



RESEARCH ON LIGHTING INSTALLATION ART DESIGN UNDER REGIONAL
CULTURE:CASE STUDY IN GUANGZHOU INTERNATIONAL LIGHTING FESTIVAL

DURING 2021-2023



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HAN LIMING

A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of DOCTOR OF ARTS
(D.A. (Arts and Culture Research))

Faculty of Fine Arts, Srinakharinwirot University

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BY

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This research aims to conduct a design study on light installation artworks incorporating regional culture at the Guangzhou International Light Festival. The research seeks to explore the presentation and methodology of designing light installations that are rich in regional cultural characteristics and provide guidelines for artists and creators in this context. The sample of artworks comprises 11 selected installations from the Guangzhou International Light Festival, while interviews were conducted with 12 audience members, six creators, and one curator who participated in the festival in 2023. The research findings indicate that the design of light installation artworks rich in regional culture involves a seven-step process. Tangible representation of visual symbols and the abstract expression of cultural elements emerge as effective means to showcase regional culture in light installation artworks. In conclusion, the study sheds light on the intricate process of incorporating regional culture into light installation art and provide valuable insights for artists and creators.

Keyword : Lighting installation art; Design methods; Regional Culture; Guangzhou International Light Festival.

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CHAPTER1

INTRODUCTION

1.1 Research Background

Lighting installation art originated at the beginning of the twentieth century, and it is loved by artists and the public as a new art category under the post-modernist aesthetic trend, fusing the characteristics of technology and culture (Qi, 2021). Since the birth of humanity, light has been accompanying our growth. Before Edison improved the light bulb, we could only follow natural light sources, such as the sun and the moon, which became necessary for survival and illumination. We imbued nature's light with divinity and revered and worshipped it. Before the introduction of electric light, fire was man's primary light source, and fire control was one of humanity's most significant early advances, providing us with light and heat in the darkness. Hundreds of years ago, we began to give regional cultural significance to natural light sources, such as the Water Lantern Festival in Thailand and the Lantern Festival in China, when lanterns could be viewed as the ancient art of light installation. The invention of the electric light bulb significantly impacted the night, changing its face and giving humanity complete victory over darkness. Electric light became the main form of urban lighting, and people began to use it to light up public spaces. The invention and improvement of various light source materials also pushed the development of urban lighting, providing artists with more choices when creating delicate installation art. With the emergence of neon lights, urban lighting entered the age of advertising, and this kind of light, a whole of technology and characteristics of the times, occupied the streets and lanes of the capitalist society with its unique gesture, reshaping the image of the city. In the 1970s, the United States invented the light-emitting diode (LED), which once again broadened people's choice of electric light source. Thanks to its compact size and various colours, LED light can be found everywhere in the city, whether in life, art, factories, or shopping malls. No matter what form the light is presented in, it is always one of the most essential forms of displaying regional cultural characteristics. In the light source, materials continue to change to promote the process of urban lighting; at the same time, light as the medium

and carrier of Lighting installation art in the local economy shows a unique potential, its rich cultural connotation, and economic value makes it popular with the public.

Local development policies have provided good soil for the development of Lighting installation art, making it increasingly important in the local night-time economy and consumer market. Some local artists have set up light and shadow institutes through the strong support of government departments and organised many Lighting installation art exhibitions in venues such as public places and museum exhibition halls. These initiatives have extensively promoted the development of delicate installation art. For example, in Germany, the Multimedia Art Centre in Karlsruhe holds a relevant activity every year, which will screen and carefully evaluate the artworks involved in the selection process and select the most creative and artistically expressive Lighting installation art from many works for exhibition. Due to the exhibitions' variety and professionalism, many artists and visitors are attracted to participate. Lyon, France, hosts an annual lighting festival in December with various themes, which has been going on since 1989. The days-long art event showcases technological and artistic beauty works, boosting the city's economy and making it a travelling mecca (Zhilu, 2022). The city has become a travelling mecca. In other places, light works are an essential part of the development of the local night economy. According to China's 2023 lighting plan for each region, the Qingdao municipal government has proposed to add light shows that are popular with the public and create several immersive light works to bring light art closer to the people to improve the quality of urban lighting and improve the city's image (Agency, 2023). Supporting local development policies and activities has enabled Lighting installation art to play an essential role in the local economy. It has demonstrated its unique charm and artistic value in various places.

The development of the local economy also needs to be fueled by Lighting installation art. Regarding light works, many cities generally have problems such as single form and lack of cultural characteristics. According to China's 2019 Night Tourism Market Data Report, 72.99 per cent of tourism enterprises provide no more than 30 per cent of the weight of night tour product categories with a single product supply. Nightlife

in places still stays at the stage of strolling through night markets, eating snacks, and viewing night scenery. The tourism market generally lacks night tour products that can reflect regional culture and integrate local landscapes ((CTRI), 2019). ROM the 2022-2023 China Night Economy Industry Development and Consumer Research Report, China's consumption has shifted from the traditional consumption model of bars and KTVs to a new model that includes light shows, cultural performances, and other new models (Consulting, 2023). In addition, with the development of the economy and the affluence of material life, consumers pay more and more attention to cultural and spiritual consumption, and the traditional forms of night entertainment activities can no longer meet the diversified consumer demand. As for the product supply of night economy, it should thoroughly combine culture, science and technology, art, and other means, deeply explore the connotation of regional culture, provide consumers with different forms, themes, and experiences of night entertainment activities, realise the optimal allocation of factors, and offer high-quality cultural products. In this process, regional culture, as an essential cultural resource of Lighting installation art, can provide rich cultural content and a spiritual core. Regional culture is unique, diverse, and territorial and has special conditions for creating cultural characteristics. Distinctive regional characteristics, unique cultural symbols, and various cultural forms, through reasonable development and transformation, can theoretically solve the current night tour lighting products in the form of a single lack of characteristics and cultural connotations. In addition, regional culture is constantly updated with social changes, and its characteristics determine that it will continuously change. Based on the integration of regional culture and night economy, making full use of the characteristics of the living nature of the region, combining with the characteristics of the times, and creating Lighting installation works rich in regional cultural characteristics can not only spread the regional culture, but also make the city night economy to maintain sustained vitality, and to achieve the mutual benefit of both sides (Sirui, 2022). The following is an example of a Lighting installation with regional cultural characteristics.

In addition, Lighting installation art has spawned new business models. For example, Japan's most famous team, TeamLab, is a successful interactive Lighting installation art studio committed to combining technology and art, creating many immersive light and shadow spaces. From a business model perspective, TeamLab's exhibitions have diversified ways of realisation. Their sources of income include copyright licensing fees, exhibition tickets, sponsorship fees, and sales of cultural and creative derivatives. According to the data of "Blooming Culture and Creativity," which is the cooperation partner of TeamLab, the copyright licensing fee of TeamLab in China is about 6 million RMB. The number of visitors during the exhibition period in a single city is between 300,000 and 500,000, with an income of about 60 million RMB and a net profit of about 30 million RMB. Lighting installation art has excellent potential for the development of the local economy (Qian, 2020).

From the academic background, the advantages and disadvantages demonstrated by a new art form that combines science and technology and art, such as Lighting installation art, have attracted widespread attention. As a form of convergence between science and technology and art, delicate installation art has become a research branch for relevant organisations worldwide. Government departments, institutions of higher learning, and history museums have set up their organisations to promote the healthy development of technology and art. For example, the News Media Laboratory of the Massachusetts Institute of Technology (MIT) in the United States is committed to independent and innovative scientific research, focusing on realism, intersectionality, originality, and open art forms. They have invited many art masters, interior designers, technical engineers, etc. They are committed to creating an open interdisciplinary innovation platform to promote the integration of technology and art, focusing on the intersection of digital media and art. The Cyber Art Prize at the Whitney Biennial in New York aims to discover and explore trends in new media art from a critical perspective and to present the latest technological artworks to the public. The Austrian National Broadcasting Corporation (ANB) and the Centre for Electronic Arts in Linz collaborated on the world's first digital art competition. These organizations

comprehensively demonstrate the importance of combining technology and art. Their fundamental aim is to make artistic expression more varied and widespread rather than hinder the development of art through the development of technology. The above institutions have provided a strong impetus for the rapid development of such art and provided the soil for the flourishing of Lighting installation art. The influence of art gradually penetrates all fields with the development of society. Globally, art colleges in many countries have incorporated the integration of technology and art into their curriculum plans. For example, the University of Huddersfield has set up a unique "Bachelor of Arts in Installation Art" program in the United Kingdom. In 2000, 90% of the exhibits in the graduation exhibition of the Maine College of Art in the U.S.A. were installation artwork because of the leading position of foreign countries in the creation and application of science and technology; the experimentation and transformation of such installations are relatively mature (Qi, 2021). China, on the other hand, is still exploring this area. China, however, is still in the stage of basic research in this area, mainly focusing on technical research and dissemination, and lacks a systematic theoretical framework and design methodology for Lighting installation art under regional culture.

Lighting festivals, which bring together outstanding light installations, have become a significant event, with the Lyon, Sydney and Guangzhou lighting festivals attracting worldwide attention. Among them, Guangzhou's international lighting festival in 2021 has attracted about 65 million visitors, making it the most visited lighting festival in the world (Yin & Dai, 2023). According to Yin's study, in 2021, the Guangzhou International Lighting Festival attracted predominantly younger visitors under the age of thirty, who accounted for 81.72% of total attendees. The majority of these visitors were employed in corporations or were students, making up 52.34% of the demographic. The provenance of visitors was mainly from outside the Guangzhou area, constituting 73.68%, while residents represented only 23.32% of the total visitor base. The success of the Guangzhou Lighting Festival is attributed to its rich regional cultural connotations,

well-established industrial chain, and favourable policy orientation, which makes it the best place for Lighting installation art research.

To sum up, the art of Lighting installation has been supported by local policies, academic research and the local economy in the development process and has a strong potential for development. However, a systematic theoretical framework and design method combining regional cultures have yet to be formed. Therefore, studying Lighting installation art under regional culture is of great significance.

1.2 Research Purpose

1. To study the cultural characteristics of Lighting installation art in different regional cultures.
2. To study the methodology of Lighting installation art design rich in regional cultural characteristics and to provide guidelines for relevant artists and creators.

1.3 Importance of Research

The importance of Lighting installation art design based on regional culture is reflected in the fields of art, culture, and economy:

1. The study establishes a body of knowledge related to Lighting installation art and regional culture to guide the design of contemporary, delicate installation art.
2. This study aligns with the context of the urban lighting era and the needs of government policy. It can assist in the development of the urban night economy.
3. This research can contribute to the development of education; there is no specific theoretical system for learning the art of light installation, and the results of this study can provide methodological guidance for students who are learning it.

1.4 Scope of Research

This research aims to study the cultural characteristics of Lighting installation art in different regional cultures as well as its design methodology, dividing the research sample into the following two parts:

Part 1: Research on Lighting installation art in Guangzhou using fieldwork methods. Examining the delicate installation art in the Guangzhou International Lighting Festival festival, focusing on analysing examples of works in the Guangzhou International Lighting Festival to be held from 2021 to 2023 to explore the characteristics and cultural expressions of Lighting installation art in the regional festival culture.

Part 2: Interviews and questionnaires were used to analyse the people involved.

The creators of Lighting installation art are interviewed to study their design methods and creative thinking journey and to explore the design methods of delicate installation art with cultural attributes.

In-depth interviews are used to investigate the consumer and participant groups of Lighting installation art, the design orientation of culture in the consumer group, and the crowd's favourite way of presentation.

The research scope of the Guangzhou International Lighting Festival is selected from the following eleven editions of the event from 2021 to 2023.

The First (2011): A Thousand Trees of Blooming Flowers at Night and the City Lights Going Out

Interpretation: Guangzhou at night is like a thousand trees in full bloom, while the city's lights are like candles about to go out.

Intrinsic Meaning: This theme blends traditional poetry with Please review the revised text below:

The Second (2012): Nature and the City in Symbiosis, Science and Technology Driving Cultural Development

Explanation: Nature and the city coexist harmoniously, while technology drives cultural progress and development.

Intrinsic meaning: This theme emphasises the harmonious relationship between nature and the city while highlighting the critical role of science and technology in promoting cultural development and expressing Guangzhou's pursuit of modernisation while focusing on ecological balance and cultural heritage.

The 3rd (2013): Illusory Guangzhou, City of Light

Explanation: Guangzhou is like a dreamland full of colourful illusions, a city of glittering light.

Intrinsic meaning: This theme shows the colourful charm of the city of Guangzhou, emphasising its prosperity and vitality as a radiant and vibrant metropolis.

The Fourth (2014): Trans-Guangzhou

Interpretation: Guangzhou's leapfrog development and the intermingling of cultures with neighbouring cities

Intrinsic meaning: This theme emphasises Guangzhou's leapfrog development and tells of the cultural intermingling with neighbouring cities.

The Fifth (2015): Light - Shadow

Explanation: This theme uses light and shadow as the theme of creation.

Intrinsic meaning: This theme highlights the artistic relationship between light and shadow, shows the charming interaction between light and shadow in the city, and expresses the beauty of Guangzhou at night and the depth of the city's culture.

The 6th (2016): Love of Light and Shadow

Explanation: It describes the profound emotion and relationship between light and shadow.

Intrinsic meaning: This theme emphasises the harmonious relationship between light and shadow, shows the deep emotions of Guangzhou people towards the city, and expresses the love and cherish of the city's night view.

The Seventh (2017): City Connections

Explanation: The theme is connectivity and communication between various cities.

Intrinsic meaning: This theme highlights how modern technology connects cities to the world, showing Guangzhou's important position in globalisation and its exchanges and cooperation with other cities.

The 8th (2018): 40 Years of Reform and Opening Up, New Era of Light and Language Flower City

Explanation: It commemorates the 40th anniversary of China's reform and opening and, simultaneously, shows the new era of Guangzhou.

Meaning: The theme commemorates the 40th anniversary of China's reform and opening and shows the changes and development of Guangzhou in this historical process, as well as the unique charm of Guangzhou as a "Flower City" and the appearance of the new era.

The 9th (2019): Auspicious Flower City with New Colours

Interpretation: Guangzhou, as a "Flower City", is full of auspiciousness and novelty and displays an outstanding appearance.

Intrinsic meaning: This theme emphasises the unique charm of Guangzhou as a "Flower City" and, simultaneously, shows the new outlook and outstanding achievements of Guangzhou in innovative development.

The 10th (2020): Happy Times, Charming Goat City

Explanation: It describes the happy times brought by Guangzhou and shows the charm of Guangzhou as a "sheep city".

Intrinsic meaning: This theme shows the unique charm of Guangzhou as a "Yangcheng" and emphasises the happy life and good times that Guangzhou brings to people.

Postponed (2021): "100 Years of Glory" (delayed due to epidemic)

Explanation: It commemorates the 100th anniversary of the founding of the Communist Party of China (CPC) in all its splendour.

Intrinsic meaning: This theme commemorates the 100th anniversary of the founding of the Communist Party of China (CPC) and shows Guangzhou's glorious achievements in this 100-year journey and its expectations for the future.

The 11th (2022): The Glory of Cantonese Rhyme - Future Creation

Interpretation: Showcasing Guangdong's traditional cultural flavor and Guangzhou's luster while looking forward to the innovative thinking of the future.

Intrinsic meaning: This theme emphasizes the traditional culture of Guangdong and the innovative thinking of Guangzhou, showing Guangzhou's expectations and

creativity for the future and demonstrating the importance of Guangzhou in developing regional culture and innovation.

1.5 Keyword Definition

1. Regional Culture: Regional culture refers to the unique cultural characteristics and traditions developed and evolved within a specific geographical area. It includes various cultural elements regarding values, belief systems, life, festive artistic expressions, customs, celebrations, architectural styles, music, and dance. As well as the cultural expressions of people's language, dress, food, living environment, etc. A variety of factors, such as geography, historical background, climatic conditions, resource status, ethnic structure, and political system, often influence the development of regional cultures. The provincial cultures of different regions will differ because of these factors, resulting in the uniqueness of the cultural landscape and local characteristics. Regional culture expresses a group's collective memory and identity, which is significant to residents. Regional culture can inherit and protect local history and tradition, reflect the identity of residents, and is also an essential resource for local tourism and cultural exchange. The diversity and uniqueness of regional cultures enrich the diversity of world cultures and provide opportunities for people to study and appreciate cultural diversity among different regions.

2. Lighting installation art: Lighting installation art is an art form that creates artistic and expressive visual effects in a specific space or environment through light sources and lighting technology. It uniquely combines elements of light, colour, material and space to create an ever-changing visual experience of light and shadow. Delicate installation art often uses different types of lighting equipment, such as light bulbs, LED lights, projectors, etc., to create light and shadow installations of various forms and effects through the design and arrangement of the artist. These installations can be indoor or outdoor, stand-alone works of art, or integrated art creations combined with other art forms such as architecture, landscape, and sculpture. Lighting installation art has been widely used and paid attention to in contemporary art, which enriches the form and language of art creation and provides the audience with the opportunity to interact

with and participate in the artwork. Through the creative use of light, Lighting installation art creates a unique spatial atmosphere and dramatic effects while exploring the relationship between light, shadow, time, and space, triggering people's thoughts and feelings about light and life, light and meaning.

3. Nighttime Economy: Nighttime economy is a general term for active economic activities and consumer behavior at night. It includes various commercial activities, entertainment and leisure, culture, and art, catering services, and other fields at night. Night-time Economy has essential economic and social significance for developing cities and regions. First, the night economy can promote economic growth and industrial development. Commercial and entertainment activities at night can attract people to go out and spend money, increasing commercial income. Secondly, the night economy can enrich cities' cultural and entertainment choices, provide nighttime entertainment and cultural activities, meet people's leisure needs, and enhance the attractiveness and competitiveness of cities. In addition, the night economy can improve the social vitality and safety of cities by increasing public safety and interaction through increased night-time foot traffic and social activities. With the changes in society and lifestyles, the night economy has become a focus of development and attention in many cities. Governments and relevant authorities usually take measures to support and promote the development of the night-time economy, such as extending business hours, providing transport, lighting up public areas, etc. At the same time, they should pay attention to the impact of night-time economic development on environmental protection, noise management and social order to ensure the sustainable and healthy development of the night-time economy.

4. Design Methodology: Design methodology refers to systematic methods and principles used in the design field to solve problems and carry out design activities. It is an umbrella term for a series of steps, tools and strategies employed by designers in the design process, designed to guide designers to innovate and create in an organized and systematic way. The core goals of design methodology are to effectively solve design problems, meet user needs, and enable creativity and innovation in the design

process. It provides a shaping approach to guide designers through information gathering, problem analysis, idea development, concept generation, prototyping, and evaluation and testing to produce a design solution that meets requirements ultimately. Design methodology can help designers work strip-by-strip during the design process, improve design efficiency and quality, ensure design results are consistent with requirements, and provide a common framework and language for team design collaboration. At the same time, design methodology constantly evolves and changes, introducing new methods and tools as design concepts and technologies are updated to continuously adapt to changing design environments and challenges.



CHAPTER 2

RELEVANT DOCUMENTS AND STUDIES

This section deeply explores the origin of Lighting installation art and its intermingling with regional culture. It will combine relevant theoretical foundations and take the Guangzhou International Lighting Festival as an example to reveal the expression of regional culture in Lighting installation art, with details as follows:

1. The origin and development of lighting installation art
2. Characteristics of lighting installation art
3. Theoretical concepts of regional culture
4. Exploration of the art and culture of lighting festivals in different regions
5. Chinese traditional lighting festivals
6. The influence of regional culture on the art of light installations - The Guangzhou International Lighting Festival is an example
7. Relevant theoretical research
8. Literature review in other relevant areas

2.1 Origin and Development of Lighting installation art

2.1.1 Light and Shadow Art and Installation art

2.1.1.1 Art of Light and Shadow

Light and shadow art is a kind of art that uses light as a medium to express creative ideas when creating art. Artists use light to manipulate the space and create a specific atmosphere so that people can get a complete visual experience and the feeling of beauty in the space (Ruige, 2019) (Ruige, 2019). The graphical representation of light art relies on the physical properties of light. In physics, light is considered a substance, which is essentially an electronic wave with a fixed range of frequencies between $3.9 \times 10^{14} \sim 7.5 \times 10^{14}$ Hz but can be seen by the human eye (Meyers, 2006). Light is a form of energy. When an object (light source) emits this energy and travels outward even without any intermediate medium, the process of emission and propagation of this energy is called radiation. Light travels in a straight

line, and the resulting visual effect is called ray. Shadow in light and shadow is the result of light production. The Japanese writer Junichiro Tanizaki mentioned in *Salute to Shadows*, "Where there is sunlight, there are shadows, and where there are shadows, there must be light (Jun'ichirô, 2001)." In *Shadow Salutation* thoroughly explains the relationship between light and shadow. Light is the condition for the creation of shadow, the shadow is the basis for the creation of light, there is light before there is shadow, there is shadow before there is light, and light and shadow are mutually exclusive. The development of the art of light and shadow is based on the study of its physical characteristics.

The development of science and technology has changed the form of creation of the art of light and shadow. Before the Industrial Revolution, humanity lived a lifestyle of sunset and sunset. The lighting of life depended entirely on natural light sources. Before the creation of artificial light sources, natural light sources, in addition to the role of lighting, also with local customs and beliefs and other colours. According to records, the Festival of Lights in China can be traced back to the Han Dynasty (202-220 B.C.), when the rulers lit lamps in front of Buddha statues to pray to the gods for a good harvest in the coming year (Shiting, 2021). The artificial light source was not used until the beginning of the 20th century. Artists did not use artificial light sources to participate in art creation until the early 20th century. Some scholars believe that modern light art has its origins in the experimental work *Kinetic Construction* by Naum Gabo, a compositional sculptor, who used iron rods and electric motors to form translucent planes that suggested the vital proposition of light art - the illusion of sight and sensation —the Illusion of Senses (Guanzhe, 2016). With the subsequent advancement of technology, more means were available to create light art. For example, the birth of the first electronic tube computer in 1946 brought about the application of new media, so the development of interactive art of light into the fast lane, with many interactive experiences for the emergence of works, the traditional "static beauty" by the "diversity" of the impact. The conventional "static beauty" has been impacted by "diversity" (Jin, 2020).

After the emergence of various new technologies and new lighting means, the artistic effect produced by the art of light and shadow in space permeates every aspect of life. In the current environment where people live, all the light and light have a direct or indirect connection with the light and shadow art produced in all corners of the city: urban public space full of regional cultural atmosphere of the lighting fixtures; museums, art officials in the use of light and shadow to create an immersive art space; commercial streets on all kinds of projections. This will summarize the characteristics of light and shadow art: firstly, light and shadow art is a kind of light as the primary medium of expression; secondly, light and shadow art is a kind of visual art. Visual art explains, mainly through the eyes, the visual presentation of artistic expression, with decades of technology and development. Recently, more forms of expression have been integrating visual and auditory multi-sensory and three-dimensional spatial image participation. This includes the embodiment of technology and artistic expression. The light and shadow art discussed in recent times is a high degree of integration of art and technology. It is a multidisciplinary co-operation art form.

2.1.1.2 Installation Art

Before the term "installation art" became a trend in contemporary art, it was called "environment", which Allan Kaprow used to describe his room-sized multimedia works in 1958 (Reiss, 2001). His works are often storytelling. His work is often storytelling, allowing participants and performers to experience the art, such as in Eighteen Happenings in Six Parts, where he will enable participants to experience different elements of the work, allowing visitors to paint like a painter and play an instrument like an orchestra. However, it is argued that the roots of installation art can be traced back to "The Fountain", created in 1917 by Duchamp, who was a representative of Dadaism. The work "The Fountain" is considered a challenge to traditional art because it does not express itself in the same way as conventional art. Classic art, such as painting and sculpture, is made and framed with traditional materials, whereas "The Fountain" is done by arranging ready-made objects from everyday life (Ziwen, 2022). The natural face of the work is just a tiny piece of art. Its realistic appearance is just a

urinal, but it also expresses the ideology of Dadaism, which expects to break the traditional art form to establish a new aesthetic world. In the 1970s, New York saw an explosion of installation as a form of art, breaking down the traditional barriers between the viewer and the artwork in a new way, and the possibilities of installation art were developed. Artists began to use whatever methods and materials they needed to create their work, taking advantage of environmental factors, such as a single interior, or utilizing various media, such as light, video and sound. In addition, the spaces in which exhibitions are presented have changed, from the old art galleries to abandoned factories, simple warehouses, streets, and curbs, wherever they see fit. Finally, 'environment' was entirely replaced by 'installation art' in 1994 (Reiss, 2001).

Installations are often difficult to define because their forms are highly malleable and may encompass a variety of media (Micollier, 2019). Installation art does not use a single medium like traditional painting or sculpture and even uses multiple media works to accomplish this (Ro & Kim, 2019). Installation art is not a single medium like traditional painting or sculpture. Installation art is often described as post-1960 artwork with specific attributes, such as containing a particular scene or process. It has been argued that installation art, like performance or minimalism, represents a process rather than a synonym (Allen & Combrink, 2019). Instead, installation art aims to give viewers a complex sensory or emotional experience through various mediums or scenic elements (Pelowski et al., 2018). Installation art usually does not aesthetically criticize conventional things as beautiful or ugly; instead, it focuses on the viewer's thoughts and reactions, both physical and sensory, to the elements within the installation art space. For example, in the Netherlands, there is an installation of art built on a bicycle path called "The Van Gogh-Rose Garden cycle path." The author used unique blue and green luminous materials to pave the whole path, and the entire path distance is about one kilometre; these brilliant materials will absorb light during the day and glow at night; it looks adorable at night, and the overall texture is like Van Gogh's brushstrokes. Riding along the path is like having a second encounter with Van Gogh, recalling his classics.

In conclusion, installation art can be recognized as an artistic way of expressing the author's ideas through non-traditional methods, which are modern and a product of technology and art. The purpose of installation art is to bring more ways of experience to the audience and explore more about social phenomena and social issues.

2.1.2 Definition and Development of Lighting Installation Art

As the name suggests, Lighting installation art uses light as a medium and carrier to express the author's intention. Lighting installation art is from the physical perspective to give the audience a visual experience and sensory stimulation (Liu, Liu, & Cao, 2013). Lighting installation art can be traced back to the earliest days of Lighting installation art. The earliest Lighting installation art can be traced back hundreds of years to lantern festivals, such as the Lantern Festival in China or the Loy Krathong Festival in Thailand, where inhabitants made different lantern shapes to celebrate the festivals. During these festivals, people would design lanterns with different shapes and styles to make them more aesthetically pleasing. Such lanterns are also rich in people's prayers for peace, avoiding disasters, driving away evil spirits, praying for love and other wishes, fully demonstrating the local humanistic style. With the progress of science and technology, the role of light is not only the role of lighting decoration; more and more artists or scholars will join the study of human behaviour, and more and more works are no longer created to meet the needs of human life but to spread the social and cultural and artistic value of the purpose. In terms of the popular Lighting installation on the market, Lighting installation is a device that uses modern technology and shows the visual characteristics of light art according to the social background and the characteristics of its installation art. Lighting installation art is constructed as an art space and interacts with the audience's behaviours, and the design thinking of the Lighting installation art also includes the audience's behavioural factor (Jin, 2020). The design of Lighting installation art also includes the behavioural factors of the audience (Jin, 2020). Nowadays, Lighting installation design includes the modelling design of the light source, the visual presentation of light, the selection of reflective materials and so

on. The reproduction of light or the creation of light art installations can be realized through new technological means. Combined with projection technology and interactive technology, Lighting installation art forms a unique art form, and these technical means can continuously create the appearance of art installations, bringing the audience pleasurable visual enjoyment and artistic experience. At the same time, the content of the artwork is presented culturally. At present, this kind of light installation, complete with visual effects, has gained the favour of artists and audiences, and its technological attributes closely linked with science and technology have made it a trend in contemporary art, which has also shown a linear upward trend in the form and quantity of light installations. Lighting installation works appear in all corners of busy cities, whether in shopping malls, squares and parks, large building groups or museums, and other confined spaces. Lighting installation can be seen everywhere and has developed into a trend in art. It has become a trendy art (Chhikara, 2020).

