	Li Xike	Zhuang stringed instrument production concept, improvement ideas and experience, functions and roles, preservation and development
July 4, 2022	Jingxi County, Baise, Guangxi	Zeng Dan	Zhuang stringed instrument production concept, improvement ideas and experience, preservation, and development
August 9, 2022	(Telephone interview)	Chen Chuncheng	Functions and roles of Zhuang stringed instruments, transmission and protection; The Present Situation of Musical Instrument Teaching
August 15, 2022	(Telephone interview)	Xu Yanqin	The current situation of the spread of Zhuang stringed instruments in the local area and the understanding of their functions and roles, as well as some relevant cultural information, such as folklore

พหุ ม ประถมศึกษา

Appendix III Introduction to Various Parts of Zhuang String Instruments

Name	Function
Qintou 琴头	Mainly used for decoration and aesthetics, made of wood.
Qinxian 琴弦	String, the vibration source of the instrument, made of steel.
Qinzhou 琴轴	Used to adjust pitch, made of wood.
Qianjin 千斤	Used to adjust the effective string length, Made of sturdy thread.
Qingan 琴杆	The backbone of a stringed instrument, made of wood.
Qingong 琴弓	Made of horse tail hair and fine bamboo, used to rub strings to make sounds.
Qintong 琴筒	Resonance device for sound.
Qintuo 琴托	The base of the instrument makes it easy to play on the leg
Snakeskin 蛇皮	Made of python skin, used for sound transmission and resonance. The string instruments using snakeskin include Maguhu, Jiaohu. This part of Tuhu and Huluhu is made of wooden boards, named "Vibration panel". This part of Zhutonghu is made of the shell of bamboo, named "Bamboo shell".



Appendix IV Fieldwork Pictures



Figure1. Mr. Zeng Dan and Researcher (the first on the left is Zeng Dan)

Source:Wang Guangguo (2021)



Figure 2. Researcher is experiencing the creativity of Maguhu. In the picture, researcher is cutting bones. Source:Wang Guangguo (2021)





Figure 3. Mr. Zeng Dan is introducing the production techniques of stringed instruments to researcher. Source: Wang Guangguo (2021)



Figure 4. Researcher interviews Professor Chen Kunpeng. Source: Wang Guangguo (2022)

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Figure 5. Interview with Li Xike and Zeng Dan. Source:
Wang Guangguo (2022)



Figure 6. The researcher interviewed Mr. Huang Yige.
Source: Wang Guangguo (2022)



Figure 7. Mr. Huang Yige introduced his creating technology of Maguhu.

Source:Wang Guangguo (2022)



Figure 8. Researchers are measuring instrument data.

Source: Wang Guangguo (2022)



Figure 9. Mr. Li Sike is playing the Jiaohu.

Source:Wang Guangguo (2022)

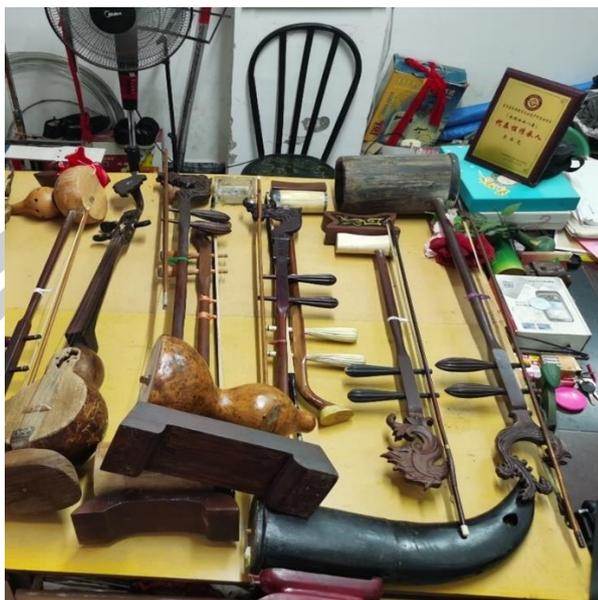


Figure 10. The stringed instrument in Mr. Li Xike's workshop.

Source: Wang Guangguo (2022)



BIOGRAPHY

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