The etymology of the term "Lighting installation art" can be traced back to "Lumia", a term that describes the expression "light art". The earliest example of multimedia art can be traced back to 1921, with Ludwig Hirschfeld-Mack's "Farblichtmusiken" (coloured-light-music, i.e. a colour-light-music regulator). Meanwhile, in Hungary, Moholy-Nagy created the landmark Light-Space Modulator, an in-depth exploration of the interaction between light and space, marking the first time that "light" became a central part of the sculpture. " For the first time as a central element of sculpture. This work is an in-depth exploration of the interaction between light and space, marking the first time that "light" became a central element of sculpture.

Minimalism and Lighting installation art reached their creative peak in the 1960s when pioneering artists such as Yves Klein, Jean Tinguely, and Lucio Fontana took centre stage and were influenced by the transformations of such art schools as Constructivism and Bauhaus design. The influence of Constructivism, Bauhaus design and other art schools transformed Lighting installation art. These artists brought art from marginalization into everyday life, changing the traditional art forms of painting and sculpture so that the space affected by delicate installation art was no longer a linear

dimension but a multi-dimensional display sphere. In 1958, Heinz Mack (Heinz Mack) and Otto Piene (Otto Piene) founded the Lighting Installation Art Centre, the largest exhibition in the world. The Zero Group, founded by Heinz Mack and Otto Piene in 1958, turned art into a process of reinforcing the perception of nature. A representative work of art is Otto Piene's Light Ballet series, and the Groupe de Recherche Art Visual, founded in France in 1960, is also dedicated to creating and researching light installations. Founded in France in 1960, the Groupe de Recherche Art Visual was also dedicated to creating and studying light installations. Its prominent members, the French artist Francois Morellet and the Argentinean artist Julio Le Parc explored the relationship between light and movement, taking advantage of the technological background of the time. The relationship between light and movement was studied in the technical context of the time, and efforts were made to experiment with new visual phenomena. Under this trend, Op Art was born and played a crucial role in the development of light art. Focusing on applying optical illusions, it began the artistic practice of stimulating the audience's eyes with modelling, light matrix and colour contrasts, providing a multifaceted way of expression for the creation of light installations.

Today's Lighting installation art, combined with electronic information technology, uses automatic machinery and different lighting media to highlight the visual sense of technology. Artists, in the creation of a vast experimental space, can combine with the qualities of light itself to create a layered sense of visual effect; the rapid development of artificial light and shadow for the expression of Lighting installation art has brought unlimited possibilities, artistic tension and expressive qualitative leap, art forms have been innovative and breakthroughs. With the changes of the times, "Lighting installation art" has always been closely related to science and technology; this interesting phenomenon also stems from the uniqueness of the "light" medium, with the iterative development of industrial forms, media means, and lighting technology, "Lighting installation art" in maintaining its unique characteristics. With the iterative development of industrial forms, media means, and lighting technology, "Lighting installation art", while maintaining its unique form of expression, is also advancing in

tandem with science and technology and will form a fusion of art and advanced technology, and take a brand-new step forward in the practice of art.

The origin and development of Lighting installation art can be divided into six stages (Zhilu, 2022). The first stage: In the 1930s, the Industrial Revolution promoted the development of science and technology. Stage 1: In the 1930s, the Industrial Revolution promoted the development of science and technology, and artists tried to consider lighting effects in their artistic creations, creating the precedent of Lighting installation art. Moholy-Nagy can be called the first person to use an artificial light source to achieve aesthetic function modelling scenery; he created a "Light-Space Modulator" using spotlights and metal discs as materials, using the reflective properties of metal to create a light and shadow space (Qiushi, 2013). The work of Moholy-Nagy Moholy-Nagy's creations involves technical concepts such as optical, telekinetic, mechanical, and three-dimensional forms. These technical concepts foreshadow the core elements of future light art. In short, delicate installation art synthesizes light, material, site, and emotion (Lu & Yu, 2019).

After the Second World War ended, artists began to delve into installation art in the 1960s. During this period, artists' creations were strongly influenced by psychological factors, and they attempted to explore the effects of light sources and light fields on the human psyche by experimenting with them and combining this perception of psychological space with physical space, gradually replacing the psychological effects of physical space (Jin, 2020). In addition, instead of just using light bulbs as a medium, artists began to utilize machinery to create their works. They incorporated fluorescent and neon lights, which were popular at the time, into their works, combining them with imagery and technology, and making extensive use of projections and video imagery, to demonstrate a dynamic spatial aesthetic. Well-known artists of this period include James Turrell, Dan Frewen, Robert Rauschenberg, and Robert Irwin, whose representative works include Ballet of Light, Light Energy Engine, Statue of Light, Fence of Light, Breath, and Rodin Crater. At the same time, France also set up the "Visual Arts Research Group", specializing in creating and researching

Lighting installation art. Subsequently, artists from various countries began to explore delicate installation art, using multiple shapes, soft matrices, and colour contrasts to attract the audience. The interdisciplinary nature of Lighting installation art provides artists with a broader creative space and a rich source of inspiration.

During the 1970s, amid the prevailing societal milieu, there was an escalating focus on human rights. Artists deeply reflected this humanistic concern in their creations, often with environmental and political overtones. The field of installation art was further expanded, incorporating new art forms, such as film, video, and digital elements, which brought a new stylistic direction to Lighting installation art, producing works that were both absurd and humorous in various forms. Representative artists of this period include Bruce Nauman, Robert Morris, Soledad Sevia, Kron Yoshida and Luciano Fabbro, whose outstanding works include Diamond Shaped Room Filled with Yellow Lights, 5 Step Men, Untitled (Circle and Lights) and Italian Installation in Gold (Jin, 2020).

Throughout the '80s, advancements in technology led to the further refinement of lighting techniques. New lighting materials, such as lasers, light-emitting diodes, and halogen lamps, began widely used in light installations. Towards the end of the 1980s, sensor-based lighting technology emerged, with artists using computerized information systems to create light installations that interacted with specific environments and audiences. The works of this period show a more prosperous way of expression and a more comprehensive range of subjects, in which the representative artists include Robey, Torres, Paik Nam Who, Gary Hill, David Aylander and Dan Flavin, whose representative works include "Video Corridor", "Sudden Solo Load", "Wrapped Up World " and "TV Garden" (Zhilu, 2022).

In the latter part of the 20th century, specifically the 1990s, society shifted from an emphasis on human rights to humanistic concerns, which led to deeper thinking about social stability and the relationship between people and the environment and ecology. Against this background, installation art began to reflect the theme of self-reflection. Secondly, installation art was incorporated into the teaching system of

universities, gradually forming a complete educational concept, and making it an independent art field. The artworks of this period began to be systematized and widely used in media technology, showing concern for the environment. Among them, artists such as Cerys Wynn Evans, Cornelia Parker, Acconci, Jay Trova, and Tracy Emin were prominent. Their representative works included *Breaking the Code*, *Cold Dark Matter I*, *Partial Decomposition Diagram*, *The Re-conversion of the Marco Centre Exhibition Hall*, *Domestication of the Golden Liao Tower*, and *My Heart Will Always Follow You* (Jin, 2020).

With the rapid advancement of semiconductor lighting technology and related technologies at the beginning of the twenty-first century, LED-based digital spaces and interactive technologies have become more practical, and the use of technology in the art of light installations has obvious advantages. The advancement of digital technology made light a vehicle for art and technology, providing powerful tools for designers. The artworks of this period demonstrated their openness and compatibility. Among them, James Turrell, Robert Wilson, Olafur Eliasson, Anthony McCall, François Mollet, Janet Ackerman, and Guido-Van de Wever are among the artists represented in this period. Their representative works include *The Reign of the Sun God Arden*, *Rally*, *Alice in Bed*, *The Weather Program*, *Lights Reignited*, *Paroxysm*, *Workers Crying in Neon*, *1.8* and *No. 14*, *Home*. Passionate about new ways of expression, modern artists incorporate cutting-edge new materials into their work to create stunning visual effects. Advanced technologies such as mass-media lighting, moving machinery, and lasers have brought unprecedented creative techniques and unique visual effects to art creation. And various mediums, such as indirect lighting, direct lighting, and video, have been used by artists to create artwork that breaks out of its original value role (Jin, 2020).

In general, Lighting installation art has developed from traditional light and shadow art and installation art. Unlike traditional art, which relies on natural resources and the creator's skill, the Lighting installation combines modern technology to show more possibilities in visual effects and the design process (Wang, 2021).

2.2 Characteristics of Lighting Installation Art

2.2.1 Forms of Expression and Identity

Light art in the installation art field innovatively transcends traditional art's boundaries due to its use of materials, and it successfully integrates the creation of atmosphere, emotional communication, and interactive experience for the audience. This art brings the audience a deep visual feast, which breaks through the boundaries of the physical environment and skillfully exploits the physical and non-physical properties of light. Lighting art gives objects a dynamic, flowing visual effect with the help of reflection, direct light, refraction, and other techniques. Artificial light, such as fluorescent lamps, neon lights, LEDs, holograms, fibre optics, lasers, and computer technology, constitute the main source of materials for Lighting installation art. Particularly noteworthy is LED technology, which, as a light-emitting semiconductor, not only covers a broad spectrum from ultraviolet to infrared but can also be electronically controlled to produce up to 16.8 million colours. When combined with sensors, LED technology enables artists to create art spaces that are in harmony with human behavior (Jianqiu, 2019).

The expression of Lighting installation art from the nature of light can be analyzed from the direct reflection and refraction of light as an entry point:

The phenomenon of light propagation along the straight line of research and application of its special physical properties, laser, spotlight, photography lights, and spotlights are the application of direct light, while the laser in the Lighting installation art show can highlight the space of the tandem, such as the artist Carlo Bonattini often use the laser in the space to set up many laser Launching point, to create a simple and clear visual effect, light, light beams of strong and contrast, in the architectural space to construct the intertwined form, in the space of the wall of the question back and forth, forming a visual illusion through the wall, endowed with a sense of spatial continuity of the performance of the tension (Lu & Yu, 2019). In his works, he focuses on the diversity and continuity of visual space and digs deep into the relationship between lines and monotonous colours. Since 1996, he has always used light to cut the space to create a sense of hierarchy. Light creates an illusory spatial mood, and the straight-line form of

light is hard and dry, penetrating the void with a sense of finality. The same research on the use of light direct art from Canadian James Nizam, his artworks through the exploration of the relationship between laser and architecture, the creation of the vagaries, the use of lasers to create a beautiful geometric pattern, suspended in the dark space, the formation of the visual effect of the real existence. In his works, light is twisted into specific geometries, forming movement and deflection trajectories, which are precisely positioned and corrected to make secondary conceptual cuts in architectural space. His works embody the physicality and movement of direct light, transforming dematerialization into objective existence, with beams of light combining into geometrical shapes that complement each other and the space. They are undoubtedly reminiscent of the artists Gordon Matta-Clark and Robert Owen in their form. It can be said that Nizam draws on the former wandering in abandoned buildings through the geometric cutting of the walls to complete the transition between the realization of the broken and the standing, devoted to the creation of natural phenomena and man-made geometry of the wonderful collision between the series of Thought Form, these sharp rays of light suspended in the darkness of the question, breaking through the limitations of time and space.

The reflective effects of light can be divided into two types: specular and diffuse. In nature, we commonly see reflection phenomena such as reflections on water or glass surfaces. Reflection of light means refracting light as it travels due to the encounter with an interface. Since specular and diffuse reflections have different light intensities, they produce different visual effects. In Lighting installation art, combining light with a variety of materials and through reflection can expand the visual space and thus achieve a dramatic artistic presentation. The famous Korean installation artist Ahn Hyun-Chul is a representative figure in the study of specular reflection. His works extensively use the interaction between light and mirrors to create intriguing visual effects. Through the reflection of light by mirrors, he constructs endless visual depths, presenting both a dreamlike effect and reflecting the artist's ongoing concern with exploring infinite space. Combining geometric elements and meditative ideas, he uses

mirrors to form scenes of seemingly infinite extension. At the same time, he uses the physical properties of light, colour and visual illusion in conjunction with light art to explore the infinite expansion of space. To realize this artistic concept, Ahn Hyun-Chul combines LED, fluorescent and UV lights with mirrors or one-way glass and then uses materials such as wood, concrete and acrylic to construct the peripheral structure. The variation of lights produces a multi-dimensional sense of space, providing the viewer with a strong visual experience. The endless visual extension of his Lighting installation works provides the viewer with a rich space for imagination (Yuxia, 2019).

The phenomenon of diffuse reflection of light is an optical effect that occurs on rough surfaces. This effect is prevalent in our everyday environment. Artist Doug Wheeler B, born in 1939, is credited with pioneering the "Light and Space" art movement. His artwork is avant-garde and innovative, uniquely exploring the perception of space, volume, and light. He cleverly places neon lights behind his canvases, filling the walls with their light and making the paintings become one with the walls. In his light installations, he removes the traditional structure of the room and expands the visual space with light, guiding the viewer into deeper contemplation of philosophies about time, infinity, and the universe. In 1965, Doug Wheeler B. used acrylic panels instead of traditional canvases and placed neon on the floor to allow light to be the centrepiece of the work. Light creates a link not only with vision but also with our perception of the environment. The texture on the ceiling and walls reflects the neon light, creating tiny points of light that soften the overall effect of the light. When the viewer enters such a space, they are first attracted to a large, brightly lit wall, which is then surrounded by gently lit ceilings and side walls. As one explores deeper, the wall seems to become illusory, as if one is in a material space filled with light, providing the viewer with a unique sensory experience.

Refraction of light describes the deflection of light from one medium into another due to a change in the speed of propagation. It is like light reflection that occurs at the junction of two media but differs in that light refraction enters the new medium, while light reflection bounces back to the original medium (Jianqiu, 2019). The path of

light refraction can be reversed. Contemporary artist, Tokujin Yoshioka, specializes in the use of light refraction in his work. He makes extensive use of white and transparent materials and skillfully blends Eastern philosophy with modern design. To him, the seemingly clear and colourless light contains within it a myriad of colours that are both brilliant and vibrant. His work attempts to visualize people's experience of nature and to re-articulate that experience using sensory elements such as light and sound. His work *Spectrum* explores mankind's admiration for light. Inspired by the relationship between man and nature, this work creates an almost mystical journey into light. Ever since Isaac Newton's first experiment with a prism proved that sunlight could be broken down into different colours, there has always been a keen interest in the relationship between light and colour. *Spectrum* is an installation of 200 prisms mounted on a wall, the properties of which allow them to refract a brilliant spectrum of colours. Perfectly demonstrating the beauty of nature, the flow of time and the charm of light, this installation uses prisms to reveal the wonders of rainbow light, hoping to stimulate sensory perceptions and bring deep feelings to the viewer.

2.2.2 Characteristics of Lighting Installation Art

No matter which forms of Lighting installation art, it is a medium for artists to express their thoughts. However, from the perspective of the audience's experience, it has the following characteristics.

Lighting installation art can be considered to have multi-dimensional and temporal characteristics (Xiaoxiang, 2012). It can be seen from its earliest name of "environment". This can be seen from its earliest name, "environment". In essence, Lighting installation art and "environment" have similar commonalities. Most traditional art remains on a two-dimensional level, and your brain will always tell you that you are still in your original world. But light installations offer a completely different kind of immersion, where your eyes, ears, brain, and other organs are affected by the surrounding medium, making you feel like you are in a completely different world. *Infinity Mirror Rooms* is a work made by Yayoi Kusama in 1965, using many elements in a space surrounded by

mirrors, through which a seemingly endless dream world is created, allowing the viewer to get lost in the repetition of the endless space.

Combrink argues that narrative, on the other hand, is a major characteristic of contemporary Lighting installation art and argues that Lighting installation art does not simply tell a story but builds stories to guide the viewer (Allen & Combrink, 2019). In terms of narratology, telling a story world is a technique of the work, which is a fictional space that accounts for the context of the work and aims to create the atmosphere that the author wants. For example, in Lozano's 2010 work *Solar Equation*, the author's context is the advancement of the field of astronomy in the period in which the work was made, which is then presented to the audience in the form of art, leading them to pay more attention to astronomy.

Emotionality can be seen in the way authors convey feelings and ideas to their audience through their work. The famous British designer Paul Cox sackie said, "Fascinated by the light contains a variety of characters, emotion is the connotation of light", emotion is very important for art. On the one hand, the artist is not only through the art to meet people's aesthetic needs, and the works often pass through the content shown to convey information to meet the audience's cognitive needs. Therefore, good artwork does not only stay at the level of aesthetics but also expresses ideas that need to be experienced and thought about by the audience. For example, Gerry Hofstetter's work in 2003 put the image of polar bears on a huge ice cube; the ice cube and the projection are beautiful, but hidden in the work, the author hopes that we can pay more attention to global warming and the melting of the glacier is the real intention of the author. On the other hand, emotionality is also a part of installation art, which unconsciously creates a spatial atmosphere for emotional communication; it is a way for the author to convey emotions to the audience. In 2020, Marina Abramovic presented her work *7 Deaths of Marica Callas*, a video installation that combines the love story of the author and another artist, and she hopes that the audience can feel the emotional resonance in the images (Ruomu, 2016).

Participation is another distinctive feature of Lighting installation art, especially in its interactive aspect. In contrast to traditional art, in Lighting installation situations, the viewer can even become part of the work. Lozano-Hemmer's *Body Movies*, for example, uses 400 - 1800 square meters of interactive projections to change the appearance of buildings and public spaces. The main methodology of the design is to pre-project thousands of portraits onto the building's screens using automatically controlled projectors. These images were Image by cameras as viewers walked through the area. The authors also set up a strong light source at ground level to increase the height and area of the pedestrian shadows. Depending on the difference between the distance between the pedestrian and the light source, the height of the pedestrian shadow can reach from 2 meters to 25 meters. When all the portrait images are displayed, the system will re-project new portraits on the surface of the building for circulation. This work also expresses a critique of a social phenomenon, which makes people start to consider the importance of distance between people who are always walking too close or too far away from others. From the viewer's point of view, the sensory engagement of the installation is also diversified, including visual, tactile, and auditory senses. For example, the work *Light Chords* was made by Teamlab, a team that has only been established in the last two decades and whose main staff is made up of both engineers and artists. *Light Chords* (2017) offers multi-sensory interaction with the audience, where people are immersed in colourful light, and the audience can trigger notes by touching the light in the space, it is conceivable that multiple audience members can completely collaborate with each other to make a beautiful piece of music in the space.

2.2.3 Expression of Lighting Installation Art

2.2.3.1 Visual Personality Expression

Light, as the primary visual tool that connects us to the outside world and gives us a sense of our surroundings, is a unique and vivid means of communication (Meyers, 2006). With the development of society and the advancement of technology, the role of light has gone far beyond the mere function of illumination, and it has also presented an incomparable charm in the field of public art. The use of light

and shadow as a tool for artistic expression has brought us unprecedented innovative art forms. Compared with traditional materials, light as a material to create art forms more fascinating, and more able to touch people's hearts. In the seemingly illusory light and shadow, we can touch a deeper level of reality, this combination of real and fantasy qualities, so that the light in the creation of art has a unique charm that cannot be compared with other materials.

The charm of Lighting installation art largely stems from the unique visual experience that light brings. Here, light is no longer just a simple illumination tool, it becomes the core of the art installation itself, with the ability to shape and change the atmosphere of the space. It uses its unique characteristics to provide us with a rich and wonderful artistic perspective (Alves, 2007). Changes in light, both in terms of angle and intensity, affect our visual perception of objects, providing a creatively processed visual experience that is full of originality and freshness. When we talk about the shaping power of light, its definition of space, its treatment of form, and even the various effects it can create, each experience is unique, as is the human brain's acute perception and precise interpretation of the outside world. Light can create stunning visual illusions, a uniqueness that no other material can match. For example, when light undergoes refraction or reflection, it can combine with other substances to create a dazzling visual effect, typically known as a "phantasmagoria". When light interacts with objects, such as water, it can trigger a series of visual effects, such as ripples on the surface of the water, which, when combined with refraction, reflection and scattering of light, can create dynamic, life-affirming images of light and shadow. The interaction of these images, forms and light brings us a perfect combination of light and water, providing a breathtaking visual feast. This blurring of the line between illusion and reality allows us to re-examine the definition and limits of vision. The use of light as an artistic medium is of the greatest value in its ability to aesthetically resonate in harmony with the actual object.

2.2.3.2 Multi-dimensional Spatial Design of Light Installations

Installation art is originally a kind of three-dimensional art embodied in three-dimensional space, but after fusing with light, it transcends such traditional boundaries (Micollier, 2019). Under the action of light, the original fixed spatial sense is reshaped, expanded, or condensed, so that installation art is no longer just a three-dimensional expression, it touches the intertwining of time and space, i.e., the four-dimensional spatial dimension. And the addition of light gives new life to the installation art, transforming it from a single perception to a vibrant experience. The combination of installation art with light is like opening the door to a new dimension, which encourages the viewer to go beyond the traditional sense of space and time and experience a strong visual effect. The light and shadows brought by the lighting not only increase the layering of the installation but also create a rich visual contrast through the unique treatment of lighting technology. From a variety of different light sources and lighting conditions to changes in lighting angles, all create a unique light and shadow effect in the space. It is this interaction between light and shadow that adds a three-dimensional depth to the installation, making it more vivid and interesting. When the audience goes deeper, they can not only feel the magic of the space but also gain insight into the design thinking and deep creative concepts behind the artist.

Under the wave of advanced technology, light installations have crossed physical space, time, geography, boundaries, and cultural barriers and gradually integrated into our daily lives (Min, 2020). Nowadays, the popularity of the Internet makes people in any two corners of the earth seem to dialogue with each other, and the sense of distance is almost zero. The concept of space in installation art has also undergone a profound revolution. Nowadays, this space is no longer just the physical space we are familiar with, but has crossed over to a broader, abstract dimension, which can be expanded infinitely thanks to the support of science and technology. Taking artist Cai Wenying as an example, she creates dynamic installations that incorporate lighting technology to interact and communicate with the audience, guiding them to think and experience along with the rhythm of the installation, further capturing their emotions and thoughts. It is a comprehensive experience that combines visual,

psychological, and sound as if leading people to step into a new virtual world. Similarly, the Museum of Contemporary Art in Los Angeles has adopted this advanced lighting technology to construct magical objects in the virtual space through the precise arrangement of light patches and the interweaving of light, bringing endless surprises and marvelous experiences to everyone who steps into it.

2.2.3.3 An Immersive and Interactive Lighting Experience

Immersive experiences have gradually become a major feature of digital art, whose main goal is to break the distance between the viewer and the work, allowing the viewer to be physically and mentally involved in the environment in which the art is created (Min, 2020). Through the virtual effects shaped by digital technology, it transcends the boundaries of real-time and space, providing a completely new form of interaction. At the same time, with the advancement of technology, this immersive experience is no longer limited to fixed scenes and time. In terms of spatial design, the focus of modern installation art is not just on creating a stand-alone artwork but on considering holistically how to interact with the audience and how to make the audience part of this art experience. Through the integrated design of lighting, sound, movement and other elements, the audience is brought into a special art atmosphere that seems to be divorced from the real world, as if they are in another dimension. The power of the light installation, specifically, is that it can be combined with computer technology to reshape our perception of time and space. In such an environment, the audience can experience multiple scenes at once, or experience different ways of interacting within the same scene. The Lighting installation no longer simply illuminates the space but becomes a programmable and interactive medium. It can interact visually, audibly, and behaviorally with the audience, providing a multi-layered and multi-dimensional immersive experience.

The immersive experience of light installations does provide the viewer with unprecedented sensory stimulation. The experience often induces visual perception in the viewer with light transformations and creates associations between sight and sensation, i.e., the intermingling of sight with other senses. The design makes the viewer

feel that he or she has entered a completely different world, a world without a clear sense of direction, without boundaries, always changing and expanding. In this world, the transformation of light can change the viewer's sense of direction, while the infinite extension of space gives a sense of being in a virtual multi-dimensional space (Sookkaew, Chaikaew, & Changjaikla, 2023). A vivid example of this is an artist setting up a special installation in a confined space, where a drop of water falls from the air and lands on a Lighting installation like a slow-motion shot, and the whole space is surrounded by this simple but mysterious dynamic light and shadow. In this quiet, empty, and directionless space, people can be completely immersed in this magical four-dimensional space experience, observing, thinking, and perceiving the flow and change of time and space. The interaction of light installations and water drops on the floor adds to the magic of the space, making the whole space quiet and deep. This special experience makes the audience feel as if they are in a world where only they and time exist, a very special immersive experience where one can completely relax and perceive the space, and the interaction of the lights and the water drops, with their whole being. In the same way, TUNDRA Studio's light installation, *The Day We Left*, is such an immersive experience. In the space of 150 square meters, the artist uses LED lights and projection equipment to create a galactic-like light effect that allows one to forget about the hustle and bustle of the city and fully engage with this beautiful installation. *The Day We Left* emphasizes the subtle relationship between people and people and between people and nature, and provides people with endless space for reflection, allowing them to think about their relationship with the world and feel the flow and change of time and space in the experience.

2.3 Theoretical Concepts of Regional Culture

2.3.1 Definition and Characteristics of Regional Culture

Regional culture refers to the regional cultures that have developed in different regions over a certain period. This regional culture is always integrated with the local natural environment and influenced by local historical traditions, so the regional culture of each region is unique and recognizable (Mao, Lu, Sun, Zhang, & Guo, 2024).

Regional culture is usually a traditional culture that has been handed down from history and still plays a role today. This culture is deeply rooted in the region to which it belongs, has its characteristics and has been passed down to the present day, due to the different geographical structures, environments and climates of different regions have formed different cultures, so these cultures can reflect the ecology, folklore, traditions, and expression of the region's habits (Mo & Chandhasa, 2023). The natural, human, and social environments. The natural environment, the human environment and the social environment are the three dimensions of regional culture, and the content of these three dimensions contributes to the formation of the regional culture of a region (Liangyong, 2009). The regional culture of a place will change over time. The regional culture of a place over time with the different dimensions of environmental change or extinction, is deeply embodied in human activities, and accompanied by human behaviour, profoundly affects the political, economic, and cultural society, and becomes synonymous with local culture.

2.3.1.1 Recognition of Regional Cultures

The formation of regional cultures is not only a product of the natural environment, but also the result of the interweaving of historical, social, political, religious, and other factors. The culture of each region is the culmination of various events, changes, and exchanges in the course of its history. In the Middle East, for example, pepper, spices, and lamb are the result of the desert climate and nomadic traditions of the region. France's wine culture, on the other hand, benefits from its mild climate and geographical location, which is suitable for the growth of grapes. These food cultures are deeply rooted in their specific geographical, historical, and social contexts. The same is true of art and music. Indian classical dances, such as the classical Kathak, incorporate millennia of religion, history, and local customs. And Africa's drumming traditions reflect the structure and spirituality of its tribal societies. And this identification of regional cultures is not just about superficial characteristics. It is more about deep-seated values, beliefs, and worldviews. To an outside observer, one may only see surface markers such as food, clothing, or art forms. But for members

within the culture, these are expressions of their way of living, thinking, and interacting with the world (Sun & Zhu, 2015).

2.3.1.2 Uniqueness of Regional Culture

Under certain specific regional conditions, culture and the environment form an interactive relationship that gradually shapes regional cultural traits. The formation of such traits is a long and continuous process, which has been passed on and honed through countless generations, and eventually takes on a stable form. Within a specific geographical area, people can observe the unique ecological characteristics, traditional customs, and cultural expressions of the local area. This cultural form, which is deeply intertwined with the environment, has distinct geographical characteristics. Taking geographical characteristics as an example, when mentioning Northern Europe, it is natural to imagine a silver-white world of ice and snow.

2.3.2 Formation and Content of Regional Culture

The shaping of regional culture is influenced and driven by a variety of factors (Yu, 2012). For example, the regional cultural characteristics of ancient China can be outlined as common customs and a common language. For the formation of regional cultures, the following aspects can provide us with in-depth explanations: first, in terms of social background, geographical features, ethnic composition, and unique customs of each region can contribute to the formation of regional cultures; second, the perspective of regional political strategies, after the stability of local regimes, local policies and administrative decisions further consolidate the differentiation of cultures; furthermore, in terms of ideological and cultural dimensions, the regional dissemination of the ideas of famous scholars undoubtedly reinforced these differences from the perspectives of philosophy, cosmology, and values.

The reasons for the formation of regional cultures can be summarized in three points: the natural environment, regional politics, and socioeconomics. The natural environment provides the material roots of regional cultures. This includes geographical location, climatic conditions, and rich natural resources. The far-reaching influence of politics on culture is easily overlooked. This influence is often slow and unnoticeable. But sometimes political rights have a decisive influence on culture, and the direction of

policies often determines the direction of people's livelihoods, which are epitomized by the regional culture. In addition, the evolution of regional culture is closely linked to social structure and economic and technological progress. With the process of modern economic globalization, culture is also gradually becoming globalized. The intermingling and fusion of cultures promote cultural evolution and innovation but may also lead to the loss of the uniqueness of certain cultures under the impact of stronger cultures. Therefore, the economy and socio-economy are both a driving force and a challenge for regional cultures, which can be regarded as an edged sword with a dual role. The economy and socio-economy can be seen as a double-edged sword (Yu, 2012).

The content of regional culture is composed of several aspects. In her master's thesis in 2012, Yu Yan argued that the content of regional culture is composed of climate, geography, natural environment, and historical lineage, which includes material history and immaterial history (humanistic and social phenomena). Regional culture consists of dialect culture, food culture, folk beliefs, folk architecture, regional style, migration influence, and zoning influence. Regional culture provides rich content resources for artistic creation (Lina, 2022).

2.3.3 The Link Between Regional Culture and Art

2.3.3.1 The Relationship Between Art and Regional Culture

The relationship between regional culture and art is inextricably linked, and in *The Origins of Art*, Grosset explicitly states that "where art originates, it is where culture originates." This view emphasizes the close connection between culture and art. This relationship has been established from the moment mankind began to construct cultural entities from the beginning of primitive culture. Primitive culture, also known as prehistoric culture, represents the material and spiritual culture created by human beings before the advent of writing. This includes simple material culture, primitive customs, habits, religions, and arts, as well as the cultures of certain primitive peoples that still exist today.

Artistic works are deeply influenced by the culture of the region from which they originate in terms of their spiritual connotations and values. For example, the elegance and purity of Yueju Opera, the passion and exuberance of Duorenjuu, the high

and sadness of Shaanxi folk songs and the distant melody of Horse-head fiddle are all closely related to the cultural background, folk customs, and geographic environment of the places where they originated. These art forms are not only the reflection of regional culture but also its disseminator. Through the folk songs of northern Shaanxi, we feel the barrenness of the Loess Plateau and the hardship of people's lives; the Ma Touqin takes us to appreciate the vastness of the grassland and the lightness of the horse's hooves; and the Duet gives us a taste of the bounty of the black earth and the simplicity of the local folkways (Furong, 2012). The two-player song is a great example of how the two-player song can be played.

"There are no people without art. We know that even the roughest and poorest tribes devote much of their time and energy to the arts. If the energy devoted to the creation and enjoyment of beauty were unprofitable to the practical and important tasks of life, and if the arts were no more than idle games, then the inevitable elimination must have long ago extinguished those peoples who wasted their energies on unprofitable things, in favour of those who had practical talents. I am afraid that the arts would not have developed to the depth and richness which they have now attained. If art were nothing but a game of nonsense, then it would be necessary to eliminate and exterminate those who waste their energies on unprofitable things in favour of those who have practical talents; and it would not be possible for art to be developed to the depth and richness it is now (Grose, 2005)." This paradoxical judgement of Grose proves that art is an important part of culture and that the two influence and promote each other.

2.3.3.2 The Impact of Art on Regional Culture

Art is a bridge of cultural communication across time and regions. In the process of constructing regional culture, the culture will be presented artistically with sensual images. Compared with philosophy, religion, morality, ethics, law, customs and so on in the cultural value system, art, to express human emotions and communicate with the outside world, can cross the gap between nations, countries, and races, and achieve dialogue among different cultures. Tang Junyi mentioned in "The Spiritual Value of Chinese Culture" that "the art culture based on sensation, combining emotions,

situations, perceptions and other psychological functions, contains rationality and wisdom that can be grasped by intuition, and what is directly presented in the art culture is the cosmic mood that covers other people and external objects within. "Therefore, the ultimate value of art goes far beyond the individual artist and the time and environment in which he or she lives. Throughout the different times and backgrounds of cultures, so that they are connected, produce exchanges (Junyi, 2006). The artwork of the artist is a reflection of his or her own personal and cultural contexts.

Art can be very real feedback of regional culture. The British cultural scholar Toynbee in his book "Historical Studies" on the characteristics of art "beyond time and space". Pointed out: the inheritance and mutual contact of art is not like the political or legal system, which must reflect the actual needs of a specific space and time, "the relationship between man and reality expressed in art is completely different from the relationship between man and reality established in other fields of human activity. Art synthesizes human perception and thought, so that whatever the role of time and space in the creation of art, the potency of the insights contained in art transcends the temporal and territorial nature of historical time and space at the time of creation". "The essential element of art is that part of it, which is beyond its time, the 'real' which is always comprehensible, revealing, even mysterious" (Toynbee, 2001).

The development of today's culture makes the cultures of various nationalities disintegrate and reconstruct with the changes of time and space, and the whole human culture shows the trend of birth, creation and evolution in time and the trend of integration and construction from division to merging in space, and the regional art, as the deepest essential existence of the people in the region, plays a role of a bridge and fusion; in the new era, the regional art provides a base and a bridge between each other with its commonality of human sensibility and spirit. In the historical process of constructing regional culture in the new period, regional art provides a base and a bridge for the construction of regional culture with its commonality of human sensibility and spirit. Through this base and bridge, we can make regional cultures reach a new height by seeking common ground while reserving differences and

accommodating each other (Furong, 2012). The following is a summary of the findings of the study.

2.4 Exploration of the Art and Culture of Lighting Festivals in Different Regions

2.4.1 Overview of Lighting Festivals in Different Regions

Lighting festivals are the most active places for lighting installation art, and they are also a result of the development of Lighting installation art. Lighting festivals in cities are made up of Lighting installation art in public spaces as well as holographic projections on architectural surfaces, and they have become a major feature of urban entertainment and tourism, attracting millions of visitors each year. Early successful lighting festivals in places such as Lyon in France and Eindhoven in the UK have prompted many local governments to start organizing similar events. Stevens and Shin argue that lighting festivals are organized in cities for two purposes, one is for city managers and marketers to attract tourists and shoppers and to promote the rebranding of the local city and its economy, and the other is for the development and promotion of the regional culture (Stevens & Shin, 2014) Some scholars believe that such lighting festivals can enhance the destination's urban image and promote and stimulate tourism development (Quinn, 2020). Therefore, more and more cities have started to organize lighting festivals, some of which are outlined below:

Lyon Festival of Lights, France: The Lyon Festival of Lights, originated as a religious tradition during the Black Death in Europe, when the plague threatened Lyon and citizens placed lit candles on their windowsills after the disaster to thank the Virgin Mary for her blessings. This tradition has continued and has evolved into an annual commemoration around 8 December when the citizens light candles and march in procession to the church. 1989 saw the launch of the Public Lighting Program by the City of Lyon, in collaboration with technological and artistic organizations, to adorn the city's monuments, historic buildings and cultural sites with light, to make the city a better place to live at night, as well as for the benefit of its people. In 2004, the second phase of the Public Illumination Program was launched. The organizers invited light planners, artists, and architects to devise a creative design to transform the festival from a purely

religious celebration into a visual event of contemporary art using light as a medium. Since 2005, the four-day Lyon Festival of Lights has attracted millions of visitors every year on 8 December, not only ordinary tourists but also professional organizations and groups who come to learn from the success of the Lyon Festival of Lights, a unique festival model many other cities have borrowed.

Lumière Festival of Lights, UK: The Lumière Festival of Lights began in 2009 and was planned and executed by Artichoke, a cultural and creative company commissioned by Durham City Council in the UK. Founded in 2005, Artichoke is a not-for-profit organization dedicated to large-scale public art projects, aiming to bring art into the public space and collaborate with artists to create unforgettable experiences for the public. Inspired by the Lyon Festival of Lights in France, the event began as a one-off display of art installations. Still, due to its popularity and significant economic benefits to Durham, it has been able to be held every two years for three days, scheduled for 12-15 November each year. The two main features of the Lumière Festival of Lights are: firstly, it is heavily influenced by lighting festivals in other European cities, and many of the works on display are famous artworks from other festivals; secondly, the participating artists are relatively permanent, and although their work varies from year to year, most of the artists are continuous exhibitors.

Berlin Festival of Lights, Germany: The Berlin Festival of Lights was founded in 2004 by artist Andreas Böhlke and festival organizer Brigitte Zander. Their original intention was to use light as a medium to create a world-class public art extravaganza for the German capital, Berlin. Since then, every October, Berlin has been immersed in a 10-day festival of light art that showcases its unique charm and creativity.

Eindhoven Festival of Lights, The Netherlands: The Eindhoven Festival of Lights has been held annually since 2006 for one week, from 7 to 14 November, and is unique in its emphasis on presenting new technologies. The festival is closely linked to the industrial background of Eindhoven, where the Philips company was founded in 1891. Eindhoven was still a small town in the southeast of the Netherlands and quickly rose to prominence, becoming an internationally recognized brand. For this reason,

Eindhoven is also known as the "Philips City". Philips brought prosperity to the city, building homes, parks, commercial and recreational facilities and turning it into a modern industrial city. This boosted the city's industrial design and scientific research and made Eindhoven a globally renowned design center. The city is also the venue for the annual Dutch Design Week, attracting many international creative and design elite. This makes Eindhoven, the "City of Lights", the ideal location for the Festival of Lights.

Prague Festival of Lights: The Prague Festival of Lights is organized by New Czech Cinema and sponsored by the City of Prague and the Czech Tourist Board. Since its debut in 2013, the festival has quickly risen to become the Czech Republic's most famous contemporary art festival, occurring over three days from 15 to 18 October each year. Like lighting festivals in other countries, a vital feature of the Prague Lighting Festival is the integration of light installations and image projection technology into the city's architecture. During the event, many of Prague's historical buildings and landmarks, such as Old Town Square, Streltsky Island, Compa Park, Ludmilla Church, as well as the famous Dancing House, the Astronomical Clock, and the Municipal Library, will be illuminated by light art, bringing a visual feast to citizens and tourists.

2.4.2 Integration of Artistic Features and Regional Culture

Lyon Lighting Festival is not only a visual feast but also a light to show the value of the city's night economy symbols and regional cultural characteristics. This feature has become a constant theme of the Lyon Lighting Festival in France. The Mayor of Lyon, Gilles Bona, clearly stated in the drafting of the lighting plan that he hoped to let people re-feel the history of France and the sentiment of Lyon through night lighting. According to research and documentation, Lyon has uniquely preserved France's unique regional identity. Although Paris is the first thing that comes to mind as a representative of France, Paris represents only itself, and it is the authentic hinterland of France - Lyon - that reveals the true glamour of France. The Lyon Festival of Lights has always emphasized the city's cultural identity when developing its night-time economy policy. The light content of the Festival of Lights revolves around the city's style, cultural history, religious stories, and ancient-coloured dwellings, which are vividly presented to

the audience using advanced lighting technology and equipment. This not only reproduces Lyon's city skyline but also attracts many tourists and promotes the tourism economy by "packaging" the city's cultural characteristics. As the publicity of the Lyon Festival of Lights puts it: "Light up - the culture of the city" (Quan, 2010).

In the 2009 Lyon Festival of Lights, the theme of "Time" vividly demonstrated the historical alterations and changes of the city's culture. This year's Festival of Lights emphasized the richness of regional culture. Place Vaudois, between the City Hall and the Museum of Fine Arts, is the festival's focal point. When people step into the square, they can see huge images projected on the walls of the buildings on both sides, sometimes icy, sometimes stormy, sometimes flames rolling, sometimes springtime. At the same time, the background sound effects also changed: subdued, high-pitched, mysterious, or bright. In the centre of the square, the hands of a vast clock kept turning, reminding people of the flow of time and the pulse of the city's culture. In this short period of ten minutes, it has gone through centuries of history. And in this stunning audio-visual feast, time becomes an eternal theme, which is both the power to destroy and the power to rebuild, demonstrating the unstoppable power and pace of the cultural process of the urban region (Quan, 2010).

2.5 Chinese Traditional Lighting Festivals

2.5.1 The History of Lighting Festivals in Different Regions

In the tapestry of Chinese traditional festive events, the Lantern Festival's light display stands as the archetypal origin of the lighting festival. On the fifteenth day of the first lunar month annually, the public ventures out to admire the lanterns, celebrating the inaugural full moon night of the New Year. The Lantern Festival encompasses a spectacle of colourful lanterns, riddles, and performances, representing China's earliest rendition of nocturnal light festivities and serving as a precursor to contemporary lighting festivals.

Historical records in "The Imperial Capital " trace the custom of lighting lanterns back to the Han dynasty, when rulers conducted rituals in honour of the spring

deity Tai Yi from evening until dawn, illuminating lanterns before Buddha as a plea for a bountiful harvest in the forthcoming year (Tong, 1980).

As one form of folk activity, traditional lantern fairs, which have been vessels carrying regional histories and contemporary, natural, and cultural environments, are closely tied to the extensive folk culture within the community. The custom of the lantern fair is a cultural act and habit, created and accumulated by the masses through prolonged social production and events, characterised by its enduring stability and heritage. Through the succession of dynasties, local cultural customs, alongside the local language and activities, have been preserved, with lantern fairs being one of the most salient manifestations (Shiting, 2021).

In the realm of traditional Chinese lantern festivals, a dichotomy is evident, comprising official and folk celebrations. Official lantern festivals were primarily orchestrated by the ruling classes, with the duration and the procession of the festivities varying with the whims of those in power. For instance, while the Han dynasty celebrated for just a single day, the duration expanded progressively—with the Sui and Tang dynasties extending to three days, the Song dynasty to five days, and the Ming dynasty to ten days. These government-sponsored events bore a political undertone, as rulers sought to craft an image of a prosperous and tranquil empire. Grand lantern festivals were thus held during the Lantern Festival, where a plethora of performances by folk artists lasted from dusk till dawn, and emperors would partake by observing the lanterns from a high platform or bestowing gifts upon the populace to share in the jubilation.

Conversely, folk lantern festivals were characterised by universal participation, encompassing activities such as hanging decorative lanterns, visiting flower markets, dragon dancing, and setting off firecrackers. Additionally, guessing riddles on lanterns was a custom associated with the Lantern Festival. Due to regional variations, distinct forms of folk lantern festivals emerged, such as the Hakka lantern tradition aimed at praying for prosperity in progeny. The "resonating lantern" ritual is predicated on the clan unit, with the number of lanterns displayed corresponding to the

number of male infants born in the previous year, each ceremony replete with local flair. Together, the official and folk events constitute the diverse tapestry of China's traditional lantern festivities.

2.5.2 The Role of Cultural Elements in Traditional Chinese Lighting Festivals

2.5.2.1 Developing a Sense of Regional Identity

Region refers to the comprehensive ensemble of natural and cultural elements within a certain geographical scope, encompassing environmental, social, and cultural factors. "Regional identity" pertains to the overall psychological perception and sense of belonging that the imagery and culture of a principal locality or spatial area impart upon individuals, which manifests as the extent of cognition, endorsement, and trust that people have towards a particular region, reflecting the respect and value society attributes to it (Fanzhou, 2019).

The foundation of regional identity lies in the diversity of regional environments, with the formation process being the subtle and profound influence of various environmental factors on human growth. Given that traditional lantern festivals originate from local cultural histories, the design language and symbols used in these festivals are extracted from the local natural and human environments. The artisans who participate in the lantern festivals are predominantly locals, more familiar with regional culture, thus the lantern works they produce are more likely to meet the emotional needs of the local populace.

In the Heyuan region of Guangdong, the "Shang Deng" custom, rich in regional characteristics and distinct identity, is still preserved. This custom involves celebratory ceremonies held during the New Year when a male infant is born in the previous year. Due to the challenging natural environment, with its abundance of mountains and scarcity of flat land, the "Shang Deng" ceremony embodies the clan's hopes for prosperity in offspring. Such distinctive lantern events also shape the regional identity of the local populace.

2.5.2.2 Cultivating Unique Aesthetic Values

Traditional lantern festivals showcase their aesthetic value primarily through the design of coloured lanterns, referred to as "artistic lanterns." These are not

merely decorative lights but represent a comprehensive art form that integrates sculptural, graphic, and lighting arts. These lanterns are characterised by their varied shapes, rich material selection, and vibrant colours, all of which underscore their significant aesthetic value. The array of traditional lantern styles includes lotus lanterns, rabbit lanterns, toad lanterns, golden jade lanterns, lion lanterns, ingot lanterns, Eight Immortals lanterns, Three Stars lanterns, treasure basins, and pagoda ship lanterns, among others. Over time, the repertoire of lantern designs has expanded to include practical types such as palace lanterns and lanterns, as well as folk-themed types like 'open melon for offspring' lanterns and 'top scholar' lanterns, along with modern trend-following designs like zodiac lanterns, anime lanterns, and constellation lanterns (Shiting, 2021).

Taking the traditional Beijing hexagonal palace lantern as an example, the dimensions of these lanterns are meticulously calculated, appearing elongated but actually maintaining a square proportion, with the longest and widest dimensions in a 1:1 ratio. Many palace lanterns are designed in an antique architectural style, displaying a strong sense of form. Special attention is also paid to the use of traditional auspicious patterns in their design. Common motifs on palace lanterns include dragon patterns, intertwined branch patterns, swastika patterns, longevity patterns, rolling cloud patterns, square victory patterns, antique patterns, and myriad character patterns, each carrying distinct cultural connotations. For instance, dragon patterns, stemming from totem worship, symbolised status in ancient times; intertwined branch patterns, as plant motifs, have a continuous structure symbolising "endless life."

In summary, the design of these lanterns is intricately and uniquely crafted, echoing the essence of traditional Chinese culture. Whether through their form, components, decorations, graphics, or colours, they exhibit a unique aesthetic value, making them an indispensable artistic feature of Chinese lantern festivals.

2.5.2.3. Satisfying the Spiritual Needs of the People

One of the reasons why lantern festival activities have persisted over time is that people hope to use these ceremonies for disaster alleviation and blessings.

In the agricultural era, when productivity was rudimentary, people were unable to withstand natural disasters and often placed their hopes in divine beings. For instance, during droughts or pestilence, the populace would perform dragon dances to pray for rain and alleviate disasters. When faced with unpredictable calamities, they would resort to divine protection to mitigate risks, using rituals as a psychological defence against these threats (Quinn, 2020).

Another reason for the enduring tradition of the lantern festival relates to the historical lifestyle of the working populace. Over the ages, the laboring masses were primarily preoccupied with solving basic subsistence issues, leaving them little time or energy for recreational activities. Moreover, to maintain their grip on power, rulers often restricted the cultural and recreational activities of laborers, rendering their lives monotonous. Whether in ancient times or before the economic reforms, the lives of ordinary people lacked diversity and opportunities for leisure, making large-scale entertainment activities, such as those organized by the ruling classes, extremely popular. These events not only provided psychological comfort and spiritual support but also enriched the social lives of the people, hence their continued popularity and transmission through generations.

2.6 The Influence of Regional Culture on the Art of Light Installations - the Guangzhou International Lighting Festival as An Example

Combining the advantages of its lighting industry and the policy advantages of the local government, Guangzhou has organized 11 Guangzhou International Lighting Festivals since 2011. Guangzhou International Lighting Festival is an annual large-scale public art and cultural event in Guangzhou and is also one of the "World's Three Greatest Lighting Festivals" in China. Based on the consistent purpose and basic system, each edition of the festival has a theme that fits the social background of the period it is held, reflecting the distinctive characteristics of the times, and highlighting the new achievements in the development of light art in each period.

2.6.1 The Origin and Development of the Guangzhou International Lighting Festival

The origin of the Guangzhou International Lighting Festival is related to local policies and industries (Xiaozhi, 2019). The Guangzhou International Lighting Festival is related to its regional policies and industries. The Guangzhou Municipal Government put forward the guiding ideology of "Smart Guangzhou, Low-Carbon Guangzhou, Happy Guangzhou" in its 12th Five-Year Plan. Given Guangzhou's status as a modern metropolis and Guangdong's position as the core of the national lighting industry, accounting for 70% of the total lighting products in the country, the municipal government plans to launch the Guangzhou International Lighting Festival. The event is intended to be a sustainable, international city landmark event that promotes the development of low-carbon and energy-efficient lighting industries such as LEDs, cultural tourism in Guangzhou and other cities, and the widespread use of energy-efficient lighting in China (Haolei et al., 2012).

Taking time development as the reference axis, the previous thematic programmers of the Guangzhou International Lighting Festival are listed in chronological order of the annual development, as shown in the table.

Table 1 Guangzhou International Lighting Festival Theme List

Session	Times	Thematic
First	2011	Thousands of flowers bloom at night when the lights go out
Second	2012	Coexistence of nature and city, technology-led cultural development
Third	2013	Colourful Guangzhou, City of Lights
Fourth	2014	Trans-Guangdong
Fifth	2015	Light - Shadow
Sixth	2016	Love of Light and Shadow
Seventh	2017	Interconnected Cities
Eighth	2018	40 Years of Reform and Opening Up, New Era of Light and Language Flower City
Ninth	2019	Auspicious Flower City gets a new lease of life
Tenth	2020	Happy Time, Charming Sheep City
Postponed	2021	Centennial – Glory (Postponed)
Eleventh	2022	Cantonese Rhythm & Colour - Future Creation

The first Guangzhou International Lighting Festival was held from 26 September to 15 October 2011 in Huacheng Square. The festival is the foundation and prototype of the Guangzhou International Lighting Festival, adopting the market-oriented mode of "the government sets the stage and enterprises sing", integrating the existing market resources, guiding enterprises to actively participate in the festival, taking the market-oriented road as a way of holding the festival, formulating the purpose of the festival, the working procedures and the time of holding the festival, and defining the macroscopic purpose, principles and content of the festival, reflecting the social and humanistic style of the festival. The festival will be organized in a way to define the

objectives, working procedures, and holding time of the festival, to clarify the macro-objectives, principles, and contents of the festival, and to reflect the social and humanistic style. The reason for organizing the festival is inspired by the opening ceremony of the 2010 Guangzhou Asian Games, which impressed tens of thousands of spectators with its wonderful performances combining high technology and art through sound and light, etc. The local government organized the event based on its local industrial advantages. The theme of the first edition was "A Thousand Trees of Flowers in the Night, Beyond the Lights". Through the air, the ground, and the water to form a three-dimensional stage, with the language of light media, it showed the essence of Lingnan culture. The main ornamental programmers include a large-scale light sculpture of the Tree of Life, projection performances on the facade of the museum, library and the Grand Theatre, hand shadow and sand painting performances by juvenile officials, lantern walls, trees in the water, a sea of light, an exhibition of ancient lamps and lanterns, drum lanterns of the four mythical beasts, animal-shaped lamps and lanterns of more than 20 types of light art performances and sketches (Haolei et al., 2012).

The 2nd: On 15 December 2012, the 2nd Guangzhou International Lighting Festival was grandly opened in Huacheng Square. Inspired by Guangzhou's policy of "Vibrant Guangzhou, Cultural Guangzhou, Harmonious Guangzhou, Ecological Guangzhou", the festival was themed on "Coexistence of Nature and City, Science and Technology Driving Cultural Development", covering the three major elements of "Great Beauty in Heaven and Earth, The theme of the festival is "Nature and Urban Symbiosis, Science and Technology Driving Cultural Development", covering the three major elements of "Great Beauty in Heaven and Earth, People's Words, and Poetic Living". This theme demonstrates Guangzhou's persistent pursuit of green ecology and responds to external questions about light pollution. In the programme, the three elements of the theme were perfectly interpreted through innovative materials and various light art designs, such as graphic projections, light decorations, and interactive performances. Combined with the environmental elements of sky, earth and water, and the expressive methods of sound, light and electricity, the programme presented an audio-visual feast.

In addition, a series of thematic activities were held to further promote and deepen the lighting culture, such as the Creative Lighting Works Competition and the City Lighting Illumination Design Competition. This makes Guangzhou International Lighting Festival not only the largest lighting festival in China, but also a new city card of Guangzhou.

The Third: On 16 November 2013, the Third Guangzhou International Lighting Festival was successfully held in the "New Central Axis" of Guangzhou, from Haixinsha Island to Huachenghui Square, as well as the Shangxiajiu Pedestrian Street in Liwan District. With the theme of "Illumination Guangzhou, City of Light", the festival showed the dual charm of Guangzhou's tradition and modernity. Unlike the past, this festival adopted the mode of "production, learning and research", which broadened the channels of adopting the works, integrated the excellent lighting works of universities and united the display through the platform of the festival to show the academic achievements of universities to more people in the industry and the public, and laid a foundation for the cultivation of related talents.

The Fourth: On 28 September 2014, the Fourth Guangzhou International Lighting Festival kicked off with the theme of "Trans-Guangdong". Focusing on this theme, the creators of the event used sound and light technologies to deeply display the historical lineage of Guangfu culture and vividly depict the development and changes of the cities in Southern Guangdong.

The Fifth: On 14 November 2015, the Fifth Guangzhou International Lighting Festival was launched with the theme of "Light and Shadow". The event pioneered the lighting decoration of seven bridges across the river and 17 connecting corridors in the Pearl River New City, adding a unique light and shadow glamour to the city.

The Sixth: The 2016 Guangzhou International Lighting Festival, with the theme of "Love of Light and Shadow", aims to encourage the public to pay more attention to the development of the city and the subtle changes in life, and to integrate the concept of "love" into every corner of the city.

The 7th Guangzhou International Lighting Festival is themed with "Interconnected Cities" and consists of five major sections, namely "City Light", "Ocean Culture", "Light of Science and Technology", "Light of the Economy" and "Light of the Future". It consists of five sections, namely "Light of the City", "Ocean Culture", "Light of Science and Technology", "Light of the Economy" and "Light of the Future", which depicts the cultural heritage of Guangzhou as the birthplace of the ancient Maritime Silk Road and the blueprint for the future development of the emerging city by a timeline, and further explores the local culture of Guangzhou. The 7th Lighting Festival will be held in Guangzhou, China. The seventh lighting festival insists on the combination of distinctive characteristics of the times and excellent traditional culture and strengthens the cultural and artistic exchanges between China and other countries in the world.

The Eighth: The Eighth Guangzhou International Lighting Festival actively absorbs the cultural achievements of the world, focusing on the frontiers of world science and culture. This year's theme is "40 years of reform and opening up, the new era of light language city of flowers", using the language of light media, combined with the development of Guangzhou in the reform and opening up the human story, shaping the art works bearing the 40 years of reform and opening up the profound memory of the Guangzhou reform and opening up the great achievements of the reform and opening up of Guangzhou, and Guangzhou people dared to be the first in the world of creativity and innovative spirit.

The Ninth: the theme of "auspicious city of flowers out of the new colour" of the ninth Guangzhou International Lighting Festival was officially opened on 18 November.

The 10th: The 10th Guangzhou International Lighting Festival was held from 18 November to 1 December 2020, and the theme of the lightwork in Huacheng Square was "Happy Time: The City Takes Off".

The 11th: On 27 December 2022, the 11th Guangzhou International Lighting Festival was officially opened, with the theme of "Cantonese Rhythm and Colour - Future Creation".

To sum up, Guangzhou International Lighting Festival has been successfully held for eleven years so far. From a macroscopic point of view, every Guangzhou International Lighting Festival is basically the same in terms of ideology, reflecting the humanistic spirit of Lingnan. From a micro point of view, the theme of each Guangzhou International Lighting Festival follows the pace of the times, constantly injecting fresh elements, so that its connotation is richer, and its extension is broader. Every Guangzhou International Lighting Festival shows the following three macro-directions: Firstly, it shows the Lighting installation art under the fusion of science and technology and art, which provides a rich spiritual food to satisfy the growing demand of the public for a better life.

Secondly, to promote cultural and artistic exchanges between China and foreign countries, to promote national and regional cultures, and to become an effective way of cultural dissemination.

2.6.2 Guangzhou Regional Culture and Its Reflection in the Lighting Festival

Guangzhou's rich regional culture provides content and themes for the creation of Lighting installation art. Guangzhou is also known as the "City of Sheep", which comes from the mythological legend of the five sheep, and is also known as the City of Flowers, the City of Spike, and the City of Five Immortals (Deisen, 2014). Luo Yuefu believes that Guangzhou's cultural tourism is a key element in the city's development. According to Luo Yuefu, the regional cultures in Guangzhou's cultural tourism can be categorized into Vietnamese culture, historical cultures such as South Vietnam, red revolutionary culture, Lingnan art culture, festivals and celebrations, merchant capital culture and food culture (Yuefu, 2007).

Looking at the themes of the Guangzhou International Lighting Festival over the years, Li believes that the themes of the Lighting Festival can be divided into two categories in terms of regional culture, Lingnan speciality culture on the one hand, and Guangzhou history and culture on the other hand (Xiaozhi, 2019). Lingnan culture is an important part of regional city culture, and different regions have their own different development history, inheritance experiences, cultural connotations, and core spirit. A

lighting festival that combines light art and regional culture can better promote the cultural characteristics of the region, promote the exchange and development of different cultures, and collide with intense sparks of thought. Guangzhou International Lighting Festival has been based on the theme of Lingnan culture, which has a positive effect on the protection and inheritance of cultural heritage. For example, the third Guangzhou International Lighting Festival has added a new sub-site at Shangxiajiu Pedestrian Street in Liwan District, which has strong Lingnan characteristics. Holding the Lighting Festival in such a special place that highlights the culture of Guangzhou will help to promote the publicity and promotion of the city's local culture, the protection of intangible cultural heritage, and the enhancement of the public's understanding of intangible cultural heritage. Historical culture, on the other hand, unites the historical lineage of regional culture and the humanistic spirit of the city, which is of great significance to the continuation and development of the city. The fourth Guangzhou International Lighting Festival in the Pearl River in front of the nine bridges interpretation of the story of urban change in Guangzhou, the seventh lighting festival to tap the cultural heritage of Guangzhou as the birthplace of the ancient Maritime Silk Road as well as the eighth lighting festival theme centered on the reform and opening up of Guangzhou in the process of the development of humanities story, the lighting festival in the form of lighting art interpretation of the ancient and modern changes in the city of Guangzhou, the city's history and culture, in order to the inheritance of the city culture and innovation, to retrieve the city's cultural heritage. and innovation, to retrieve the city's memory and reconstruct new urban imagery.

2.6.3 Impact of Lighting Festivals on Regional Culture

Guangzhou International Lighting Festival as one of the world's three major lighting festivals, although it is "light art" as the main line, but each session of the lighting festival involves a wide range of comprehensive effect is undoubtedly. The successive Guangzhou International Lighting Festival held to a certain extent to strengthen and improve the construction of public cultural service system, enhance the cultural taste of

Guangzhou city, the overall image and competitiveness, and thus promote economic development, culture and social progress has laid a solid foundation.

Lighting festivals have a positive impact on the spread of regional culture. Li's study explored the impact of the Guangzhou International Lighting Festival on regional culture from the audience's perspective and found that most respondents agreed that the festival had a positive effect on urban culture. In terms of urban cultural exchange and cooperation, most respondents agreed that the lighting festival played a positive role in facilitating this, while only a very small number of respondents disagreed. This suggests that lighting festivals are not only an important cultural activity in cities, but also have a close interaction with urban culture. In terms of social impact, most respondents believe that the Guangzhou International Lighting Festival has played a positive role in promoting the building of a harmonious society, while relatively few respondents hold a different view. In addition, the lighting festival can also enhance the public's sense of identity with the regional culture, and most respondents said that the lighting festival helps to cultivate the public's cultural identity (Giordano & Ong, 2017). The following is a summary of the findings of the Guangzhou International Lighting Festival.

2.7 Relevant Theoretical Studies

2.7.1 Visual Culture Studies Theory and W.J.T. Mitchell's Image Theory

2.7.1.1 Theory of Visual Culture Studies

In the course of history, it was the Hungarian film scholar Balázs who first introduced the term "visual culture", and in 1913, he had already articulated the concept and firmly believed that the emergence of cinema marked a new era of visual culture. He suggested that "cinema has not only produced unique works of art but has also given mankind a new capacity to understand and experience this art (Balázs, 1979)." Balázs observed that since the introduction of the printing press, the importance of vision in the daily lives of human beings has diminished, with people conveying information more through printed symbols than through facial expressions. As a result, he asserts, "What was once visual thought has now been transformed into abstract

thought, and the original visual culture has gradually been transformed into a conceptual culture (Balazs, 1979)." However, the birth of cinema brought visual culture back to the forefront and reintegrated the 'visual human' into the culture, especially in terms of expressions, postures, movements, and body language. It is worth noting that in 1936, Benjamin explored three cultural forms in his essays "The Storyteller" and "The Work of Art in the Age of Mechanical Reproduction": oral culture, print culture and mechanical reproduction culture. Although he did not use the term "visual culture" directly, his viewpoints undoubtedly provided a rich connotation for the development of the concept. Benjamin saw the age of mechanical reproduction as a turning point in human civilization and argued that cinema injected a new element of life into society, promoting an advanced art form that was closely related to the masses, which was distinctly different from the relationship between traditional art and the masses. The new artistic quality lay in the fact that the traditional aesthetics faded and were replaced by a shocking artistic effect. Nevertheless, cinema is only one manifestation of visual culture and does not represent its entirety. The Canadian researcher McLuhan further deepened his discussion of visual culture by analyzing the impact of electronic media culture from the perspective of media change, stressing that electronic media combines the senses of sight and sound and produces an effect that surpasses that of all previous media, especially television. American scholar Mirzoeff believes that postmodern culture is visual culture; print culture has not disappeared, but people's fascination with vision has shaped the qualities of postmodern culture. When the visual becomes dominant, the culture shows the postmodern characteristics. From the perspective of technological revolution, French scholar Paul Virilio emphasized the increase in speed caused by technological progress, and he saw that the birth of the Internet and satellites heralded the advent of a new era of visual culture. In addition, the French philosopher Baudrillard pointed out that with the development of electronic media and computer simulation, we have entered the era of "virtual images". The Slovenian scholar Ales Erjavec, in his book, clearly states that current society is completely dominated by the visual.

The term "visual culture" was first introduced in 1972 by Michael Baxandall in his work *Fifteenth-Century Italian Painting and Experience: A History of Early Painting Styles*, but it was not until the 1990s that it came to be recognized as a full-fledged discipline, and along with that, it was widely disseminated in Western educational systems. Along with the widespread dissemination of the discipline in the Western education system, the definition of its boundaries and connotations has also become a hot topic of research; in general, visual culture is not solely based on Marxism, but goes beyond the dissection of a particular social behavior, with deeper links to art history and a greater bias in favour of the views of Roland Barthes and Walter Benjamin, and is relatively independent of the traditional study of British culture; Janet Wolff feels that it is in line with the sociological traditions of Europe - the non-quantitative, more culturally orientated sociology - and Douglas Crimp sees it as part of cultural studies; there is much discussion in defining what is covered by visual culture, for example, Harvard University social In *The Contradictions of Capitalist Culture*, the scholar Daniel Bell mentions that contemporary culture is gradually evolving from print culture to visual culture, and he further elaborates that this change is not only due to the rise of mass media such as cinema or television, but also, and more crucially, to the increased geographic and social mobility of the population since the middle of the last century, combined with technological progress, which together have given birth to this new form of cultural communication.

Jameson argues that the mechanical reproduction and commodified mass production of the media of film in his book *The Cultural Logic of Capitalism*, television and photography have constructed an "imitation society" in which we see the consumer society as a huge backdrop that pushes the image to the foreground of culture. The shift from time to space, from depth to flatness, from wholeness to fragmentation, is a perfect fit for visual pleasure, and thus the consumer society is a hotbed of visual culture, calling people to enter and enjoy it (Jameson, 2017).

In 1995, W.J.T. Michel, from the University of Chicago in the United States, introduced the term "visual studies", which combines art history, cultural studies

and literary theory, and this direction of research is in what he calls the "image turn". As a far-reaching scholar in the field of visual culture, Michel advocates that the study of visual culture focuses on the social structure of visual experience, and his research methodology shows a tendency to be "non-disciplinary" or "de-disciplinary", which is distinctly different from that of traditional disciplinary research. His approach shows a "non-disciplinary" or "de-disciplinary" trend, which is clearly different from traditional disciplinary research. In his article "What is Visual Culture?" he lists and discusses in detail the contents of a visual culture programme and uses the keywords "symbol, body, world" to define the core areas of visual culture. He also emphasises the consideration of the natural sciences, arguing that not only should humanities scholars explore visual culture, but that the field of study should also encompass the social and natural sciences, which he sees as interdisciplinary (W. Mitchell, 1995). Regarding the connection between language and visual culture, Mitchell points out that visual culture is by no means independent of language but should cover its relationship with various linguistic discourses. His notion of a "family of images" includes not only graphics, but also non-traditional images such as mental images and figures of speech. Another article titled "Interdisciplinarity and Visual Culture" explores visual culture from an interdisciplinary perspective. Although many scholars regard Mitchell as a strong supporter of interdisciplinary research, it is clear from this article that he is not blindly in favour of interdisciplinarity, but rather proposes the concept of "non-disciplinarity", which he describes as the confusion or lack of unity between the boundaries within and outside of disciplines (W. J. T. Mitchell, 1995).

Visual culture studies began to gain attention in the 1980s and 1990s as a cross-disciplinary discipline, focusing primarily on the use and value of visual images in cultural, social and political contexts. This field of study is not only about the foundational analysis of images, but also about the creation, delivery and audience response to images, and the interaction between images and their social and cultural contexts, as well as their interpretation by viewers. The development of technology, particularly the spread of photography, film, and television, has led to the importance of

technology in visual culture being widely studied. At the same time, postmodernism has had a profound impact on visual culture, showing us the unclear boundaries between image and reality, and the place of image in consumerist culture. In the context of globalization, visual culture studies have gone further to explore how images are transmitted and understood across cultural zones. And in the advent of the digital age, digital tools have opened new paths and possibilities for the production, dissemination, and interaction of images. Taken together, visual culture studies provide us with a way to understand the multiple functions and values of images in contemporary society.

2.7.1.2 Image Theory

Image theory, as the field of interpreting the meaning of images, spans multiple fields such as art, culture, history, and society. In ancient Greek and Roman times, images were mainly used as ornaments or representatives of sacred beliefs, and iconography at this time focused on the beauty of images and the value of beliefs. However, with the emergence of humanist thinking, the symbolic nature of images and the history behind them gradually gained importance. Master of Art, such as Leonardo da Vinci and Michelangelo, saw their creations become the focus of in-depth iconography. By the 19th century, the birth of photography and advances in industrialization gave images a more central place in the everyday. At this time iconography turned to the social and cultural interpretation of images and their connection to real life. The advances of the twentieth century brought about a rapid growth in iconography. With the prevalence of media such as film, television, and advertising, images gradually permeated people's daily lives. Scholars, such as W.J.T. Mitchell, began to refine new concepts of imagery, exploring the various stages of image from creation, dissemination to reception. And, along with the trend of globalization and the advent of the digital age, images are being made and disseminated with unprecedented speed and breadth, no longer limited by cultural or geographical constraints but serving as a bridge to connect the globe. As a result, iconography has turned to the study of the cross-cultural connotations of images and the connection between images and globalization. In summary, advances in

iconography have revealed the evolution and centrality of images in social, cultural, and historical contexts. From ancient sacred symbols to present-day digital communication, iconography has constructed a way of understanding and interpreting images (Di, 2012).

The roots of iconography are rooted in iconography, a technique for describing and interpreting visual art whose origins can be traced back to ancient Greece. The word originates from the combination of the Greek words for image and writing, so speaking, iconography refers to "the writing of images" or "the description of images". Pictorialism can be regarded as a subfield of art historical research, as it focuses on the themes and underlying meanings of visual artworks.

In its initial stages, iconography did not deal with the provenance of works of art, i.e., their authorship, nor did it explore their historical period. Instead, they refer to other art historians to answer such questions. Moreover, iconography does not involve the evaluation of the aesthetic value of works of art. Their main concern is what the work depicts and the in-depth meaning that the artist is trying to convey. In addition to this, iconography is also devoted to the study of the direct and indirect materials used by the artist, which includes all kinds of documents and visual materials, to explore the themes behind certain pictures, as well as the connotations, traditions, and evolution of these themes.

The name "iconography" originally originated during the Renaissance, when artists used pamphlets describing symbolic images as a reference, such as Cesare Ripa's *Iconography*. However, after the discipline of art history was established in the 19th century, the terms iconography and pictorialism became synonymous with each other and were used primarily to identify the subject matter of works of art. The modern definition of iconography began in the early 1900s with the German art historian Aby Warburg. He presented a paper at an international art history conference, "Flora's Sans Souci Italian Art and International Astrology". In this paper, he introduced the new concept of "image logic," suggesting his intention to propose an innovative approach to the study of art. He also proposed "iconographic analysis", which brought new

perspectives to the study of artistic iconography, forming a new theoretical model for the study of art history and artology that differed from traditional iconography. Unlike his French contemporaries, who interpreted art mainly through theological documents and rituals, Warburg preferred to analyze art in a broader cultural and historical context. He firmly believed that a deeper understanding of art and its themes required a deeper understanding of the history, science, poetry, mythology, and socio-political life of the time, as well as a focus on the interplay between the content and the form of works in the study of art. His goal was to encourage scholars to draw from other disciplines so that the history of art would be part of the history of culture. Warburg is regarded as the founder of the iconographic approach, and his students, such as Erwin Panofsky, also carried out further research into iconography, calling it iconographic studies, and became important figures in the field. Despite some criticism of Panofsky's theories, he is still regarded as a theoretical cornerstone of iconography and iconographic studies (Di, 2012).

Heidegger describes the current era as "the age of the world image" in his book *The Age of the World Image* (Wen, 2020). Gombrich, a well-known British art theorist, holds the view that viewing is a reflection of schema. He firmly believed that an artist could not see the world with a pair of "pure eyes"; otherwise, he would either be deeply moved by the objects or be unable to truly understand the world.

In 1931, Höglwerf proposed a clear division between iconography and iconology: iconography was concerned with describing the subject matter, while iconology focused on exploring the deeper meanings behind the work, such as symbolism, dogma, and mystical significance. Panofsky viewed art as a sign of cultural and spiritual history and worked to parse the deep cultural meanings behind the subject matter (Panofsky & Drechsel, 1970). In contrast, Gombrich further refined the definition of iconography by arguing that iconography should focus on the author's intentions, thereby revealing the only verifiable meaning of the work. In current scholarship, the definitions of iconography and iconology are not far apart, where iconography can be seen as iconology in a broader sense, a view that is shared by scholars such as

Panofsky. In summary, iconography aims to explore and explain the meaning of images, and its interpretation enables cultural values to be realized.

In 1975, the Italian art historian Argan published an article titled *Ideology and Iconography*, in which he expanded the field of iconography to include historical explorations of such elements of art as line, contrasts of light and dark, tone and brushstroke. He spoke highly of Erwin Panofsky as the Saussure of art history and understood iconography as a field of semiotics, emphasizing that Panofsky's iconography was concerned with both theme and form (Argan & West, 1975).

Michel analyses Erwin Panofsky's approach to iconography in depth and proposes a threefold hierarchy of definitions of its meaning: firstly, a pre-iconographic description, secondly, a specific description of iconography, and then an in-depth interpretation of iconography. He further proposes a fourth stage, i.e., iconographic in-depth interpretation, in which the research not only focuses on the artist and the subject matter but also explores the reasons behind the creation and why it was done in a certain way (Di, 2012).

Nowadays, many scholars have regarded iconography as part of cultural-historical research, which is used to gain insight into the cultural, social, and historical contexts behind themes and subjects in visual art. This helps us to understand why artists choose themes and employ particular means of expression in particular temporal and spatial contexts.

2.7.1.3 The Image Turn of W.J.T. Mitchell

W.J.T. Mitchell teaches at the University of Chicago and graduated from Michigan State University with a degree in Literature in 1963, and studied Romantic Literature at Johns Hopkins University in 1968, earning his M.A. and Ph.D. After graduating, he taught in the English Department at Ohio State University, and then at the University of Chicago, where he published his doctoral dissertation, *Blake's Turn to Image*, in 1978. After graduation, he taught in the English Department at The Ohio State University, and then at the University of Chicago. 1978 saw the publication of his doctoral dissertation, *Blake's Synthesised Art: a study of an illustrated poem*; 1986 saw

the publication of *Iconography: image, text, ideology*; 1994 saw the publication of *Picture Theory: an anthology of words and visual reproductions*; and 1998 saw the publication of *The Book of the Last Dinosaurs: the life and times of a Life and Times of Cultural Images*; and in 2005, *What Pictures Want: The Life and Love of the Image*. *Image Science: Image, Text, Ideology*, *Picture Theory: An Anthology of Words and Visual Reproductions*, and *What Pictures Want: The Life and Love of the Image* are known as three of Michener's most important works on the image, the "Image Science Trilogy".

Continuing this trend, in the 2018 Annual Lecture at the OCAT Research Centre in Beijing, Michel described in detail his understanding and development of image science. He began by reviewing his academic achievements in the 1980s, which he called "Image Science 1.0", emphasizing the revival of ancient image science and the use of the cross-media method of "Yigashiki words" to deepen the exploration of the meaning of images. Evolving to "iconography 2.0", Michel mentioned that the core of this version is the dialectical combination of data information, digital mimesis, and cloned life, showing the close interweaving between contemporary technology and iconography. In *Imageology 3.0*, Michel defines it as "sweet science of the image". Rather than a new revelation, it is an inheritance and evolution of the past. Rather than making a clear cut with the doctrines of the past, this version collects the various "fossilized remains" of history and combines them with our present daily life. This integration gives new life to these "fossils" and allows them to shine in a new light in the context of a new era. This perspective emphasizes the connection between academic research and real life, and at the same time reflects Michel's in-depth thinking about iconography and respect for history (Di, 2012).

Michel's unique methodology has brought a new perspective and dimension of understanding to contemporary iconography. His "image turn" is not only about the recognition of images, but also about how images play a role in culture and society, and how they interact with people's daily lives. His concern is not only about the image itself but also about how the image survives, spreads and changes in society and

culture (Hongfeng, 2020). In addition, Michel's concept of "meta-image" further highlights how images are given new meanings through people's perceptions. This is not just a traditional interpretation, but a more subjective, deeper, and dynamic one. This understanding emphasizes the dialogical relationship between the viewer and the image, where each viewer can assign a specific meaning to the image based on their own experience and context. The value of this methodology lies in its openness and inclusiveness, allowing for a wide variety of readings and understandings and encouraging people to uncover and create new meanings in their interaction with the image. For Michel, this new theory of the image turn is closer to an "open system" that is not only fixed on the narrow definition of art history, but also crosses the boundaries of many disciplines, involving philosophy, linguistics, sociology, etc., and demonstrating the wide influence and value of images in contemporary society. This open, interdisciplinary approach provides new perspectives and methods for the study of images, allowing for a deeper understanding of the role and significance of images in contemporary culture and society (Mitchell, 2006).

The methodology of the image turn not only provides a more in-depth framework for the exploration of hybrid art forms such as Lighting installation art, but also its wide applicability brings new horizons for the analysis of images in a variety of different contexts, allowing the study of Lighting installation art to expand in multiple. Behind the creation of Lighting installation art, the designer's conception, the audience's reaction, and the macroscopic social and cultural background jointly influence the work from conception, realization to the final presentation in front of the public, and together they shape the whole picture and cultural value of the artwork.

2.7.2 The use of Related Theories in Lighting installation art

In the article "What is Visual Culture", Michelle gradually defines the concept of visual culture, pointing out that the most typical symptom of visual culture is its "transdisciplinarity", and in " Transmediality and Visual Culture", the author makes it clear once again that the study of visual culture is the study of "the social construction of visual experience". In Transmediality and Visual Culture, the author makes it clear once

again that the study of visual culture is a study of "the social construction of visual experience", or "visual culture is a place of meeting and dialogue between various disciplines". As an "interdisciplinary" art form, Lighting installation art coincides with the "interdisciplinarity" of visual culture. In the study of Lighting installation art in Guangzhou International Lighting Festival, W.J.T. Mitchell's image theory provides us with a framework, emphasizing that images are not only visual representations but also carry cultural, social, and political meanings. This means that the light installations are more than just visual spectacles; they reflect deeper features of Guangzhou or Chinese culture more broadly. In addition, the interaction between images and texts, and how images interact with the audience, are important aspects of the study.

In conjunction with theories of visual culture studies, we can further explore how technology affects the way light installations are communicated, and how postmodernism and globalization shape and are reflected by these installations. Through fieldwork and interview methods, direct observation and understanding of the perspectives of artists, organizers and audiences, this research aims to delve deeper into how light installations communicate and reflect the qualities of regional cultures in the context of globalization and technology.

To sum up, when researching the artistic design of light installations in the Guangzhou International Lighting Festival (2021-2023), based on the above theories, we can first start from the dimension of production and consumption of images, focusing on the process of creating light installations and the acceptance of the audience, and through in-depth interviews with the designers, production staff and the audience, revealing how these installations are conceived, produced and experienced. Further, the social and cultural significance of the images becomes the core of the study, revealing the connections between the installations and Guangzhou and wider Chinese culture by analyzing their themes, forms, and contents. In addition, *Power Relations in Visual Practice* examines how the installations interact with the power structures of society, while Mitchell's view of the life of the image emphasizes the interactive nature of the image and the viewer. At the same time, the political and historical nature of the

images focuses on how the Lighting installation participates in political and historical discourses in Guangzhou and China, while the relationship between image and text reminds us of the textual elements of the installation. Together, these dimensions provide us with a comprehensive and in-depth framework to help us understand the multiple meanings and values of the artistic design of light installations based on regional culture at the Guangzhou International Lighting Festival.

2.8 Relevant Studies

Relevant literature research will mainly focus on the keyword "Lighting installation art", and from an interdisciplinary perspective to sort out the existing relevant research.

Lighting installation art is a product of the development of human industrial background and has only experienced decades of development since its birth in the mid-20th century. As a branch of art, Lighting installation art has become a response to social development and avant-garde thinking, and artists around the world are becoming more and more enthusiastic about the creation of Lighting installation art, but most of the current research stays in the use of new technology and the study of its visual performance of light and shadow, and the study of regional culture in Lighting installation is very limited.

Lighting installation art is the combination of art and science and technology, its birth is the embodiment of interdisciplinary research, so in the relevant literature will be carried out using an interdisciplinary perspective:

2.8.1 Lighting installation art in the Field of Art Studies

Li Zhilu discusses the application of Lighting installation art in public space, analyses the potential of "light" as a medium in shaping space and understanding the world, reveals the symbiotic relationship between Lighting installation art and public space, and analyses the physical and psychological impact of the medium of "light" in detail, reflecting on the problems in the development of Lighting installation art and providing ideas for solutions. It reveals the symbiotic relationship between Lighting installation art and public space and analyses in detail the physical and psychological

impact of the medium of "light", reflecting on the problems that exist in the development of Lighting installation art and providing ideas for their solution (Zhilu, 2022). The Lighting installation is a new and unique medium for light installation.

Xu Min explored the immersive experience design of interactive attribute light installations, and through the user experience theory and the theory of mind-flow immersion, he concluded that the corresponding elements of users, tasks and artefacts affecting the immersive experience are the sense of communication, the relationship between skills and challenges, and the spatial construction, respectively; and he took the "selection of lighting materials, means of interaction, and the placement of the artefacts in time and space" as the elements of the immersive experience. "As the elements of immersive experience. It is also believed that when designing interactive light installations, attention should be paid to the construction of the mood, formal characteristics, spatial layout and interaction mode of the work, in which the expression of the concept is the core, and the other elements serve it (Min, 2020).

Feng Hua explores the art of Lighting installation from the perspective of mood, analyses the techniques of mood creation in light installation, and explores the three levels of mood through the light, shadow, and spatial environment: physical, emotional, and intentional moods (Hua, 2015).

In Liu Ke's doctoral dissertation, "Mutual Shaping and Reverberation - A Study of Spatial Construction in Video Installation art", he explores how the audience as a variable in the impact of installation art influences and accelerates the process of reconstructing "space as it is constructed" into "space as it is being constructed". It also argues that given the "generalization" of images caused by the proliferation of the conceptual nature of moving image art and the mediatization of digital attributes, the materiality of video installation art continues to "converge", and its "spatial construction" is bound to become a new form of art. The spatial construction will inevitably become a new way of viewing "this and that" (Ke, 2022).

In her doctoral thesis, "Research on the Concepts and Forms of New Media Installation art", Ma Xiaoxiang describes the concepts and forms of new media

installation art, the media and creation methods, and the space and presentation methods, and proposes a new aesthetic system and a multifaceted aesthetic field constructed by new media installation art (Xiaoxiang, 2012). The new aesthetic system and multiple aesthetic theories constructed by new media installation art are proposed.

Sun Jin believes that interactive light art follows three main design principles in the form: applicable light art, interactive light interpretation, and ecological sustainability. In the design process, six core dimensions need to be considered, including the theme concept, choice of light media, interaction, artistic expression, technical optimization, and safety considerations. It is also stated that this art form is reflected in the four major application scenarios such as commercial space, exhibition space, public service space and link space, and it has a wide range of applications and far-reaching influence in modern society (Jin, 2020).

2.8.2 Lighting Installation Art in Psychology

Li Meng believes that interactive Lighting installation art combines installation art, lighting art and interactive technology, and its core value lies in emotional communication, aiming to provide audiences with a multi-dimensional empathetic experience. Through the analysis of heart flow theory and emotion theory, it is believed that there are three core elements in this kind of emotional communication: attraction, reasonableness and sensibility, and the key points of the design of such works should include: "the integration of concept and modelling", "the grasp of contrast and balance", and "multi-dimensional empathy". The key design points of such works should include: "the integration of concept and shape", "the grasp of contrast and balance", and "the creation of a multi-dimensional sense of communication" (Meng, 2022).

According to Gestalt psychology, Wang Youtian believes that lighting design can choose or create the material form of a thing according to the aesthetic ideals and skills formed in practice, cause the viewer's specific psychological feelings through the corresponding sensory perceptions, and emphasize the feelings and ideas of the plot and environment to reflect the spiritual experience (Youtian, 2012).

2.8.3 Lighting Installation Art in Economics

You Fanzhou believes that the lighting festival as an important part of the night tour economy plays an important role in promoting the development of the city's tertiary industry. On the macro level, the theme of the festival should fit the cultural depth of the city and do a good job in promoting the regional culture; on the micro level, the Lighting installation art should be diversified media, combined with the local culture to form a variety of ways of expression. And it is believed that light works are important cultural and creative tourism products, which can give tourists get better emotional experience, and at the same time provide a way out to crackle the dilemma of insufficient tourists in off-season (Fanzhou, 2019). The following is an example of a light work that can be used to create a better emotional experience for tourists.

Xin Yuntao believes that the proportion of urban nighttime consumption is gradually rising since 2019, and the nighttime economy still shows stronger economic benefits than the daytime, from the perspective of regional economic development, the cultural and creative lighting design and application of the nighttime economy to promote the role of significant, it not only accelerates the city's cultural construction but also has a positive impact on the regional economic construction (Yuntao, 2022).

Qisheng explores the exhibition and operation mode of TeamLab, which takes immersive new media technology as the technological basis and independent space as the medium, allowing the viewer to become a constituent element influencing the artwork to participate in the presentation of the work, so that the artwork, space, and human beings can realize the mutual intermingling of the physical space and the virtual work, creating an immersive experiential space that breaks the traditional mode of viewing the exhibition and also realizes great value on the commercial level. It also realizes great value at the commercial level. He believes that TeamLab's exhibition and operation mode is unique and practical, and its successful experience in the art and culture market provides useful inspiration and reference for contemporary art creators to explore in the field of "immersive" and "Lighting installation art (Qian, 2020)." The exhibition is a good example of how the market for light installations can be explored.

In recent years' academic research, Lighting installation art, as a relatively young field, has attracted the attention of many scholars. Since its birth in the mid-20th century, it is not only a branch of art, but also a reflection of social development and avant-garde thinking. Studies by Li Zhilu (2022), Xu Min (2020), Feng Hua (2015), Liu Ke (2022), Ma Xiaoxiang (2012), and Sun Jin (2020) have explored the characteristics, applications, and impacts of Lighting installation art from different perspectives. These studies mainly focus on the form, technology, and spatial application of Lighting installation art, but the research on regional culture in Lighting installation is still relatively limited.

Further, when we look at Lighting installation art from an interdisciplinary perspective, the study of Lighting installation art is not only limited to the field of art. Lai Meng (2022) and Wang Youtian (2012) explored the emotional communication and aesthetic experience of Lighting installation art from the perspective of psychology. And from the perspective of economics, You Fanzhou (2019), Xin Yuntao (2022) and Qi Sheng (2020) focused on the role and value of Lighting installation art in night tourism economy and cultural and creative tourism. These studies provide a more comprehensive and in-depth perspective to help us understand the multiple roles and meanings of Lighting installation art in modern society.

CHAPTER 3

HOW TO CONDUCT RESEARCH

This study is qualitative research, which mainly aims to study the cultural characteristics of Lighting installation art under different regional cultures and to research and explore the design methodology of Lighting installation art rich in regional cultural characteristics.

3.1 Study Design

This study can be divided into several phases, in the early stage of doing the literature review to determine the research methodology and research theory, and in the field of research using fieldwork and interviews in the field, through the research framework established by the research theory to code the survey data, in doing the analysis and summary. The research methodology is as follows:

Field surveys: The method of field surveys involves in-depth on-site research in the study area, recording the phenomena that occur, analyzing the causes of the phenomena, and collecting data on the area to understand the real situation there. Field research is a valuable methodological mapping tool to record and react to the situation and information of the area under investigation (Duxbury, Garrett-Petts, & Longley, 2018). For example, Zhang Jing used the method of field survey to explore the expression of metro spatial characteristics that give regional culture in 2017 and obtained effective research results (Jing, 2018).

Interviews: Interviews are an important qualitative research method that allows researchers to collect data directly from participants, can be used in conjunction with fieldwork, and are important in understanding the perspectives, experiences, and values of the interview targets. In-depth interviews were used to interview the creators and consumers of Lighting installation art in the scope of the study (Showkat & Parveen, 2017). For example, Lina Yu used the interview method to study the product market and current situation of lacquer craft under regional culture and to explore the path of lacquer art to carry cultural derivatives design (Lina, 2022).

3.2 Location of the Study and Sample Selection--Taking Guangzhou City, China, As an Example

3.2.1 Reasons for Area Selection

Geographical background advantage: Guangzhou International Lighting Festival is one of the world's three major lighting festivals and is an annual large-scale public art and cultural event in Guangzhou (Yin, Fu, & Dai, 2023). Guangzhou International Lighting Festival is one of the three largest lighting festivals in the world. It has been held for eleven years since 2011. In 2015, UNESCO selected the Guangzhou International Lighting Festival as one of the major cultural events of the International Year of Light, alongside the Lyon Lighting Festival in France and the Sydney Lighting Festival in Australia. As a landmark event in Guangzhou, the festival has attracted thousands of designers from home and abroad to participate in the design and creation of the festival and has attracted more than 65 million visitors, making the festival the most visited international lighting festival in terms of number of visitors (Yin & Dai, 2023). The number of visitors is the highest of any international lighting festival type (Yin et al., 2023).

Regional cultural advantages: Guangzhou International Lighting Festival has strong regional cultural characteristics and has made outstanding contributions to the city's cultural output. Guangzhou International Lighting Festival has Guangzhou's local cultural and artistic characteristics and pursuits, and its birth and development are associated with Guangzhou's urban culture. The design and setting of the light artworks realize the typical Lingnan cultural characteristics and are in line with the spirit of the city of Guangzhou, reflecting the cultural characteristics and city spirit of Guangzhou and arousing the audience's spiritual resonance and cultural identity. In this process, the lighting festival strengthens mutual understanding awareness and emotional communication between the public and the city through unique art forms and enhances the public's sense of belonging and pride in the city (Xiaozhi, 2019).

Geographical industrial advantage: Guangzhou has a good foundation in the lighting industry. The 2018 Guangdong Lighting Research Report shows that Guangzhou has gathered nearly 3,000 stage lighting and sound enterprises, occupying half of China, with an annual turnover of more than 50 billion yuan; 70% of the world's

stage lighting equipment is made in China, and nearly 95% of China's stage lighting equipment comes from Guangdong, and several of the largest enterprises in the stage lighting industry are located in Guangzhou (Committee, 2018).

3.2.2 Sample of Works

A total of 8-15 works will be selected as a sample for this study, and in order to reflect the representativeness of the sample, the following factors will be taken into account in the distribution of the number of samples of works according to the regional culture:

Table 2 The Factors of Samples

Form	Descriptions	Distribution
Lingnan culture	Reflecting the characteristics, symbols and elements of Lingnan culture through the artwork	1-3
Historical and Cultural heritage	Works created on the theme of Guangzhou's history and cultural	1-3
Local folklore and traditional celebrations	Works based on local traditional folklore and celebrations	1-2
Cultural signs and symbols	Works using local cultural signs and symbols	1-3
Local Stories and Legends	Showing the traditional stories and legends of the Guangzhou area through the artwork	1-2

3.2.3 Sample of Creators

The sample of creators will be selected on the basis of the sample of works, and the professional background and experience of the creators will be used as a reference, and the sample is expected to be as follows:

Table 3 Interview Creator Samples Setting

Interviewees	Professional background and experience	Assigned amount
Celebrated artists	Artists with wide visibility and experience in the field of Lighting installation art	2
Curator (organizer)	Specialists with extensive experience and expertise in the field of art curation and light installations	1
Academic experts (university professors)	Scholars with professional background and knowledge in visual culture studies or academic fields with some research on Lighting installation art	1
Emerging Artists	Young artists or students with potential and new ideas in the field of Lighting installation art.	1

3.2.4 Sample of Consumers

According to the data report provided by Yin Shuhua et al. (2023), the corresponding age levels of the sample can be predicted in conjunction with the age distribution of the participants of the Guangzhou International Lighting Festival in 2021 to ensure the representativeness of the sample, and it is expected that 10-15 participants will be randomly selected to serve as the sample of the interviews, which are distributed as follows:

Table 4 Audience Samples Setting

Age level of participation	Number of simulated samples
<20 years	1
20-30 years	12
30-40 years old	3
>40 years old	0-1

3.3 Research Tools

3.3.1 Observation Records

In selecting the work, I will sift through the work of the previous year along with the work of the new year and consider the following factors in my observation notes:

Table 5 Factors in Observation Notes

Consideration	Descriptions
Research objectives and research questions	Identify research objectives and questions and select works that are closely related to the topic and concerns of the study.
Regional cultural identity	Consider the characteristics and elements of the regional culture of the study and select works that reflect and emphasise the regional culture.
Highlighting innovation and uniqueness	Look for work that stands out in terms of innovation and uniqueness, with a distinctive idea, technique or presentation.
Representation and diversity	A representative and diverse sample of works is selected, covering a range of styles, themes, creator backgrounds and audience reactions.
Accessibility and operability	Evaluate the accessibility and operability of work samples to ensure that sufficient information and material can be obtained for observation and

3.3.2 Interview Guide

Based on the sample design, as well as Michel's theory of images and visual culture studies, the interview guide will incorporate the following key points:

- The production and consumption of images
- The social and cultural significance of images
- Power relations in visual practices
- Interactivity between image and viewer
- The political and historical nature of images
- The relationship between image and text

3.3.2.1 The Interview Questions for the Creators

1. We can learn that your works are very much characterized by regional culture, may I ask how you determined the theme of your works?
2. After determining the theme, how did you choose and use the visual elements and symbols? Can you give me some examples?
3. There are many forms of lighting works, how do you determine the form of expression of your work?
4. Can you tell us about the production process of your work, whether it is an individual work or a teamwork, and how you distribute the work if you work in a team?
5. What do you think is the biggest challenge in creating your work?
6. When creating the content, how do you use the visual images you create to express and convey regional culture?
7. How do you consider the politics and history of the visual images in the creation process?
8. How do you ensure that the visual expression of your work is in line with the cultural identity of the region?
9. How do you consider audience feedback and interpretation in your creative process?
10. Are you aware of your position of power as a creator in the creative process and how do you design the audience's behavior and thinking in your work?
11. In the process of creating your work, are you influenced by any social power factors? Or what kind of social, cultural, or political significance do you think your work has?
12. How do you think about the use of textual elements when creating your work?
13. What do you want the audience to take away from your work?
14. Were you influenced by previous audience feedback in the creation of this work?

15. As a creator, what do you think a good light work rich in regional culture should look like?

3.3.2.2 The Interview Questions for Consumers

1. How many times have you come to the festival? What is the different experience every time you attend?

2. Why do you come to Guangzhou International Lighting Festival or what attracts you most to Guangzhou International Lighting Festival?

3. What are your feelings and impressions of the Lighting installation artworks in the festival?

4. Tell me about the most impressive work, what impressed you the most?

5. How do you feel and understand the cultural significance of these works?

6. Are there any specific graphic elements or symbols that remind you of Guangzhou's regional culture?

7. Did you have any interactive experience in viewing the artworks, can you share some specific experience?

8. What kind of works do you expect to see if you participate in the festival again?

9. What impact do you think the festival will have on Guangzhou? For example, culture, economy, etc.

10. How do you think the feedback and interaction from the audience will influence the creators' future designs?

3.4 Data Analysis Methods

Data analysis is an important part of getting the results of the study, which will be analyzed in several steps in this study:

Organization of data: firstly, the observation and interview transcripts were organized, the interview transcripts were converted into text format, and then the case texts, as well as the interview texts, were categorized.

Coding frame setting: based on image theory and visual culture theory, the coding frame is designed as follows.

Table 6 Coding Frame

Coding framework	Visual element	Colour Geometry Light and shadow forms
	Socio-cultural significance	Thematic Essential properties implied or reflected by a notion
	Audience reaction	Emotional response Interpretation of the work from the audience's point of view Behavioral response
	Artist's Approach	Appliances Skill Style of expression
	Creative Background	Historical incident Cultural inheritance

The coding frameworks for the case study and interview data may have differed in the actual study due to the different methodological focuses of the study. However,

regardless of the consistency of the frameworks, they will provide a richer and more in-depth perspective to the study.

Sorting out the coded data: the data obtained was organized and coded through the coding framework described above.

Joint analysis: interview data and observation data are analyzed together to identify similarities and differences.

Interpretative argumentation: justifying the results of the analyses obtained to ensure the reliability of the study.

Presentation of the report: after completing the analysis, the research results are presented in a clear writing style and precise presentation.

3.5 Reliability and Validity of the Study

This project is designed to ensure the reliability and validity of the research from both subjective and objective dimensions, firstly subjectively by using a variety of research methods and two research theories to ensure that the research methodology and research theory can be improved to make the results more valid, and secondly objectively by using member checking and peer review to improve the quality of the research.

Member checking: The data obtained from this study will be fed back to the study participants to again compare the reliability of the data and to obtain valuable feedback in order to facilitate the improvement of the quality and accuracy of the study.

Peer review: the whole process of the study, including research design, data collection, data analysis and findings, are submitted to other peer researchers for review in order for them to obtain constructive comments.

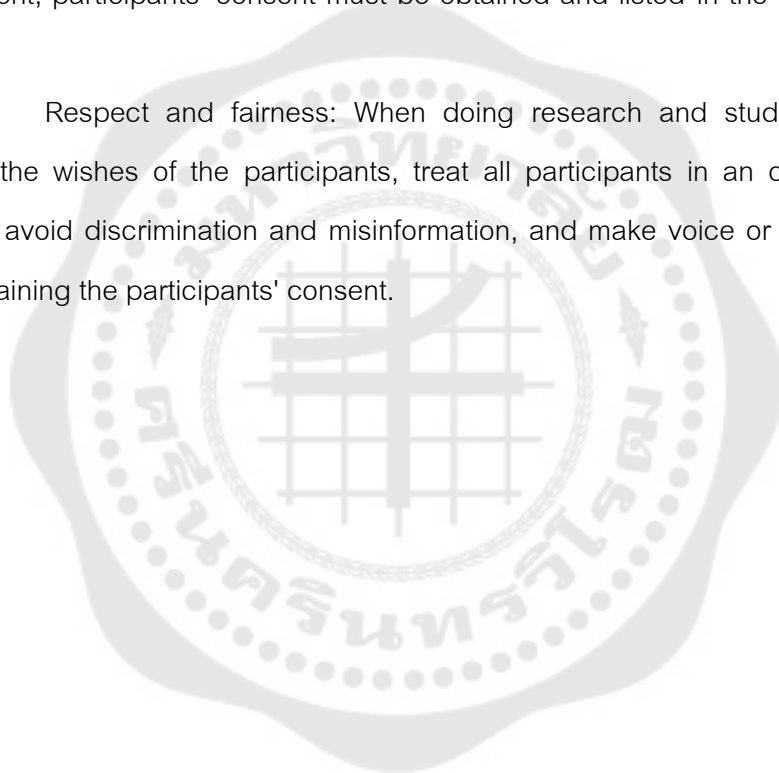
3.6 Ethical Aspects of the Study

Regardless of any form of research, ethical and moral issues need to be taken into account to ensure fairness, honesty and transparency in research (Resnik & Elmore, 2016) . This study will avoid ethical and moral issues by doing the following:

Informed consent: This study will inform study participants of the purpose of the study, the possible risks, and benefits of the process, as well as the problems they may encounter in the study and their right to withdraw at any time. This study will sign an informed consent form with each participant so that the participant fully understands the process and risks of the study and signs it.

Protection of privacy: Participants' privacy will be protected as much as possible in the writing of the study report, and if the study needs to be made transparent, participants' consent must be obtained and listed in the informed consent form.

Respect and fairness: When doing research and studies, we will fully respect the wishes of the participants, treat all participants in an objective and fair manner, avoid discrimination and misinformation, and make voice or video recordings after obtaining the participants' consent.



CHAPTER 4

DATE ANALYSIS

The purpose of this qualitative study is to explore the methodologies in Lighting installation art design as influenced by regional culture. It aims to delve into the distinct regional cultural aspects of Lighting installation art and the methodological frameworks for designing light installations that are deeply embedded in regional culture. In this research, four key demographic groups associated with Lighting installation art were chosen at designated research sites. Purposeful sampling for surveys was employed, along with extensive interviews. The analysis of the data is presented in two parts:

Part One: Analysis of case studies focusing on the regional cultural characteristics of Lighting installation in Guangzhou International Lighting Festival 2021-2022.

Part Two: Analysis of case studies focusing on the regional cultural characteristics of Lighting installation in Guangzhou International Lighting Festival 2023.

Part Three: Analysis of in-depth interview data examining the design methods of Lighting installation art based on regional culture in Guangzhou International Lighting Festival 2023.

This study primarily focuses on the Guangzhou International Lighting Festival over the past three years (2021-2023). The 2021 Guangzhou International Lighting Festival was postponed to 2022 due to the impact of the pandemic, thus, this research concentrates on both the 11th edition in 2022 and the 12th edition in 2023. Notably, the 2022 festival adopted a hybrid format, combining both online and offline modalities, with the online exhibits predominantly utilizing AR technology for presentation.

Set against the backdrop of regional culture, this study meticulously selects nine offline works from previous festivals for case analysis. Additionally, it examines two online pieces from the 2022 Guangzhou International Lighting Festival's AR mini program "Cloud Viewing of the Lighting Festival," which featured Guangzhou Tower and the Five Rams Sculpture as their themes. Furthermore, this research includes random interviews conducted at the 2023 Guangzhou International Lighting Festival with 12

visitors and 6 creators. This group of creators encompasses young students, emerging artists, seasoned artists, and planners.

The theme of this year's festival was "Radiant Bay Area, Glowing Yangcheng, Shaping the Future," featuring 25 groups of light and shadow art installations. A significant highlight of the 2023 Guangzhou International Lighting Festival was the fusion of Lingnan culture (Guangzhou's regional culture) with advanced light and shadow technology. The following information pertains to the 11 artworks selected for the case study analysis:

Table 7 Artwork Samples

Features	Artwork
Lingnan culture	"Dazzling Bay Area" (2023) "Rhythms of Water" (2023)
Historical and cultural heritage	"Guangdong's Light" (2023)
Local folklore and traditional celebrations	"Banana Leaves in the Rain" (2018)
Cultural signs and symbols	"Impressions of Guangzhou" (2023) "Lotus of Prosperity" (2017) "The Handshake" (2023)
Local Stories and Legends	"Battle for Art," "Pearl of Haixin" (2019)
AR Online Showcase	"Charming Guangzhou" (2022), "Sui City Five Rams" (2022)

Details of the age range for the interviewed audience samples are as follows (12 individuals in total):

Table 8 Audience Samples

Age level of participation	Number of samples
<20 years	1
20-30 years	9
30-40 years old	2
>40 years old	0

Details of the interviewees are as follows:

Young Students:

Yiyun Mo: A young student, female, currently enrolled in the graduate program of Digital Media at Guangzhou Academy of Fine Arts. Her artwork "The Handshake" has been selected for exhibition at the 2023 Guangzhou International Lighting Festival.

Yi You: A young female student, presently a graduate student in Digital Media at Guangzhou Academy of Fine Arts. Her artwork "Impressions of Guangzhou" was selected for the 2023 Guangzhou International Lighting Festival exhibition.

Young Artists/Teachers:



Figure 1 Shanting Zhang, Clement Himbert, Zexuan Huang, Mincong Huang

Source: Image by the researcher.

Shanting Zhang: A young male educator, teaching Digital Media at the Guangdong Academy of Drama and Dance. He led the light design team for the 2023 Guangzhou International Lighting Festival and created the artwork "Rhythms of Water."

Zexuan Huang Team: A team comprising three members of an international family. The father, Mincong Huang (right in the image), is an artist, his daughter Zexuan Huang (center) is a dancer, and her husband Clement Himbert (left in the image) holds a doctorate in music. Over the years, this team has produced several works for lighting festivals, including "Banana Leaves in the Rain" (2017), "Pearl of Haixin" (2019), and "City Symphony: The Fireworks of Human Life" (2023). "Banana Leaves in the Rain" was notably chosen in 2018 as a gift for the 30th anniversary of Guangzhou's sister city relationship with Lyon and was exhibited at the Lyon Festival of Lights.



Figure 2 Qiao Ji, Xiqing Liang, Hai Zhao

Source: Image by the researcher.

Artists/Professors:

Qiao Ji: An artist and the Vice President of the Chinese Stage Art Society, a Guest Professor at the Central Academy of Drama, a distinguished expert of the Ministry of Culture and Tourism, and the Honorary President of the Guangdong Stage Art Research Society. He presented "Battle for Art" at the 2023 Guangzhou International Lighting Festival.

Xiqing Liang: An artist, national top-tier stage design artist, National Art Fund committee member, Vice President of the China Stage Art Association, Vice President of

the Guangdong Stage Art Research Society, and a Guest Professor at the Guangdong Dance and Drama College. His lighting work "Expansion" was featured in the 2019 Prague (PQ) International Stage Art Exhibition. His piece "Guangdong's Light" was showcased at the 2023 Guangzhou International Lighting Festival.

Planners:

Hai Zhao: The chief planner of the 2023 Guangzhou International Lighting Festival, a national top-tier stage designer, head of stage and lighting design at the Guangzhou Opera House, Vice President of the Guangzhou Stage Art Association, and a Guest Professor at the Guangzhou Dance and Drama College. In this festival, he took the lead as the chief planner and created the works "Origin" and "Dazzling Bay Area."

4.1 Guangzhou International Lighting Festival 2021-2022: A Case Study of Works in Epidemics

This part primarily employs case analyses to study the cultural attributes of Lighting installation art, focusing on how regional culture is represented and its characteristics in Guangzhou International Lighting Festival 2021-2022.

The 2021 Guangzhou International Lighting Festival was postponed to 2022 due to the impact of the pandemic. The 11th Guangzhou International Lighting Festival was the first time adopted an online presentation format. Integrating AR and XR technologies into light art, the festival showcased AR light works featuring landmarks like the Guangzhou Tower and the Five Rams Sculpture, as well as XR works performed by real-life actors. This edition of the festival, while grounding itself in traditional Lingnan culture, explored the boundless possibilities of experiencing light and shadow (Lang Hui, 2022).

"Charming Guangzhou" utilized advanced Augmented Reality (AR) technology to brilliantly depict the rapid development of Guangzhou in the modern era. This work not only narrated the story of the city's rise but also highlighted Guangzhou's steadfast commitment to sustainable development amidst rapid changes. The creators skillfully blended Guangzhou's beautiful natural scenery with its thriving urban landscape, vividly capturing the city's unique allure. In the piece, traditional Chinese elements like the

wake-up lion and the Guangzhou Tower were incorporated, enabling viewers to instantly recognize these as iconic symbols of Guangzhou. Moreover, the visual style of the work ingeniously employed Chinese ink painting techniques, merging this ancient art form with modern AR technology, offering viewers an extraordinary visual feast.



Figure 3 Charming Guangzhou

Source: Image by the researcher.

Similarly, "Sui City Five Rams" as an AR piece, adopted a distinctive Chinese style, blending tradition with modernity to display the unique cultural charm and cityscape of Guangzhou. Key elements of this work included Guangzhou's architecture, cityscape, and the iconic Five Rams Sculpture. These elements were skillfully integrated into the piece, showcasing Guangzhou's reputation as the "City of Flowers." The fusion of traditional Chinese art forms with contemporary AR technology not only created a novel viewing experience for the audience but also displayed the profound cultural heritage and unique charm of Guangzhou.



Figure 4 Sui City Five Rams

Source: Image by the researcher.

From the online works, one of the artistic representations of regional culture is mainly categorized into the point:

Tangible Representation of Visual Symbols: This involves using concrete and direct visual elements in art to express specific ideas or concepts. These symbols, such as characters, objects, or scenes, communicate information or emotions to the audience in a vivid and straightforward way. For example, "Dazzling Bay Area" uses direct local cultural visual elements in its images; "Banana Leaves in the Rain" employs light installations to physically simulate kapok flowers, evoking the ambiance of Lingnan.

4.2 Guangzhou International Lighting Festival 2023: A Case Study of Post-Epidemic Works

4.2.1 Regional Cultural Characteristics in Lighting Installation Art

In discussions about light installations featuring regional culture, the audience had a lasting impression of the "Dazzling Bay Area." "Wandering through the Square, the piece that most strongly resonated with me in terms of regional culture was 'Dazzling Bay Area.' Its allure stems from the fusion of multiple elements and images, which are not only visually stunning but also sparked deep connections with the culture of Guangzhou. For example, watching the exquisite Guangfu architecture, the complex

and delicate window flowers, and the animated lion dance on the screen, I was virtually transported to a fantastical world blending tradition with modernity. This profound cultural immersion offered me a more vivid and in-depth understanding of Guangzhou's cultural heritage." (2023, audience Interview 9) "Dazzling Bay Area" is this event's highest rendition of Lingnan culture. The piece is a 12-minute extensive light installation, comprising four sections: "Intro: Dragon Rising over the Pearl River," "First Part: A Thousand Miles of Harmonious Winds," "Second Part: Peaceful Universe," and "Third Part: Bay Area of the Times." Grounded in the profound historical and cultural roots and legends of Lingnan, it uses mesmerizing light and shadow art to tell stories of Guangzhou's dynamic red culture, the ancient Lingnan culture, the internationally connected Maritime Silk Road culture, and a culture of innovation. It also incorporates distinctive Lingnan cultural elements like the Five Rams, architecture, lion dance, Guangcai porcelain, and Guang embroidery, sketching a picturesque panorama of Lingnan's allure.

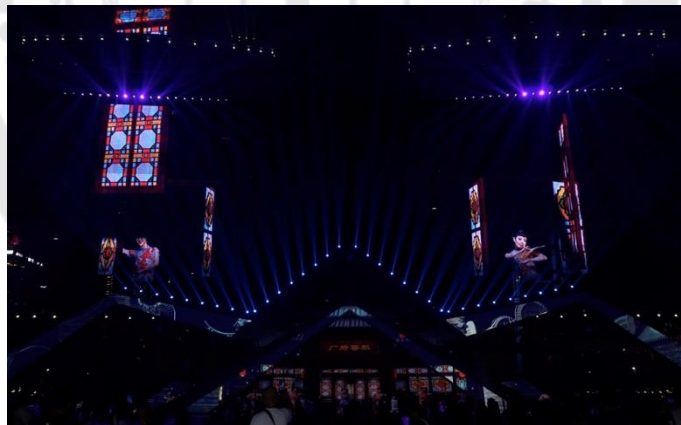


Figure 5 Dazzling Bay Area

Source: Image by the researcher.

In the Guangzhou International Lighting Festival, the piece "Dazzling Bay Area" captivated widespread attention with its unique artistic flair and innovative technology. It ingeniously employed modern lighting techniques and dynamic visual

effects to craft a surreal visual experience, intertwining traditional cultural motifs with modern technological methods. This approach not only highlighted the unique style of Lingnan culture but also respected and recreated its profound historical and rich traditional roots. The work drew inspiration from the rich history and culture of the Lingnan area, including traditional architectural designs, folk arts, and local legends. This artful combination of elements not only showcased the region's cultural identity but also deeply portrayed its historical significance. As one of the festival's focal points, "Dazzling Bay Area" significantly contributed to raising public awareness and interest in Lingnan culture. It exemplified the successful integration of traditional culture with modern art, presenting a case study in harmonizing tradition with modernity. Through its distinctive visual representation, the work provided an immersive experience for viewers, offering not just a visual spectacle but also an exploration into cultural depth, demonstrating the potential for cultural continuity and innovation.

Among the works related to Lingnan culture that captured the audience's attention, "Rhythms of Water" was frequently mentioned:



Figure 6 Rhythms of Water

Source: Image by the researcher.

"In this piece, my initial focus was on the theme: the sensation of standing by the riverside. To convey this feeling, I concentrated on two essential elements: wind and river. My goal was to capture the sensation of wind caressing the body and the

fluidity of river water. Therefore, I employed dynamic techniques to depict the feel of the wind, resonating with the element of river water. This formed the basis of my creation. Subsequently, I extracted the structural elements of water, crafting a visual effect that mimicked water flowing down from the Canton Tower. Within this illusion, I ingeniously hid performers of traditional instruments like the pipa and guzheng behind the water curtain, creating a picturesque scene of high mountains, flowing rivers, and harmonious strings. This not only resonated with the theme but also added layers of mystery and cultural depth. In portraying regional culture, I extended beyond traditional Guangzhou culture. I incorporated elements from the surroundings, such as the pristine white of the Canton Tower and the essence of the Pearl River. In the video, I utilized Lingnan cultural motifs, like traditional Chinese landscapes and architecture, for a multifaceted portrayal instead of adhering to a single fixed image. In this way, I endeavored to capture and express a broader, more diverse cultural ambiance while maintaining a tight link to the theme." (Zhang, personal communication, November 30, 2023)

The people of Guangzhou, living beside water, are intimately connected with it. Water has fostered the distinct regional culture of Lingnan. As someone rightly put it, The work vividly brings to life the feeling of "standing by the river" through the core elements of wind and water, encapsulating it in the theme "Rhythms of Water." This portrayal is not limited to tangible sensory experiences but delves into the cultural depths. The method, using dynamic visual technology, creates an illusion of water cascading from the Canton Tower, ingeniously integrating performers of traditional instruments like the pipa and guzheng, thus forming a melding of modern and traditional art. This fusion is not just a mere cultural amalgamation but a deep exploration of the multifaceted nature of Guangzhou and Lingnan culture. From a cultural representation perspective, the creator merges the modern architectural traits of the Canton Tower with traditional Lingnan cultural elements, offering a cultural expression that surpasses traditional regional confines, enriching the cultural depth of the piece and embodying a spirit of innovative artistic exploration.

Local industries form a part of the regional historical culture, and their integration with modern artistic elements in audio, lighting, and electricity produces a distinct visual experience. "Initially, what drew me in was a machine installation that combined music, sound, light effects, and electricity. The intense impact of this combination was quite overwhelming, providing an uplifting experience." (2023, Audience Interview 2)



Figure 7 Guangdong's Light 1

Source: Image by the researcher.

"Guangdong's Light," a remarkable large-scale kinetic mechanical installation, exhibits extraordinary creativity in blending art with technology. This work is composed of three installation groups, creating a cohesive and harmonious entity, housing intricately designed theatrical lighting equipment within. Its distinctiveness lies in that it is not merely an art piece but also a manifestation and exploration of lighting technology. The core of the work is in transforming the festival's main lighting fixtures into the main visual element. This transformation is not a mere replication but an artistic enlargement and representation of the internal structure of the fixtures. Such a design approach not only highlights the complexity and finesse of the lighting fixtures but also elevates the audience's comprehension and appreciation of lighting technology. Structurally, the fixture's design comprises precise mechanical devices, dynamically presented through programmed control. The motion of these mechanical elements,

synchronized with the lighting and sound effects, offers a dual sensory impact, both visual and auditory, to the audience. Particularly notable is the rotating motion of the installations, enhanced by the sparkling lights, adding a vibrant and dynamic aura to the piece. The installation displays an enlarged version of the exposed structure of lighting fixtures, where the mechanical materials and metal frameworks are clearly visible, not only demonstrating the allure of industrial aesthetics but also showcasing refined craft techniques.

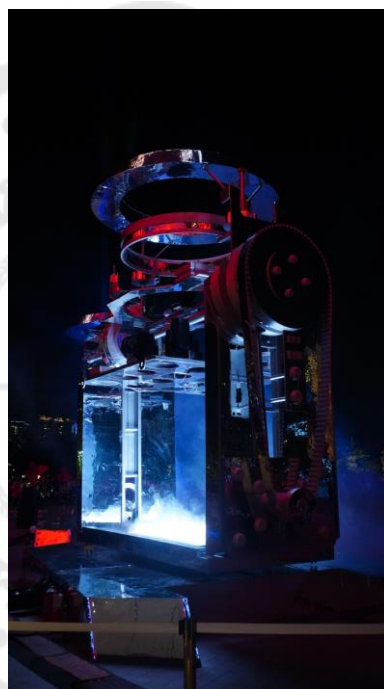


Figure 8 Guangdong's Light 2

Source: Image by the researcher.

"Guangdong's Light," as a large-scale kinetic mechanical installation that integrates art and technology, creates a dynamic visual appeal and significantly communicates the complexity and aesthetic value of lighting technology. This work, by integrating mechanical movement with lighting and sound, showcases its essence - the rotating mechanical devices and sparkling lights, accentuating the aesthetics and dynamic nature of the technology itself. This innovative artistic representation not only

deepens public awareness of lighting technology but also transcends the conventional boundaries between art and technology by revealing the technology's internal structure. Consequently, "Guangdong's Light" stands as a distinguished example of art and technology integration, providing not just a unique visual and auditory experience but also stimulating deep reflection on the role of technology in artistic creation.

"Battle for Art" is an art piece centered around local figures, skillfully depicting the artistic ethos of Fengmian Lin, a prominent modern Chinese painter and art educator from Guangdong. This work serves as an artistic homage to Fengmian Lin and a deep expression of the rich cultural traditions and artistic legacy of the Guangdong area.



Figure 9 Battle for Art

Source: Image by the researcher.

The core of the work lies in reinterpreting the story of the opera "Fengmian Lin" through the form of light and shadow installations. Using an external metal scroll as a visual symbol for Fengmian Lin is an innovative aspect of this artistic creation. The

front of the scroll outlines Fengmian Lin's portrait, combined with the rhythm of multimedia light and shadow and the live opera performance, creating an immersive experience. This design not only visually attracts the audience but also resonates with them on auditory and emotional levels. Furthermore, the "visual action" distilled in the aesthetic space of the piece is not just a representation of the historical figure but also embodies the theatrical significance and reading practices beyond the theater in a form of sensory association. This approach to artistic creation, in narrating local stories and legends, transcends the limits of traditional narrative by combining Fengmian Lin's story with the cultural background of the Guangdong region through visual arts, revealing the deep meanings and universal values of local culture.

The researcher has also added case studies of works from before the epidemic to this section.

In the 2019 Lighting installation art field, the work "Pearl of Haixin" showcased artistic innovation combining history and culture. This piece, inspired by the legend of Yangsui Zhu and Hai Zhu Shi, used interactive lighting and music performance techniques to deepen the exploration of its cultural theme. It contributed not only to the field of audio-visual arts but also displayed the results of cutting-edge research in the intersection of architecture and mathematics. The architectural design concept of "Pearl of Haixin" originates from mathematical models, transforming abstract mathematical spaces into real physical spatial structures. Its minimal surface construction is based on complex mathematical formulas and computer programming, creating a mysterious and futuristic experience reminiscent of a "wormhole space." In terms of artistic presentation, the work incorporates a fusion of Eastern and Western musical elements, such as choosing Debussy's "La Mer" and "My Motherland" as the main theme of light and music, enhancing the multi-dimensional representation of cultural connotations. Additionally, the work represents the integration of Chinese civilization with world civilizations through its carefully designed light effects and alternating music, where the colour changes in the light effects not only symbolize

different cultural landscapes (like the blue Earth and golden deserts) but also offer an artistic interpretation of natural landscapes (Su, 2019).

In summary, "Pearl of Haixin" is not only a combination of visual and auditory arts but also an innovative practice in interdisciplinary fields, including architecture, mathematics, music, and visual arts. Such artistic works display a perfect fusion of innovative technology and artistic aesthetics, providing deep exploration of culture and history, as well as possibilities for future spatial forms.

"Banana Leaves in the Rain," a key feature of the 2017 Guangzhou International Lighting Festival, was showcased at the Lyon Festival of Lights in 2018, commemorating the 30th anniversary of the friendly city relationship between Guangzhou, China, and Lyon, France. This installation consists of over 4,000 kapok flower-shaped lighting fixtures, which change in sync with the melody of the renowned Guangdong music piece "Banana Leaves in the Rain," crafting a three-dimensional visual akin to Lingnan landscape paintings, such as chasing colourful clouds and moonlit lotus ponds. The exhibition is split into two segments: a continuous 5-minute musical light performance and a 5-minute interactive session with the audience. In the interactive part, the audience can "conduct" the audio and lighting effects by placing their hands in a designated sensing area. It's important to note that the music used in the interactive segment is entirely sourced from natural sounds, like thunder, wind, rain, and frog croaks. For its display in Lyon, the piece underwent a special redesign to suit the ancient theatre setting and to appeal to the local audience. The original tune of "Banana Leaves in the Rain" was reinterpreted and performed by a French saxophonist, illustrating the work's adaptability and the depth of cultural exchange between China and France. "Ascending from the base to the top of the hill resembled a life journey, filled with challenges and warmth. Visually, it felt like moving from France to a foreign land, with the variations in clouds and mountains offering a renewed perspective." (Clement Himbert, personal communication, November 28, 2023)

The 2017 work "Lotus of Prosperity" stands as a model for the application of cultural symbols in the annals of lighting festivals. The piece is inspired by the lotus

flower and Tangram patterns. In traditional Chinese culture, the lotus signifies purity and unblemished character, emblematic of the spirit of Chinese cultural values. The Tangram, a popular ancient Chinese brain teaser, features simple geometric shapes that create a rich aesthetic in their combinations. The artwork uses an isosceles right triangle as its basic shape, arranged through duplication, repetition, and various display methods to depict the lotus in stages of budding and blooming. It utilizes stainless steel and colourful glass materials, creating striking colour variations under different lighting environments. This setup allows for completely distinct experiences for different viewers, depending on their perspective and the time of viewing. Moreover, the piece's transparent quality merges seamlessly with the cityscape, people, and surroundings, portraying the splendor of the "Lotus of Prosperity" and exemplifying the legacy and contemporary reinterpretation of traditional Chinese cultural elements in modern public sculpture, in line with the "Belt and Road" strategy.

In the audience interviews with artworks, when inquiring about the regional cultural elements that left the deepest impression, the responses regarding the frequency of references to regional culture in the works were as follows:

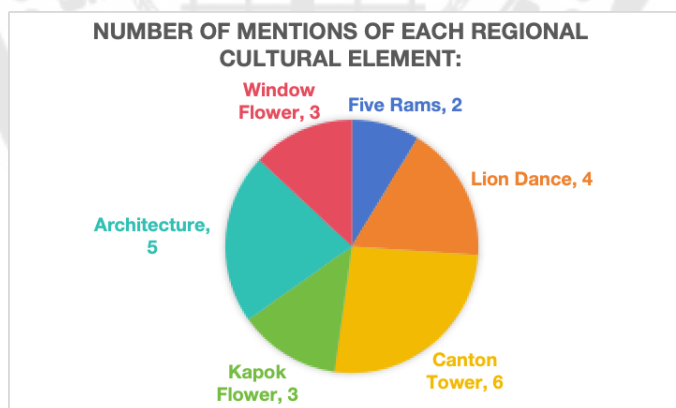


Figure 10 Number of mentions of each regional cultural element

Source: Compiled by the author (data derived from records of audience interviews).

From the analysis of the content of the audience's interviews, it can be concluded that the audience argues Visualisation of images is a kind of method to represent regional culture.

In case studies based on the above works, the artistic representation of regional culture is mainly categorized into these points:

Abstract Expression of Cultural Elements: This refers to the abstract presentation of cultural elements in art. Unlike tangible representation, abstract expression relies on colour, shape, lines, or other non-figurative means to convey cultural significance. For instance, "Lotus of Prosperity" uses the abstract language of Tangram parametrization for urban public art; "Pearl of Haixin" showcases cultural elements in an abstract "wormhole space" designed through mathematical model spaces.

Harmonious Blend with Regional Environment: This signifies the art's seamless integration with its geographical and cultural setting. Such integration implies that the artwork is not only aesthetically but also culturally, historically, or socially in sync with its surroundings. For example, "Rhythms of Water" is integrated with the Canton Tower, creating an effect of water flowing from the tower with the light's rhythm.

Immersive Audio-Visual Experience: This involves creating an all-encompassing experience through a combination of visual and auditory elements, immersing the audience in the artwork. This type of immersion is often achieved with imagery, sound, and even interactive technology. For instance, "Battle for Art" employs opera sound effects and stage lighting for an impactful presence; "Guangdong's Light" leaves a lasting impression with its large "light fixtures" and dynamic sound and light effects.

4.2.2 Impressions and Memories of Regional Culture

Besides the aspects previously mentioned, Lighting installation artworks rich in regional culture also make a lasting impression on viewers due to their familiarity and curiosity, as well as their interactive nature.

The feeling of familiarity and curiosity is one of the reasons artworks leave a lasting impression on audiences. "When discussing the most memorable work for me, I can't recall its exact name. There was a piece that somehow resembled my memory of Guangzhou. Upon first seeing it, it struck a chord of familiarity, perhaps resembling some architecture or other elements I had encountered before. It seemed to embody an element that represented Guangzhou. I'm not entirely sure what specific aspect drew me in or why it left such a profound impression, but it felt like something that existed in my memory. Therefore, I was intrigued by this piece; upon first sight, it brought a sense of familiarity." (2023, Audience Interview 1)



Figure 11 Impressions of Guangzhou

Source: Image by the researcher.

"Impressions of Guangzhou" is an outdoor lighting installation art piece that masterfully combines Guangzhou's traditional architectural elements with modern artistic methods, providing audiences with a distinctive immersive experience. Central to this artwork is its use of color elements, drawing from the hues of Guangzhou's iconic colorful Manchu windows and employing vibrant, warm tones to craft a colorful maze. This maze offers not just visual pleasure but also delves into cultural and historical exploration. Within this vibrant labyrinth, visitors can move freely, experiencing a fascinating space where light and structure interweave. The light installations, synchronized with traditional musical melodies, create a sense of immersion, making the

audience feel as though they are enveloped in the history and culture of Guangzhou. This design not only highlights Guangzhou's unique regional elements (Manchu windows) but also forms a link between the city and personal memories.

Through its innovative design and execution, "Impressions of Guangzhou" displays the traditional allure and cultural richness of Guangzhou. The overall idea and execution of the work not only portray the city's historical imagery but also demonstrate how artists can reinterpret and showcase traditional culture through modern technology and creative perspectives. For viewers, this represents not only a visual journey but also a deep exploration and comprehension of Guangzhou's traditional culture.

Some audience members interviewed mentioned "The Handshake" as the most impactful work due to its unique interactivity. With the evolution of technology and the internet, "interactivity has become a distinct language in installation art (2016, Xu Xiaoding). Artists, through interactive designs, can effectively engage the audience's psychological response. Although the participation of the audience is passive, the 'interactivity' in the artwork empowers them to take part in the creative process (2022, Liu Ke).



Figure 12 The Handshake

Source: Image by the researcher.

"The Handshake," a light interactive installation in public spaces, enriches the city of Guangzhou with a warm, human-centric artistic feature through its unique

design and technological realization. Drawing inspiration from the universal and friendly act of a handshake, the work symbolizes interpersonal communication and understanding. Comprising numerous hand models posed in a handshake, it not only represents amity but also invites audience interaction. As viewers approach these hand models, they begin to rotate, creating a dynamic and interactive visual effect with colourful lights. This design not only captivates visually but also resonates emotionally with the audience, conveying messages of care and amiability. Additionally, the use of sensors in the artwork intensifies its interactivity, enabling each viewer to become part of the artwork and experience its dynamic charm.

"The Handshake" provides an aesthetic treat with its moving hand shapes and light effects, but more significantly, it offers a humanely enriching artistic experience. The artwork reflects Guangzhou's warmth and inclusiveness, articulating the city's and individuals' friendliness and harmony through artistic expression. It transcends being merely an art piece to become a medium for social and cultural interaction, adding layers of humanistic concern and artistic atmosphere to the city's public spaces.

The research findings indicate that to effectively showcase the regional cultural traits in Lighting installation art, creators should focus on the following aspects: tangible representation of visual symbols, abstract expression of cultural elements, harmonious integration with the regional environment, and an immersive audio-visual experience. To make a more memorable impact on the audience, it is beneficial to incorporate elements that are both familiar and intriguing to the viewers and to consider the possibilities of interaction between the artwork and its audience.

4.3 Guangzhou International Lighting Festival 2023: In-depth Interview Analyses After the Epidemic

4.3.1 Creative Process

4.3.1.1 Creative Mode

In the interview, artist Qiao Ji believes that the thought process of creation is pure, and the nature of the creative process is complex. "As visual designers

or installation artists, we often extend ourselves through action. The learning process is long, but when you go deeper, you may recall things you learnt a long time ago. These points of recollection and bursts are very important for creators. The creative process is pure and nothing interferes with the artist's thoughts. But in the means of presentation, it becomes very complex, like a chain, with each link closely connected. This is the nature of the creative process (Ji, personal communication, November 29, 2023)." However, Hai Zhao believes that this kind of thinking needs to be cross-border. "To make a light installation, you need to have a concept first. You need to understand and generate imagination because it is different from painting. You need to choose the right materials and technical means according to your speciality, and if you want to make a good installation, you must study many cross-border cultural elements. For example, theatre, poetry, philosophy, aesthetics, etc. Research in many aspects to understand these elements. That way you can see a work more thoroughly when you look at it. (Zhao, personal communication, December 2, 2023)

What can be gleaned from the seemingly contradictory dialogue is that this stock is not in conflict with crossover; it is purely built on crossover, and creators can only conceptualise and create in depth with a multifaceted understanding.

Creative patterns can be analysed from the following interviews:

The Handshake "We worked as a team, with me as the main guide. The concept was initially proposed by me and was selected with the approval of my teacher. I was responsible for determining the graphic design and the overall route, while the other members were responsible for the specific modelling and modeling. After the modelling was completed, I would iterate on the model. We had expected to be involved in the construction, but in the end, we only provided the programme. We created construction drawings, and other students were responsible for on-site measurements and filming small footage in hopes of showcasing our work on the B-site."

Impressions of Guangzhou "Our work is a team effort. I was mainly responsible for the refinement of the theme concept. There are two other members in the

team, a girl and a guy who can model. He is responsible for determining the dimensions and modelling, while I am responsible for all the ground up implementation."

Symphony of the City - Fireworks of the Earth" Michael Wong had the initial concept, and he coordinated the recycling of the base material (mooncake boxes). He then had Liu and his company build and add the lighting, and finally my job was to design and programme the lighting animation and sound. Symphony of the City - Fireworks of the Earth version 2.0 was an international team effort. My family is an international family, I am the lighting designer, my daughter is a dancer studying in France, my son-in-law is French with a PhD in music from Europe and very proficient in computer programming software. Their understanding of the art of this work plays a fundamental role, the whole lighting programme changes the effect of the combined interaction with the music, is specifically responsible for by them. And the general manager of the production manufacturer Dongguan Lijing Lighting Company, Liu Wenqiao, is a good friend of mine for many years, and the work "Raining Bananas", which represented the Guangzhou International Lighting Festival to participate in the Lyon Lighting Festival in France in 2018, is a cooperation between our family and Dongguan Lijing Lighting.

The creation of the work is basically done through a team, unlike traditional art, Lighting installation art requires more cross-border culture and skills, and it is difficult for a single individual to complete all the work of creation. In all the selected cases, the works are completed in the form of team division of labour.

4.3.1.2 Creative Process

When talking about the steps of the creative process, young students and artists gave different answers.

Young students:

The Handshake: "We started on the 4th of July, with only a month and a half to go. First, we decided on the theme, then we designed the shape, the movement and the form of interaction. Then comes the modelling, and then choosing materials. I was responsible for software programming, communicating with the factory about the

hardware part, testing waterproofing and connecting wires, etc., and finally on-site installation and inspection." (Mo, personal communication, November 27, 2023) From this, the overall process sequence can be summarised into seven steps: theme determination, visual design, modelling, material selection, testing, fabrication and installation, and checking. (Mo, personal communication, November 27, 2023)

"Impressions of Guangzhou" starts with defining the theme and then selecting the elements to express it. The next step was to look for a large number of references on the Internet, not only for the elements, but also for the actual implementability. We also need to consider the choice of materials that fit the theme. I prefer to do a quick sketch of the initial plan by hand, and then have my classmates do the modelling. During the modelling process, I will intervene to adjust the details or modify the model directly. Test the model in the computer. Then determine the specific modelling based on the installation nodes. For example, the thick line in the original model represents the frame, and later the width, thickness, height of the frame and the specific location of each mounting point need to be determined. Dimensional and construction drawings are produced. Then submit them to the builder for installation and verification" (You, personal communication, November 28, 2023) From this, the overall sequence of the process can be summarised into seven steps: theme determination, material selection, sketching design, modelling, testing, production and installation, and verification. (You, personal communication, November 28, 2023)

Artists:

Battle for art: "Creation is a developmental process that begins with a dialogue with the self, then with the audience and the masters, and culminates in a dialogue with the work. This process involves moving from the sensual to the rational and back to the mind, finally reaching the level of philosophical identification. I consider philosophical identification to be the highest point of the cultural level, below theology. The process is pleasurable, but at the same time painful, because the struggle between sensibility and rationality is eternal. This struggle in creation is very natural, similar to the process of the birth of a child. This pain and pleasure extend to every aspect of the

creative process. Therefore, although there is a theme in the creation, our thoughts and actions extend out to include ignorance of the system and the experience of the exhibition. "For me personally, I don't really like to separate the creative process too clearly. I am more accustomed to dealing with creation casually, for example, I may skip a certain chapter when I read a book and use my mind to connect the content before and after the book. Because inspiration can come from many sources, it doesn't necessarily have to be in order. Whilst there are certain steps in making, I don't think there needs to be definite steps in the thinking process. I often start with the last idea, or with the part that touches me the most, and then may work backwards through the other steps. Certain experiences in my life will inspire and trigger thinking, and then I will rationally consider where to start. But this is not a fixed pattern, as inspiration and creativity are often random and sudden. Everyone has different creative habits and learning styles. Personally, I tend to think more in leaps and bounds and will generate different ideas in different spaces and moments. Sometimes a simple sight in a new environment can awaken deeper ideas. When it comes to the production process, it does need to be done in a step-by-step manner, as it's all about the success of the work." (Ji, personal communication, November 29, 2023)

Cantonese Light "This work started out not as a script but as a theme. I discovered the inspiration by chance during my visits to enterprises. I often do cultural and tourism-related creations, so I always have a creative eye. The birth of this work was unintentional, but it was also the result of my usual accumulation. I didn't have a specific task in mind, I just felt that this thing should become a work. As for where I put it, that's where opportunity comes to those who are prepared. Right now, in my company I have made a small model which is a small piece in itself, placed like an artefact. I have been observing it and thinking about it, and I did not create it specifically for the purpose of expressing Guangdong or for any other purpose, including the name of the work, "Guangdong's Light", which is also inspired by my usual accumulation of ideas. It is more of a reflection of my long-term concern in this area." (Liang, personal communication, November 30, 2023)

In contrast, the creative process is clearer and more specific in the young students' narratives, which contain a total of seven steps: theme determination, material selection, sketching design, modelling, testing, installation and verification. It can be seen that the steps are consistent with the seven steps, and the only difference in the order is the setting of the selected material. From the previous interview, we can get that "Handshake" is a light interactive installation and "Impressions of Guangzhou" is a light installation, the only difference is the difference of "interaction", so the order of the selected materials may change due to the form of the work. In the interview, the artist focuses on the thinking process of creation, with a relatively weak expression of the implementation procedure. The artist believes that creative inspiration is a kind of accumulation, and that the creative thinking process is a long-term state, but there will be certain steps in the production, and they are strictly regulated.

4.3.2 Creative Sources and Expression

4.3.2.1 Themes

"The Handshake": "This year's theme was 'Dazzling Bay Area, Illuminating Yangcheng, Crafting the Future.' Our work blended a sense of technology with cultural sentiment, conveying a theme of amicable human concern. We mainly aimed to express the idea of human care. Many contemporary works overly emphasize technological or visual aspects, overlooking human care. We had an earlier version named 'The Unshakeable Hand,' which depicted the inequality in handshakes. This piece was intended to provoke reflection on the nature of handshakes. To align with the lighting festival's theme, we modified the work to reflect Guangzhou's inclusivity and warmth." (Mo, personal communication, November 27, 2023)

"Impressions of Guangzhou": "In the initial phase, we evaluated multiple concepts, all of which were initially rejected. We finally chose a theme related to Lingnan regional culture. As a native of Guangdong, I realized that our classmates from other regions were intrigued by Guangzhou's distinctive culture and cuisine. Hence, we opted to create a decorative art piece that deepened their understanding of Guangzhou. We delved into Guangzhou's unique cultural elements, like the Five Rams and lion dancing." (You, personal communication, November 28, 2023)

"City Symphony: The Fireworks of Human Life": "The 2019 Hong Kong unrest saw patriotic businesses like Maxim's Cakes face challenges. When I bought mooncakes from Maxim's, their beautifully designed box, featuring skyscrapers, inspired me. I pondered whether Maxim's mooncake box could be transformed into a light art installation symbolizing 'home lights' or 'fireworks of human life,' showing solidarity with patriots." (Huang, personal communication, November 28, 2023)

"Lotus of Prosperity": "The design inspiration came from my sentiment towards the homeland: in traditional Chinese culture, the lotus 'emerges unstained from the mud,' symbolizing the spirit and integrity of Chinese scholars ('Emerging unstained from mud' signifies strong, pure, noble, disciplined, and resilient spiritual qualities) (Lu, 2017).

"Guangdong's Light": "During my visits to companies, I noticed that while everyone sees the finished product, few see the internal structure of light fixtures once they are dismantled. As a designer, I am particularly attuned to such structures and discovered their inherent artistic and aesthetic potential. This sparked the idea for this work. My inspiration comes from life, drawing from everyday experiences. I see things differently: a machine, an industrial form, but I perceive the underlying tension and beauty. This ultimately led me to apply this concept to my work. After considering various names, I settled on 'Guangdong's Light,' symbolizing both the night lights and the moon, and playing on the fact that the lighting festival is in Guangdong (Yue in Chinese), phonetically similar to 'moon,' adding a layered meaning." (Liang, personal communication, November 30, 2023)

From conversations with the creators, the sources of inspiration for the artworks can be summarized into five categories:

Daily Customs and Social Observation: Themes are inspired by the daily lives of residents, observing, and researching unique social customs, festivals, market behaviors, and street culture of the area. These elements reflect the lifestyle and social structure of the community, providing real-life reflections and artistic material for light

installations. For example, the inspiration for "Guangdong's Light" came from the author's observations of products during company visits.

Historical Changes and Sentiments of Belief: Themes are derived from the historical background and changes of the region, including significant historical events, turning points in regional development, and stories of beliefs and myths. These historical and belief elements not only provide deep cultural connotations for the light installations but also stimulate the audience's contemplation of time, the past, and the present. For instance, "Lotus of Prosperity" showcases the author's sentiment towards the homeland and pursuit of virtues like strength, purity, nobility, self-discipline, and resilience.

Personalities and Stories: Inspiration is drawn from the lives of historical or contemporary famous individuals, folk heroes, or ordinary people in the region. These characters and their stories often have symbolic meanings that represent or reflect the cultural characteristics and values of the region. For example, "Battle for Art" commemorates Fengmian Lin, a great Chinese painter and art educator. "Pearl of Haixin" is inspired by the beautiful legend of Yangsui Zhu and Hai Zhu Shi.

Nature and Geography: Utilizing the natural landscapes and geographical features of the region, such as mountains, rivers, forests, coastlines, etc. These natural elements not only provide visual beauty but are often closely linked to the cultural identity and legends of the region. For example, the inspiration for "Rhythms of Water" comes from the river water and wind by the riverside.

4.3.2.2 Forms of the Works

Cost constraints can lead to changes in the form of the work. "Impressions of Guangzhous": "We paid special attention to the patterns of Manchu windows, which are colourful and have profound cultural connotations. Coming from an environmental art background, I greatly value the integration of the work with the space. In the Guangzhou Lighting Festival, few works allow the audience to enter and participate personally. Our original design included interactive elements, like shadows left by the audience walking, symbolizing the traces left in Guangzhou. However, due to

budget constraints, we eventually adjusted the form of the work to change with music and light. This adjustment was based on decisions made through extensive case studies, considering which elements were most suitable for live audience viewing and interaction. The final design was determined after careful modelling and deliberation. Our goal was to create an art piece that both represents cultural characteristics and interacts with the audience. Although adjustments were made in the form, we still strived to find the best balance between artistic expression and audience experience." (You, personal communication, November 28, 2023)

Environmental factors often determine the form of the work. The "Rhythms of the Water" is formal: the outer work needs to incorporate images and performances. White is chosen as a clean and holy colour to stand out from the whole scenery. Echoing the Canton Tower behind it, the video footage combines with the tower to form an image of particles rising in space, matching the environment." (Zhang, personal communication, November 30, 2023)

The form of the work also receives influence from power factors such as investors and sponsors, for example. "When designing the piece Guangdong's Light, my original intention was to incorporate modern and futuristic style character performances to create a stage that combines costumes and technological performance. The original concept was to arrange a dance performance in the piece. My initial visual design was for a Lighting installation centered on the performance. I specifically invited choreographers and planned for three performers to participate. In addition, I also plan to compose a piece of music for this work that is rich in the regional characteristics of Guangdong. As this design involves the cooperation of several sponsoring manufacturers, including the manufacture of lighting fixtures, etc., there are still many details that need to be further discussed before it can be realized. I have endeavored to incorporate the thematic concept of this piece into every detail, including special effects such as screens, LEDs, floor tiles, lighting, sound, machinery, lasers and smoke machines, which pretty much encompass most of the functions of our industry, to get

the effect of the form we have seen so far." (Liang, personal communication, November 30, 2023)

From the above interviews, the influences of form can be categorized into the following points: cost constraints, environmental factors, and power factors.

4.3.2.3 Visual Elements

The visual symbols and elements of the work come directly from the figurative use of the source of inspiration, e.g., the creator mentioned in the interview of the work "Impressions of Guangzhou" that "the visual elements are mainly divided into two parts: shape and colour. We have simplified and modernized the graphic elements of the window flower. For the colours, we chose the bright colours common to Manchurian windows, such as yellow, blue, and green. This is a reflection of the wisdom of the ancients, combining light and colour. Our work extracts these shapes and creates installations with coloured acrylic and black frames. The layout of the space and audience movement was also considered. The venue originally had two entrances, but we didn't realize this until the final draft. This unexpected discovery made the design a bit disjointed. So, I think a better design should incorporate local cultural characteristics and site factors. If we had known that there was a bicycle shed on site, we might have echoed it in the design." (You, personal communication, November 28, 2023); the author of City Symphony - Fireworks of the Earth also states, "Our concept itself originated from visual elements, and after further reflection, we thought that the mooncake boxes stacked up are the form of the city's skyscrapers, and by combining them into forms with different differences in heights, a city skyline is formed." (Clement Himbert, personal communication, November 28, 2023)

The visual symbols and elements of the work can also come from the abstract expression of cultural symbols, such as the creator of Lotus of Prosperity, who says: "The basic pattern of Lotus of Prosperity is derived from the Chinese "tangram pattern". According to the Zhou Thigh Calculation Classic, Shang Gao (about 1120 BC) replied to the Duke of Zhou, "Therefore, I folded the moment, and thought that the hook was three wide, the stock was four, and the diameter of the corner was five. Both the

square, the outer half of its a moment, ring, and total disc, into three, four, five. Two moments total length of twenty-five, is called the cumulative moment." This led to the formation of the four-square cutting technique, and then to the tangram board, which is used to develop intelligence. When the tangram was introduced to Europe, it was called the "Chinese Rubik's Cube". During the creation and design process, I have been thinking about how to use the abstract art language of China and the international design language to interpret traditional Chinese cultural elements, so that they can truly reflect the confidence of Chinese culture. The creator of "Water Rhyme" also used abstract expression: "Firstly, we use simple lines to arrange and combine the space, and through the reorganization of lines to form a three-dimensional space. The main purpose is to reflect the feeling of wind, with a sense of rhythm. Every night when the wind is strong, the shaking feels like river water, matching the environment. This is the important starting point."

Visual symbols and elements are formed in two main ways: the first is the figurative use of the source of inspiration, and the second is the abstract expression of the elemental symbols.

4.3.2.4 Material Selection

"The Handshake" We initially wanted to use translucent resin material and light fittings. However, the translucent material was too much like a human hand and would have looked scary, so we chose a wooden hand in the style of a puppet to look less scary. We lighted the outside of the hand to create a warm atmosphere. Our lighting design is a combination of dynamic and static to create a rich layered look." (Mo, personal communication, November 27, 2023)

"Impressions of Guangzhou" We originally wanted to use glass with a frosted, trace effect, but ended up using coloured acrylic to save costs. This made the work look monotonous. The height of the originally planned model was also much higher. We considered covering the cycling shed with a mirrored material to create the feeling of an extension of space. This would have minimized the impact of the cycle shed and the reflective effect would have created some vignetting. But in the end the

organizers did not implement this, so the result is now three or four stores away from what we expected." (You, personal communication, November 28, 2023)

"Cantonese Light" I originally designed the lamp using red and yellow wires. The original plan was to have a black lamp body but considering that it would not be effective during the day and might be weakened by the night colour, I decided to change the design. I think the lamp itself should be attractive, so I chose a mirrored material. Mirrored polished stainless steel is widely used in sculpture and maps the surroundings. I wanted the piece to be attractive during the day as well. When viewed from different angles, one sees different things. When approaching the work, the viewer becomes part of the work. This choice of material provides an excellent means of expression for an outdoor installation. The integration of the work into the environment proved to be very effective as it echoed its surroundings. The Festival of Lights also has a large audience during the day. My philosophy is that no matter what kind of cultural and tourism work, it should also be a work during the day. Nowadays, many works are just simple structures during the daytime, and their value is only revealed when they are lit up at night. I resent such works because they become environmental pollution and destruction during the day. I think a work should be visible during the day as well. Your work may only be displayed for an hour at night, but it destroys the environment for a long time during the day. I created this work to attract viewers during the daytime as well. When taking pictures, everyone can see a different view and will have different feelings from different angles. So, I have carefully considered the choice of materials and the composition is innovative." (Liang, personal communication, November 30, 2023)

4.3.2.5 Social and Historical

When exploring the political and historical present of the work's images, young students and young artists are mostly concerned with the values of the work, while the artist's ideas go deeper:

"Politics and art are inseparable. Politics is an ideology, and art creation is also based on ideology. We should look critically at society and human nature in our

creations, and this critique is not only of the external world but also of the inner world. The dramatists of Eastern Europe mostly allude to political or social criticism in their works. Artists should not avoid these themes because art and society are closely connected. In their creations, artists should look for appropriate ways of expression because art can lead people to a deeper understanding of society. We, as artists, cannot avoid touching the various elements of society because they form part of our lives." (Ji, personal communication, November 29, 2023)

"If I had the chance, I would create a very interesting work that could spread very strongly, similar to the impact of literature. At that time people were immersed in suffering and my work would be like a wake-up call, like a milestone. I want to carve out the pain of that time (during the epidemic), like carving each day in stone of emotions." (Liang, personal communication, November 30, 2023)

From the content of the interviews above, it can be obtained that the following points can be considered when choosing materials:

Thematic expression and psychological feeling: In choosing materials, creators consider how the material affects the thematic expression of the work and the psychological feeling of the audience. For example, in *Handshake*, wooden hands in the style of puppets were chosen over translucent resin to avoid creating a sense of horror.

Visual Performance: Visual effect is an important consideration in the choice of material. For example, in *Cantonese Light*, mirrored stainless steel was chosen to provide a changing visual experience at different angles as well as to better blend in with the surrounding environment.

Light and shadow effects: Light and shadow effects play an important part in the choice of materials, especially in the art of light installations. For example, in "*Handshake*" a warm atmosphere is created by lighting the outside of a wooden hand.

Cost Budget: Cost is a practical and critical consideration. In *Impressions of Guangzhou*, the glass material originally planned to be used was replaced with coloured acrylic due to cost issues, which affected the final artistic effect.

Temporal and spatial factors: Considering the performance of the work in different environments at different times of the day (day and night). The choice of materials in Cantonese Light takes into account the effect of the work under different lighting conditions during the day and night, ensuring that the work can be displayed regardless of the time of day.

The inextricability of art and politics: Qiao Ji points out that politics and art are inextricably linked, emphasising the deep connection between politics as an ideology and the creation of art. This suggests that artists often take social and political contexts into account when creating art and may even use social elements as a source of inspiration for their creations and argues that artists should not avoid political or social themes, as art is closely linked to society. In their creations, artists should look for appropriate ways of expression to lead the audience to a deeper understanding of social phenomena.

4.3.3 Role and Impact of the Audience

4.3.3.1 Audience Interpretation Methods

There are three ways in which the audience understands a work: image, sound and text. Creators should also think about the audience's interpretation when designing their work.

"Every viewer has a different subjective understanding of the work. The most direct/method is to place exhibition boards because they will choose to read the text introduction next to the work if they can't understand it." (Mo, personal communication, November 27, 2023)

"Textual descriptions are important, especially for out-of-town visitors who are not familiar with Lingnan culture. We have design descriptions that can help them understand the work more deeply." (You, personal communication, November 28, 2023)

"In fact, the textual element is just a primer, like a throwback. I hope to trigger empathy and imagination through simple text descriptions, rather than framing a structure. For example, instead of directly giving a figurative shape to limit the imagination, I let the audience make their associations, which could be a cultural flavour,

a spatial carrier, and so on. Each person is different, what you want to see, that is what you see. Because everyone's outlook on life, and values are different, engaged in different industries, the analysis of the material is also different. There is no need to have a concrete and rigid interpretation. For example, Mr Ji's work of Fengmian Lin, although many people may not be able to understand it, thinking that it is just a big tin rolled up into a circle, but in fact it is an infinite past life, fighting for art, such an artist's work is to sing praises, call out, shout, with a sense of mystery and tension. Many ordinary people may not be able to understand such works, but it doesn't matter. The issue of audience that you mentioned before is not only for the common people, but also for professionals and peer audiences. They have the feeling and knowledge, so they will naturally find such works very great" (Zhang, personal communication, November 30, 2023)

"Words and pictures are two complementary ways of reading. They both play an important role in the creative process. Just like when reading a novel or play, the feel of the space is important. Every time I work in the same theatre, I revisit the space to make sure that my work fits the space and maximises the presentation of the artwork. The same goes for lighting, different types of lighting produce different effects in the hands of different creators. Their use depends on the creator's understanding and application of the characteristics of these tools. The evocative power of your work will vary when placed in different spaces." (Ji, personal communication, November 29, 2023)

Effectively designing for audience understanding during the creative process includes providing clear text, considering the cultural background of the audience, and making full use of light as a guide. By doing so, artists can create an experience that is both inspiring and inclusive, enabling viewers from different backgrounds to appreciate and understand works of art in their own way. In addition, from the viewer's perspective, viewers themselves should learn more about cross-border cultures and improve their own aesthetics. "Many people can't understand what the exhibition displays mainly because they don't understand cross-border culture and

aesthetics. If you don't do research on aesthetic psychology and philosophy of art, it's hard to understand the works." (Zhao, personal communication, December 2, 2023)

4.3.3.2 Audience Behavior and Feedback

"In designing the audience's behavior within the work, I take an approach based on preconceptions and analyses of the audience's responses. This includes careful consideration of the paths they take into and out of the space of the work, as well as their visual perspective when they first encounter the work. I aim to create an environment in which the viewer can naturally interact with the work, whilst ensuring that their experience is coherent and meaningful. In order to gain a deeper understanding of the viewer's experience, I will envision myself as someone who is seeing the work for the first time and trying to interpret and feel the work from their perspective. This approach not only helps me to anticipate and understand the audience's possible reactions but also pushes me to look at my work from different perspectives. In addition, I pay particular attention to feedback from viewers of different ages and backgrounds. By inviting friends and family to experience the work and collecting their opinions, I can gain valuable first-hand data that is essential for adjusting and optimizing the design. Their feedback provides me with new perspectives and insights, and sometimes even inspires me to make creative adjustments. Audience input and feedback is an important reference point in my creative process. Especially when creating images or large-scale works, I pay more attention to their reactions. If their feedback indicates that the work is accessible and can be widely accepted, I will seriously consider and incorporate these suggestions. My goal is to create artworks that both resonate with the audience and express deep thoughts and emotions." (Mo, personal communication, November 27, 2023) City Symphony - Fireworks of the Earth: "It turns out that there is also an interactive session with the audience, where the audience can act like a conductor, waving their hands to direct the lighting and music interactions, and letting the audience interpret and decipher the scenario of the Vanguard or the fireworks of the earth in their minds. Let people feel that in the ten thousand lights, there is always a light is waiting for me to go home."

The following two points can be gleaned from the above interviews:

Presuppositional analysis of audience behavior

In the process of creating art, creators often employ an approach based on the preconception and in-depth analysis of audience behavior. This approach encompasses a careful consideration of the audience's path into the exhibition space, their perspective when they first view the work, and how they interact with it. The purpose of this presuppositional analysis is to construct a simulated environment and to consider how the viewer naturally engages with the work, while ensuring that their experience meets expectations. The artist needs to focus not only on the artistic expression of the work itself, but also on the audience's experience and their overall perception of the work.

The role of audience feedback:

Feedback from audiences of different ages and backgrounds plays a crucial role in the design and development of artworks. Creators value this feedback and use it as a key basis for adjusting and optimizing the design of the work. By collecting and analyzing audience feedback, creators are able to gain diverse perspectives on the work, which are essential for adapting the work to better suit the expectations and understanding of the audience. Audience feedback plays a decisive role in determining the final form and expression of the work, thus ensuring that the work strikes a balance between artistic expression and audience acceptance.

4.3.4 Elements of Excellence

When it comes to the characteristics that should be included in a good Lighting installation artwork of regional culture, each interviewee gave his or her own opinion.

"I prefer interactive works that reflect regional cultural characteristics. I majored in environmental arts, so the works should reflect the representative changes and conform to the local characteristics. So good works should incorporate regional cultural elements. For example, some specific elements of Guangzhou, or reflecting local cultural practices. At the same time, the work should be able to integrate into the

local surroundings and become a part of the city night, rather than exist in isolation. There is also the consideration of public acceptance. A good work should not only attract the audience, but also enhance their aesthetic and cultural understanding. Another important thing is audience participation. A good artwork should allow the audience to be part of it, or even become co-creators. Some works are as simple as a wall where each person is asked to write a sentence and put-up sticky notes to form a memorial wall. This kind of participation and the final display is what I like." (Mo, personal communication, November 27, 2023)

"I believe that great artwork should combine a number of aspects. Many works that are recognized as masterpieces, such as sound effects and interactive works, are successful because they blend visual beauty, spatial integration, playfulness, and a deep cultural presentation. These works are not only visually appealing, but also resonate with the audience in multiple dimensions, provoking deeper thoughts and experiences. When dealing with the relationship between the audience's needs and the artist's self-expression, my tendency is to focus on the visual expression of the work first. Coming from a background of fine art, I deeply understand that a work needs to be visually appealing to the audience first, which is the prerequisite for the audience to be willing to deeply understand and read the design instructions. If a work fails to attract the audience visually, then it will be difficult for the deeper thoughts and emotions it conveys to reach the audience's heart. Therefore, during the creative process, I will focus on how to attract the audience through visual presentation, while not forgetting to incorporate the thoughts and ideas I want to express in the work." (You, personal communication, November 28, 2023)

"Firstly, the work should be socially identifiable and accepted by the present. Although pure artists like Van Gogh may not have been accepted at the time, our installation or artwork must be relevant to the current times. It should echo the present, present an understanding of current issues, and pose questions to society. At the same time, the artist should also provide a reasonable solution to the problem, which is the artist's duty." (Zhang, personal communication, November 30, 2023)

"The beauty of light work lies in its intangibility and colourfulness. The best works of art are those that provoke thought. In oriental aesthetics, we say that 'the best is where it is not painted', i.e., where there is white space to think. Similarly, dark spaces allow the art of lighting to reveal its charms. The types of light include backlight, side light, face light, top light, corner light, etc. These different angles of light affect the psychological response of people. Although light is invisible, its impact is particularly strong in the dark, as remarkable as drawing lines on white paper. I don't like colourful effects but tend to form a kind of advanced spiritual light, which is not just a function of light, but an intuitive feeling that touches the heart. Good work touches the soul as well as stimulates thought." (Ji, personal communication, November 29, 2023)

"No matter what kind of cultural and tourism works, it should also be a work during the day. Nowadays, many works are just simple structures during the day, and their value is only revealed when they are lit up at night. I resent such works because they become pollution and damage to the environment during the day. I think a work should be able to show its charm during the daytime as well. I believe that works should first and foremost be able to express emotions and resonate. Regardless of the field of work, the primary goal is to resonate. I posted a lot of content on Shakeology during the epidemic to express my thoughts. The work should be clear and resonate with people. This is very important. Public art can't be too personalized, or people won't understand it. Art doesn't have to be understood by everyone, but it should at least provoke thought. Picasso's work is an example. "As president of the Research Council, how do I want to give back to the businesses that support me? In generating these ideas, I want to build a platform for them to shine in my work. For example, when you savor coffee, you realize that the cup and the coffee are one in the same; they are more than just products. So, through my work, I want to show the artistic sense of these products. I incorporate elements such as mechanics so that it is not just a matter of a few lamps, but a piece of work. People feel differently about the light, remember the name "Guangdong's Light", and start to explore who owns the light. This is my impact on local industrial products." This work does have this meaning. As president, I have a lot of communication with

enterprises. Guangdong is a big province for performing arts equipment, and they express their technology through different means. Showing their products through this public platform is better than showing them in their own small space. You can't see these displays if you don't go to their place. (Liang, personal communication, November 30, 2023)

"In the many works that I have created, such as the art festival in Lungri, the light art festival, and the new media art festival, I have always brought the products of the companies to the community in the form of artworks. This is something they can't do on their own, they can only sell lights. My works have created many hidden customers for them. As for how many benefits my works have brought them, I am not sure, and even they may have forgotten. But they are all due to my works. Just like the products used in the Olympic Games abroad, I am just pulling the strings in the middle. They may thank me in a few years' time because my work has brought value and benefits to their enterprises, not just today or tomorrow, but in the long run. My "Guangdong's Light" work is not just something that is happening now, it is still fermenting. No one mentioned these things before I made the work, but now there are more topics and people are talking about my "Guangdong's Light". (Liang, personal communication, November 30, 2023)

"Regional installations should incorporate local cultural characteristics, such as architectural characteristics. When incorporating, they should not be directly copied, but elements should be extracted for secondary creation and transformation. Impressions of Guangzhou, for example, showcases elements unique to Guangzhou. The Manchurian window is a unique expression of Guangzhou, with features such as the triangular C-shaped window. These elements are derived from the stained glass of Western churches and were used by wealthy people to decorate their windows in irregular patterns. This style is also a characteristic of Guangzhou culture." (Zhao, personal communication, December 2, 2023)

The views of the interviewees can be summarized as follows:

Table 9 The Views of Interviewees

Respondent	Characteristics that an excellent Lighting installation artwork should have
Mo Yi Yun	Interactive, geo-cultural, environmental integration, social and participatory.
Yi You	Visual aesthetics, spatial integration, interest, and cultural identity.
Zhang Zhanting	Zeitgeist, social
Qiao Ji	Stir up emotions
Xiqing Liang	Day and night continuity, emotional, universal, geo-cultural, touching the heart
Hai Zhao	Geo-cultural

Visual aesthetics and integration into the environment: the work should have a strong visual appeal and be able to make a deep impression on the viewer. At the same time, the work should be integrated into its spatial environment and the external effect of the work during the day should be taken into account to create an artistic experience that is in harmony with the environment.

Interactivity and Participation: Good Lighting installation artworks should encourage audience interaction and participation. This participation not only adds interest to the work but also allows the audience to become part of the work, deepening their experience and understanding.

(b) Regional culture: The work should incorporate and demonstrate the identity of the regional culture, for example using symbols, motifs, or stories specific to the region. This allows the work to express universality and at the same time to have a unique regional cultural identity. Emotional and heartfelt: the work should be emotional and heartfelt.

Social and contemporary: Lighting installation art should echo the present, presenting an understanding of current social issues or raising questions. This contemporaneity and sociability make the work not only an artistic expression, but also a commentary and reflection on contemporary society.

4.3.5 Challenges and Solutions

The Handshake "First of all, it's financial, the budget is not high. One of our main problems was finding the right factory because we needed specific technical services. Finding a factory to make it was a challenge because our installation was relatively small. They only gave us a space of 6 x 2 meters. Our piece only took up a small portion of the front of the green space. I think there were some problems with the planning, not arranging the space properly." (Mo, personal communication, November 27, 2023)

Impressions of Guangzhou "The biggest challenge is to translate the Lingnan cultural themes into the styles we see and to leave the audience with a deep impression of the work." (You, personal communication, November 28, 2023)

Symphony of the City - Fire on Earth "Probably the biggest challenge of this installation was to achieve an acceptable result at a reasonable cost. Approximately 1,000 boxes needed to be prepared and installed, and all the lights needed to be interconnected. This was a tedious manual task, done with limited time and low-cost materials. For me (lighting and sound animation), the challenge was to produce coherent content while highlighting the sculptures as much as possible, using materials with limited possibilities." (Liang, personal communication, November 30, 2023)

"Funding is an issue as the work requires costly materials such as steel structures. We did not make any money from this work; our goal was to make the work stand up. It is very complicated to make and has taken a lot of effort and thought. It is still being commissioned and has many shortcomings. This work is expected to be exhibited at the Guangzhou Lighting and Sound Show in March next year. We will continue to further our studies research and development. The biggest challenge is that this is the first time to create such a work. I have a lot of specific requirements, such as

the synchronized rotation of the light heads and the matching of the music. So far, the work has not fully met my requirements. Another issue is safety, especially because the work is located in the windy part of the river and cannot be screwed on the ground. In addition, the creation process must ensure the integrity of the piece without any negligence. I think the hardest part was coming up with the idea for the creation and how to realize it in practice. Although my work has achieved about 80 per cent of the desired effect, there is still room for improvement." (Liang, personal communication, November 30, 2023)

Based on the above interviews, the difficulties and challenges encountered by the creators in the creative process can be summarized in the following five points:

Funding constraints: One of the main challenges faced by creators is budgetary and funding constraints. Funding issues, such as those mentioned in *Handshake* and *Cantonese Light*, resulted in creators being limited in their choice of materials, the scale of their work and the extent to which it could be realized.

Technical difficulties: In "*Handshake*", it was a challenge to find factories that could provide specific technical services. The technical complexity of the production process, in particular the technology of synchronized rotation of lights and music, was mentioned in *Cantonese Light*.

Ambient space: As mentioned in *Handshake*, the work occupies only a small portion of the space in front of the green space, reflecting the challenge of space allocation and layout in displaying the work. The challenge of safety and environmental adaptability of the work is mentioned in *Cantonese Light*, especially as the work is located in a windy riverside position, which requires consideration of environmental factors and the robustness of the work.

Connotative expression: The main challenge in *Impressions of Guangzhou* is to translate the cultural theme into a visual style that leaves a lasting impression on the viewer's mind. This exemplifies the challenges faced by creators in materializing themes and ideas into visual works.

Influences on the creative process:

When discussing the influences on the creative process, the creators all agreed that uncertainties during construction often affect the outcome of the work. Yiyun Mo mentions that "the only problem was the on-site installation and budgetary constraints that caused the final work to differ from what was expected." Yi You agrees: "There were a lot of deviations. We were mainly involved in the preliminary work and were responsible for the programme in September and October, and then submitted it to the organisers in November and left it to their company. We weren't involved in checking it halfway through, so some of the selections didn't match expectations." Shanting Zhang agrees: "The initial factory production did not meet expectations, as there was no horizontal or vertical support after the frames and steel tubes were set in shape, resulting in an image that appeared rigid."

It can be seen that the main influence on the process of creating the work is then the deviation from construction and expectations.

The following are responses from the interviews to the difficulties and challenges associated with the creative process, "There are two main aspects to the students' problems. Firstly, their ideas are usually good and creative, which is worthy of recognition. However, when referring to foreign works, they should not limit themselves to imitation so that their works do not become similar. Our works, whether individual or team-based, should be independent, unlike paintings which simply imitate the masters. Our innovation lies in combining the environment to make the works move, in contrast to the common static coloured line works. Secondly, for students, the grounded implement ability of the work is also crucial. They need to observe and analyze other people's work and put their imagination into practice. Theoretical knowledge is important, but practice is more grounded to the actual needs of the work." (Zhang, personal communication, November 30, 2023)

"You need to learn to adapt when creating and find ways to express yourself in a limited space. You can't give up just because of lack of funding or safety concerns. In my factory, I do a lot of experiments, such as soaking materials in water and sunlight. I did a lot of tests when choosing materials and construction techniques. Because of the

time constraints, we need to finish the work quickly, but at the same time, we need to ensure the quality." (Liang, personal communication, November 30, 2023)

"Young people do face this problem. My advice is to try not to rely too much on material conditions when creating, and to focus first on how your ideas unfold. In communicating with investors, you can gradually learn about investment, but don't let financial limitations become an obstacle to creation. Art and money are not directly proportional, and creators should maintain individuality. Financial limitations can also inspire simplicity and depth of creative thought and exercise self-will. I have done theatre on a shoestring budget and the results were still outstanding. Artists should stay true to their individuality and not be overly concerned with the opinions of leaders or audiences.

Some people study the psychology of the audience, but I think artists should express their subjective ideas first, even if they may be hindered by some obstacles. It is very important to stick to your ideas or you may lose your uniqueness. For other people's opinions, understand that they may not have studied your work in depth, while you have spent a lot of time exploring and researching. Stick to your path and don't be afraid to question it, this is especially important for young artists. These questionings are opportunities for you to grow." (Ji, personal communication, November 29, 2023)

Innovation and Independence: Shanting Zhang pointed out that students should not limit themselves to imitation when referring to foreign works but should endeavor to innovate and maintain the independence of their works. He emphasized the importance of combining the environment to make the work move, in contrast to common static works, an approach that highlights more individuality and innovation in creation.

Implement ability: Shanting Zhang also mentioned the implement ability of the work, stressing that students should observe and analyze other people's work and put their imagination into practice. He advocated finding a balance between theoretical knowledge and practice to ensure that the work meets practical needs.

Adaptation and Experimentation: Xiqing Liang talked about the importance of adapting to constraints, such as finding ways to express oneself within a limited space and budget. She emphasized the need to experiment with material choices and construction techniques, as well as the importance of ensuring the quality of the work under time constraints.

Creating beyond material conditions: Qiao Ji advises young creators not to rely too much on material conditions, but to focus on how to present their ideas. He advocates that artists should maintain their individuality, arguing that financial constraints can inspire more minimalist and in-depth creative thinking.

Insisting on personal expression and originality: Qiao Ji emphasises that artists should first and foremost express their own subjective ideas, even if they may be hindered. He believes that sticking to one's own ideas is crucial to maintaining the uniqueness of one's work and encourages young artists to remain confident in the face of doubt.

To sum up, in the face of difficulties and challenges in creation, creators should uphold the spirit of innovation and maintain the independence and originality of their works, while at the same time seeking feasibility in practice, being brave enough to experiment and adapt to constraints, and focusing on personal expression without being overly constrained by material conditions. In these ways, creators can overcome challenges and achieve success in artistic creation.

This part mainly analyses the design method of Lighting installation art rich in regional culture, and the analysis results are as follows:

Creators generally work in teams with a division of labor model, where each member of the team has a job, they are responsible for according to their abilities.

The theme setting is inspired by four areas: society and customs, history and beliefs, nature and geography, and people and stories.

The formal setting of a work is generally influenced by three factors: cost factors, social power, and environmental factors.

Visual symbols and elements are formed in two main ways: firstly, the figurative use of inspirational sources, and secondly, the abstract expression of elemental symbols.

The process of work creation contains a total of seven steps: theme determination, material selection, visual design, modelling, testing, installation, and verification. The steps are generally seven steps, and the chronological order of material selection will be adjusted according to the form of the work.

The choice of material for the work generally considers six factors: theme expression, audience psychology, visual performance, light and shadow effects, cost budget, and time and space constraints.

Factors for the creator to consider also include: the social and historical nature of the work, the way the audience interprets the work, the audience's behavior and feedback.

Good works will generally contain the following characteristics: visual aesthetics, environmental integration, interactivity and participation, regional culture, and social zeitgeist.

Challenges for creators include cost budgets, technical difficulties, time and space constraints, and visceral expression.

CHAPTER 5

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

The main purpose of this research is to study the regional cultural characteristics of Lighting installation art and the design method of Lighting installation art rich in regional cultural characteristics. The study took the Guangzhou International Lighting Festival as the scope of the research and did a field survey on the Guangzhou International Lighting Festival 2023. The research methodology also included case analyses of nine Lighting installation artworks and in-depth interviews with 12 audiences, 6 creators and 1 planner. The resulting summary, discussion and recommendations are presented below:

5.1 Conclusion

5.1.1 Regional Cultural Characteristics of Lighting Installation Art

When viewing Lighting installation art works, generally through two ways : visual experience and immersion. The visual experience is dependent on the figurative representation of visual symbols and the abstract expression of cultural elements, which can be directly derived from intuitive geographical elements to convey the specific ideas and emotions conveyed by the scene; while the abstract expression of cultural elements relies on non-figurative means such as colours, shapes, and lines extracted from the local culture to form the visual effect. The immersion of the work, from the perspective of sensory experience is aesthetically coordinated and integrated with the geographical and cultural environment in which it is located, combined with visual and auditory elements, in which the audience can be enabled to fully immerse themselves in the sensory world of regional culture and art through images, sound, and even interactive technology.

Therefore, in order to show the regional cultural characteristics of Lighting installation art, the following points should be paid attention to when creating works: the figurative expression of visual symbols, the abstract expression of cultural elements, the perfect integration of the regional environment as well as the immersive experience of

the combination of audio and visual. In order to leave more impression on the audience, we can choose more familiar and novel elements and consider the possibility of interaction between the work and the audience in the creation of the work.

5.1.2 The Design Method of Lighting Installation Art Based on Regional Culture.

Through in-depth interviews with young students, young artists, professional art teams, artists and curators, the exploration of design methods encompasses the entire process of designing the work.

In the interviews with all the creators, it was found that all the works were created in a team, which is different from the traditional art of one person's creation, as each member of the team has his/her own responsibility according to his/her ability. The overall process of creation can be divided into two processes, one is the thinking process, and the other is the production process. In the overall creation, the artist pays more attention to the thinking process of the former but believes that the production process must have a standardized process and strict requirements, which is very important for the final presentation of the work.

In the creative thinking process, there are seven steps: theme setting, form determination, sketching, simulation modelling, material selection, testing, fabrication and installation, and verification, where the chronological order of material selection is adjusted according to the form of the work. Firstly, the theme of the work is inspired by four areas: society and customs, history and beliefs, nature and geography, and people and stories. Secondly the form of the work is generally influenced by three aspects: cost factors, social power, and environmental factors. The visual symbols and elements of the work are then formed through the figurative use of inspirational sources or the abstract interpretation of elemental symbols. Six factors are generally considered when choosing materials to produce the work: theme expression, audience psychology, visual performance, light and shadow effects, cost budget, and time and space constraints.

The social and historical nature of the work, the way it is interpreted by the viewer, the viewer's behavior and feedback are other factors that the creator needs to take into account in his/her thinking process. The social nature of the work determines

the value of the work, the artist should not avoid socio-political and social events in the creation of the work and the work can be used as a critical way to explore and reflect social phenomena and human nature. Then the historicity of the work expresses whether the work can record historical moments and become a carrier of emotions in historical memory. Secondly, the way the audience interprets the work also needs to be considered. In addition to the cultural background of the audience, the use of sound and light as well as a clear interpretation of the text also need to be taken into account. In addition, the behavior of the audience should also be considered in the creation of the work, and the audience's viewing perspective and course of action can be considered and direct feedback from the audience can be solicited to calibrate the intention of the work during the design process.

Another thing that creators need to pay attention to during the production process is to ensure that the construction will be carried out as expected, to avoid errors in construction and expectations, which can lead to the work deviating from expectations and affecting the results.

This study also explores the difficult challenges in the creation of works, mainly cost budget, technical difficulties, temporal and spatial limitations, and connotative expressions. The artists in the interviews also advised on customer service challenges and difficulties: they believed that creators should uphold the spirit of innovation, maintain the independence and originality of their works, and at the same time seek feasibility in practice, be brave enough to experiment and adapt to constraints, and focus on personal expression without being overly constrained by material conditions. In these ways, creators can overcome challenges and achieve success in their artistic endeavours.

Finally, the study explores the characteristics of good work: visual aesthetics, environmental integration, interactivity and participation, regional culture, and social zeitgeist, to provide guidelines for later creations.

In conclusion, this research not only provides artists with a structured creative framework but also serves as a reference for the teaching and practice of

lighting installation art. Indirectly, it promotes the dissemination of regional culture and the development of the local economy, deepening the dialogue and exchange of art within social and historical contexts. On the other hand, lighting festivals can greatly promote the development of this kind of art and provide people with a stage for artistic and cultural exchanges so that creators have the opportunity to show regional culture through modern art. Obviously, festivals like the Guangzhou International Lighting Festival, rich in regional culture, are not only a visual feast but also a significant driver of the local economy and tourism. These festivals, through their creative amalgamation of audio and visual elements, offer a new mode of audience interaction, enhancing the possibilities for engagement between the artworks and viewers. The successful staging of a lighting festival can substantially elevate a city's profile, attracting more tourists and cultural tourism enthusiasts, thereby directly boosting local economic development. Moreover, such events deepen the understanding and appreciation of local culture among people, strengthen the dissemination and impact of regional culture, and further promote the protection and preservation of local cultural heritage.

5.2 Discussion

The researcher discussed the results of the study based on the two research objectives and the results of the discussion are as follows:

5.2.1 Discussion Results of the Research on Regional Cultural Characteristics in Lighting Installation Art

The researcher explored the regional cultural characteristics of Lighting installation art through case studies and interview analyses and obtained the following points to focus on when creating works: the figurative representation of visual symbols, the abstract expression of cultural elements, the perfect integration of regional environments, as well as the immersive experience of audio-visual combination.

In Lighting installation artworks, whether it is the figurative expression of visual symbols or the abstract expression of cultural elements, this is a diversified way of visual content output under modern digital technology. Figurative expression is the realization of things that have existed, and the audience can intuitively feel the cultural

affiliation of the work from the visual images, just like the audience knows that the brief description of the work is related to the culture of Guangzhou when they see the Guangzhou Tower in the work. This kind of figurative expression will make the audience's mind produce associations with the related content, so that they can cause thinking through visual stimulation. For example, when "Raining Banana" was exhibited in Lyon in 2018, the kapok constituted figuratively with light installations made the whole venue show Asian and Lingnan cultures, and the audience could experience the oriental culture from the figurative works. This kind of visual image figurative expression is not only applicable in Lighting installation art works, but it has also long been used in posters and other visual types of art works, according to the original meaning of the figurative image to express the author's design ideas. This view is basically in line with Leng Rin's view that cultural differences are the essence of the creation of diversity in the visual arts (Leng, 2022).

The abstract expression of cultural elements is also one of the common ways used by artists. According to Shiting's viewpoints, most of the works of modern lighting festivals are deeply influenced by modern art, and the works are often styled with abstract dots, lines and surfaces to complete the expression of the theme content (Shiting, 2021). In Lighting installation art, this abstract expression constitutes a richer visual level, because the characteristic of light and the abstract expression of cultural elements make the space of the work more layered, and the work is more meaningful. The work "Lotus in Bloom" is an abstract expression of cultural elements, which constitutes a form of work that allows the audience to not only feel the visual impact given by colourful light, but also show China's cultural confidence from this abstract expression.

The integration of regional environment is one of the pursuits of Lighting installation art works. From the interviews, this integration of environment is the audience's expectation of future works and the creator's judgement of excellent works. The formation of regional culture is a unique culture that is the result of the interaction between environment and culture, which has a certain stability after a long period of

accumulation, so it will leave a deep impression on people. Due to this stability, works that perfectly blend with the regional environment can become part of the environmental space and the identity of the place. Dutch designer Daan Roosegaarde's work 'Starry Sky', a cycle track, uses solar-powered LEDs and cobblestones to form a kilometer-long cycle track, which is recharged during the day with solar energy and then lit up at night. The work blends naturally into the environment, echoing the Dutch artist Van Gogh's "Starry Night". Shangguan Zixuan believes that no matter how the Lighting installation is presented, it should be properly integrated with the surrounding environment and should not look out of place with the surrounding environment, the installation and the public environment should be in the same visual whole. When designing, it is necessary to look for inspiration from the surrounding natural ecology and utilize it in the design, in order to make the Lighting installation symbiotic with the ecology.

The combination of audio-visual immersion will leave a deeper impression on the audience. The 360-degree sensory experience constructed by this kind of work will make the audience isolated from the real space outside, as if they are in the world constructed by the creator. This immersion gives the creator more power to influence the viewer's sensory perception and thus the viewer's thoughts (Leng, 2022). For example, in the work Guangzhou Impression, the audience walks in the middle of the installation full of visual elements of regional culture and listens to the traditional music of the Guangzhou region. In this immersive space created by the creators with cultural elements, what the audience sees and hears are all well-designed by the creators, and it is hard for the audience to not be affected by the cultural flavour of the audience's thoughts. What can be obtained is that the space created by this audio-visual combination is the space constructed by culture, and this is the place where regional culture is displayed and infected the most.

5.2.2 Results of the Discussion on the Design Methodology of Lighting Installation Art rich in Regional Culture

The discussion of the design methodology will be based on the case of the artwork around the whole process.

Lighting installation art is an interdisciplinary contemporary art, across the arts, science, and engineering, this interdisciplinary means that the way of creating Lighting installation art must be different from traditional art such as oil painting and other processes and methods. This interdisciplinary nature also means that various types of talents are needed to work together as a team, and it is very difficult for a person to complete high-quality works alone. Currently, Teamlab, a renowned team in the creation of Lighting installation art, also includes talents from various fields, which allows artists to combine technological means to complete such a visually immersive creation as the Boundless Art Museum (Qian, 2020).

In the discussion of the creative process, the researcher compares the methods of creating different types of Lighting installation art. In her paper "Research on the application of traditional pattern in image installation art design", Yu-Ting Wang details the creative thinking process of her work, i.e., the five steps of the work: the source of inspiration, the decision of the form, the choice of the pattern, the creation of the image, and the design of the installation. Because the work is a video installation art, it does not tell too much about the process of material selection and production. In terms of the overall flow of thought, pattern selection and image creation are all part of the vision. And this installation design, shown in the article, is the drawing of the computer model and 3D printing is the process of modelling and production. So, the design process of the whole installation is in line with the seven steps of Lighting installation art design obtained in this study.

In his paper Light Interactive Art Research, Sun Jin argues that the source of inspiration for works based on the theme of urban culture should originate from urban culture, which is a cultural pattern with urban characteristics created by the citizens in the course of their long-term life, and is the sum of urban living environment, lifestyle and living customs (Jin, 2020). This coincides with the social observations and customs that the researcher summarises as the four sources of inspiration for thematic creation. Shangguan Zixuan, in his paper "Research on Lighting installation Design in Public Environment", argues that all perceptions of beauty are born from the forms of natural

things around us, whether it is the sun, the moon, the stars, the mountains, the rivers, the valleys, they all have their own forms and sights, and they provide endless inspirations for artists. They provide artists with endless inspiration. History and beliefs, characters and stories are all important parts of regional cultures and can be a source of inspiration for such works (Zixuan, 2020).

The three factors that influence form setting are: cost factor, social rights, and environmental factors. The cost factor is the part that has the greatest influence on the creation of a work. The creation cost of Lighting installation art is much higher than that of traditional art, and it involves the use of technology, which has become the consensus of every creator of Lighting installation art. The power factor is more from the organizers and regulators because of the security considerations, on the 2023 Guangzhou International Lighting Festival, in the case of limiting the flow of tens of thousands of tourists into the exhibition area every day, the site of the order and security is also a major test. As for environmental factors, this aspect includes the size of the site, the shape of the site, the light environment of the site, etc., the type of site (indoor and outdoor), for example, indoor venues will be more likely to create immersive works, because it is less disturbed.

The visual element of the work is the figurative use of the source of inspiration or the abstract performance of the elemental symbols. Shangguan Zixuan believes that the use of elements in lighting installation design can come from four sources: the use of natural forms, the use of natural colours, the use of natural mechanisms and the use of natural phenomena (Zixuan, 2020).

The six factors of theme expression, audience psychology, visual performance, light and shadow effects, cost budget, and time and space constraints are important considerations when choosing materials for a work. Theme expression is the first factor to be considered in the selection of works, for example, if a work of environmental protection is created, then the choice of materials must be green, environmentally friendly, or even discarded. Light and shadow effect and material texture are important factors affecting the audience's psychological feelings, and the

brightness and colour of light and shadow are one of the ways to express the creator's emotions. Secondly, different materials reflect light differently. Obviously, there is a clear difference between the light reflected by tin foil and black cardboard. Time constraints and cost factors do not only affect the expression of the creator's work, but also the choice of materials. When choosing materials, cost budget is an unavoidable consideration, and materials react differently to light at different times in different environments. Therefore, when choosing materials for the artwork, Xiqing Liang believes that not only do we need to consider the choice of materials, but we also need to repeatedly test the stability of the materials to ensure that they are effective during the daytime, and that they can be corrosion-resistant and waterproof under extreme conditions. (Liang, personal communication, November 30, 2023)

Through Michel's iconography, the researcher focuses on the social and historical aspects of the work and incorporates them into the consideration of the work. Artists' works are inextricably linked to socio-political and ideological, and the works are weapons used by the artist to criticize society, just as writers often use their literary creations to criticize social phenomena. This is in line with the views of scholars such as Haiyan Gong, who point out in their article that criticality is an important feature of Lighting installation art (Han & Gong, 2022). Because of the guiding role of social values, this sociality can determine the existence or non-existence of the work, e.g. anti-social works must be excluded. Historicity exists based on sociality; it is an emotional record of social events. For example, Rafael Lozano-Hemmer's Solar Equation is a realistic simulation of the surface of the sun, containing the turbulence and spots visible on the surface of the sun. The presentation is based on fluid dynamics equations and the latest images from NASA's Solar Dynamics Observatory (SDO) and Solar Heliosphere Observatory (SOHO). The entire work documents new human observations of the Sun at this moment in time, allowing the viewer to record the historic breakthroughs in astronomical observational science during this time.

When creating a work, the creator will also consider how the viewer interprets the work, because, for artworks, there are differences in the viewer's

understanding of the work due to differences in viewing angles, personal consciousness, etc. In traditional aesthetics, the viewer's understanding of the work is not always the same. In traditional aesthetics, the viewer receives the information in a static way and transforms it into his/her own understanding, but in participatory installations, the viewer participates in the work through action, changing the form of the work and at the same time taking the initiative to give the work a new understanding and interpretation. As a result, the sending of interpretations often presents an unpredictable state, in which the former participant and the latter participant may come to different conclusions about the interpretation of the work due to the differences in the manner and degree of participation and personal status (such as life experience, education level, and mode of understanding, etc.) (Giordano & Ong, 2017). Therefore, the audience's behaviour is also very important for the creator and relates to the audience's understanding and perception of the work. In addition, the audience's feedback is an expression of the audience's understanding of the work, the creator in the creation and after the completion of the creation to understand the audience's opinions and feedback is necessary, it can directly reflect the meaning of the work in the eyes of the audience and the creator wants to express the consistency of the meaning of the work, can be used to check the work of the purpose of the work is achieved.

Qiao Ji believes that the creative process of the work production process is to follow strict norms, even if the thinking is pie in the sky. (Ji, personal communication, November 29, 2023). This strictness is to ensure that the construction can be carried out as expected to avoid compromising the result. This is due to the fact that creating a Lighting installation is a complex process that contains many interdisciplinary elements, which leads to the fact that the work may go through many processes in the production, which can only be completed through the joint efforts of multiple participants, which requires that every step of the production should be precise and error-free.

As an interdisciplinary art form, the challenges for creators of light installations are also multifaceted. Firstly, as mentioned earlier, Lighting installation is a combination of art and technology, and the word technology means that the cost of its

creation is much higher than that of traditional art, so for young students or young artists, this cost factor is unavoidable. This interdisciplinarity also brings technical difficulties, often artists do not have too much to learn like computer science in the creation of such unavoidable technology, then this technical challenge becomes difficult for artists to rely on their own to solve the problem. Time and space constraints can also be a challenge for creators, as a good piece of work needs to be integrated with space and time, and this integration requires creators to have a higher level of artistic quality. Finally, the question surrounding every creator is whether the audience can understand the creator's intention. How to clearly express the creator's own thoughts and be understood by the audience is a question that runs through the entire creative process and requires the creator to constantly consider and obtain feedback from the audience in order to solve the problem.

This study aligns with previous research findings and emphasises that artistic creation is strongly influenced by cultural, natural, economic, and social factors. Research by Li (2022) suggests that artists draw from their environment and are bound by cost, social power, and environmental factors. Pelowski (2018) explores the figurative use of visual symbols versus abstract expression, whilst Wang (2012) analyses the impact of material choice on the perception of the work. Xu's (2020) study further highlights that art making is a multi-dimensional process involving social, historical and audience interaction considerations, whilst pointing to the challenges faced by the artist including cost, technology, temporal and spatial constraints, and connotative expression, as well as the importance of overcoming these challenges.

This study also fills a gap in methodological research on this type of work by describing a seven-step design methodology for lighting installation art that includes theme determination, material selection, sketching, modelling, testing, installation, and validation. In comparing the methods used to create different types of lighting installation art, the study referenced Feng (2015), who identified a five-step process including inspiration, formal decision, motif selection, image creation and installation design. Notably, the discussion of Pepper's work emphasises the lack of material

selection and production due to the nature of video installation art. It is argued that the visual - including pattern selection and image creation - is integral and that the design process involving computer modelling and three-dimensional printing fits within the seven-step framework established in this study.

This study analyses the factors that need to be taken into account for the role of the creator in the design process, which is not a concern for other researchers. This point can provide more creative thinking for creators to carry out their creative practice. However, the limitation of this study is that the sample size is not comprehensive enough, and only through an in-depth study of works from a certain region, it may be insufficient to summarise the creative factors that need to be considered in different creative contexts and cultures.

5.3 Suggestions

5.3.1 Suggestions for Creators, Audiences, and Planners

For creators, art creation is a teamwork that integrates thinking and production process. Therefore, in the construction of the creative team, team members can be selected according to the form of the theme, and the interdisciplinary ability of the whole team should be emphasized. In the thinking process, important steps include theme setting, form determination, visual design, simulation modelling, material selection, testing, production installation and verification. Theme setting should be derived from social customs, historical beliefs, natural geography, and character stories. The overall step-by-step focus is derived from the form of the work, but the integrity of the process needs to be ensured to avoid being affected by uncertainties. The form needs to consider factors such as cost, social power and the environment. In addition, the choice of materials is based on the expression of the theme, the audience's psychology, visual performance, light and shadow effects, cost, and time constraints. Regarding the social and historical nature of artworks, creators should not avoid socio-political issues and use artworks to criticise and reflect on social phenomena. At the same time, the creation of the work also considers the audience's way of interpreting the work, including the cultural background, the use of sound and light, and the

interpretation of the text, as well as pre-determining the audience's viewing perspective and course of action, and soliciting direct feedback from the audience to optimise the expression of the work. During the production of a work, creators need to ensure that construction proceeds as expected to avoid deviations from the expected. In the face of challenges such as cost budgets, technical difficulties, temporal and spatial constraints, and connotative expression, creators should remain innovative, be willing to experiment and adapt to constraints, and focus on personal expression while seeking feasibility in practice. Finally, creators can pursue a more perfect work effect around visual aesthetics, environmental integration, interactivity and participation, regional culture, and social epochs.

To deepen the audience's understanding of Lighting installation artworks, this study puts forward the following comprehensive suggestions: firstly, the audience can endeavour to understand the theme and cultural background of the artworks with the help of the exhibition boards or text introductions next to the artworks, which can enrich the understanding of the artworks' ideological expressions. Secondly, the audience should focus on the multi-sensory experience of the works, meditate on the visual effect listen to the sound of the works, and actively explore the dialogue with the interactive works to obtain a comprehensive and deep immersive sensory experience. Finally, it is recommended that the audience give positive feedback and communication after viewing, which not only enhances the audience's overall understanding of the work, but also explores the multi-dimensionality of art from a variety of perspectives and gives the creators more suggestions on how to improve the work.

As the role of the curator to weigh the audience and the creator, he or she should stand on both sides of the fence. From the audience's point of view, the selection of works should take into account the diversity of the audience's cultural levels and need to cater for audiences of different ages and cultural backgrounds. The curator can help the audience to better understand the deeper meaning of the work by setting up detailed textual introduction panels in the display of the work. Audiences prefer works that are rich in sensory experience, so curators can focus on works with a strong sense

of immersion. From the creator's point of view, it is necessary to co-ordinate and communicate with the creator, and to give more information about the venue as early as possible, such as the size and location of the venue, the surrounding environment, and whether there is any sound or light interference, and so on. It can be more for the creators to get the preparation time and funds and assist in solving some technical difficulties of the works.

5.3.2 Suggestions for Future Research

1. Interdisciplinary research on Lighting installation art, explore the cross-fertilization of art and other disciplines such as science and technology, architecture, environmental science, etc., and study how to use interdisciplinary methods to enhance the expressive power and influence of Lighting installation art.

2. Research on the application fields of Lighting installation art, discussing in which fields the role of Lighting installation can be played and more functionalities can be brought into play.

3. It can be more systematic to study the establishment of professional courses related to Lighting installation art and give this interdisciplinary nature to young students earlier.

4. Explore how new science and technology, such as artificial intelligence, can give more creative possibilities to Lighting installation art.

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APPENDIX

Appendix details

In-depth interview

Interviewee: Yiyun Mo, Occupation: postgraduate student, interview method: Face to face interview, Area of residence: Guangzhou. Interview by Liming Han on November 27, 2023 on the topic of the design method of Lighting installation art based on regional culture.

Interviewee: Yi you, Occupation: postgraduate student, interview method: Face to face interview, Area of residence: Guangzhou. Interview by Liming Han on November 26, 2023 on the topic of the design method of Lighting installation art based on regional culture.

Interviewee: Zexuan Huang's group (include Mincong Huang, Clement Himbert), Occupation: artist, interview method: Telephone interview, Area of residence: Guangzhou. Interview by Liming Han on November 29, 2023 on the topic of the design method of Lighting installation art based on regional culture.

Interviewee: Shanting Zhang, Occupation: young artist, interview method: Face to face interview, Area of residence: Guangzhou. Interview by Liming Han on November 30, 2023 on the topic of the design method of Lighting installation art based on regional culture.

Interviewee: Qiao Ji, Occupation: Professor, interview method: Video interview, Area of residence: Guangzhou. Interview by Liming Han on November 29, 2023 on the topic of the design method of Lighting installation art based on regional culture.

Interviewee: Xiqing Liang, Occupation: Artist, interview method: Face to face interview, Area of residence: Guangzhou. Interview by Liming Han on November 30, 2023 on the topic of the design method of Lighting installation art based on regional culture.

Interviewee: Hai Zhao, Occupation: Planners, interview method: Telephone interview, Area of residence: Guangzhou. Interview by Liming Han on December 2, 2023 on the topic of the design method of Lighting installation art based on regional culture.

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