



The Application of Immersive New Media Installation Art in Urban Commercial
Space in Dalian City

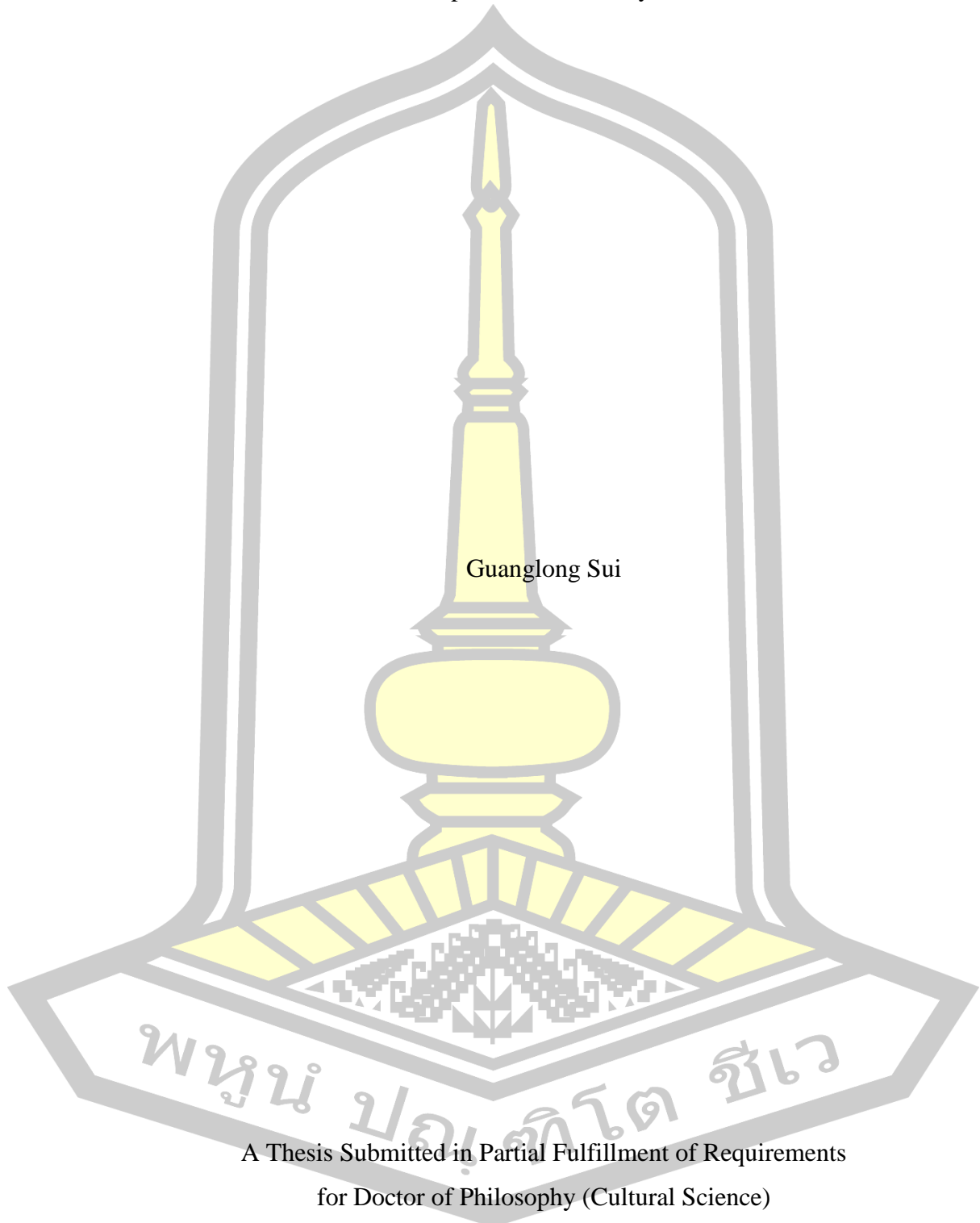
Guanglong Sui

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

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The Application of Immersive New Media Installation Art in Urban Commercial
Space in Dalian City



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A Thesis Submitted in Partial Fulfillment of Requirements
for Doctor of Philosophy (Cultural Science)

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ABSTRACT

The objectives of this study were to study the application of immersive new media installation art in urban commercial space in Dalian City. The qualitative research has been conducted in Dalian urban commercial space Bingshan Huigu Xiongdong Street. The data has been accumulated through document analysis, survey, interview, observation, deep interview and workshop. The research instruments composed of structured and unstructured questionnaires, participant observation and focus group. The sample consisted of 29 people, and the data were analyzed by the cultural theory. The research results were proposed through descriptive analysis. The results are as follows.

The research objectives were 1) To study historical background of the origin of immersive new media installation art in urban commercial space in Dalian; 2) To study the current situation and problems of immersive new media installation art in urban commercial space in Dalian and 3) To present construction model of design application of immersive new media installation art in urban commercial space in Dalian. This study is qualitative research, which includes relevant literature, investigation, observation, and interviews with key informants. These data were collected and analyzed through fieldwork method and included urban commercial space manager, installation artist and engineer of Dalian City. This research results are as follows:

Firstly, the development process of new media installation art in Dalian's urban commercial space has gone through four stages: initial, prosperous, diversified, and contemporary. The gradual maturity of installation art not only brings rich artistic expressions to urban commercial spaces, but also immersive experiences that are widely welcomed and influenced by people.

Secondly, Dalian Xiongdong Street is centered around the installation art Juxiong Beibei, representing the integration of China's commercial and cultural tourism industries. However, excessive reliance on installation art marketing leads to insufficient interaction and requires a significant amount of funding for technology and maintenance. Balancing the integration of business and artistic culture is also a challenge.

Finally, the researcher adopted a touch projection human-computer interaction method, inspired by the unique cultural elements of Dalian, and constructed a model to solve the problems that arose. This provides design guidance and reference for the application of immersive new media installation art in urban commercial spaces in Dalian.

Keyword : Urban commercial space, Immersive, New media installation art



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I am very lucky to be assisted during my fieldwork by academics, managers, and technicians with expertise related to new media installations and commercial spaces.

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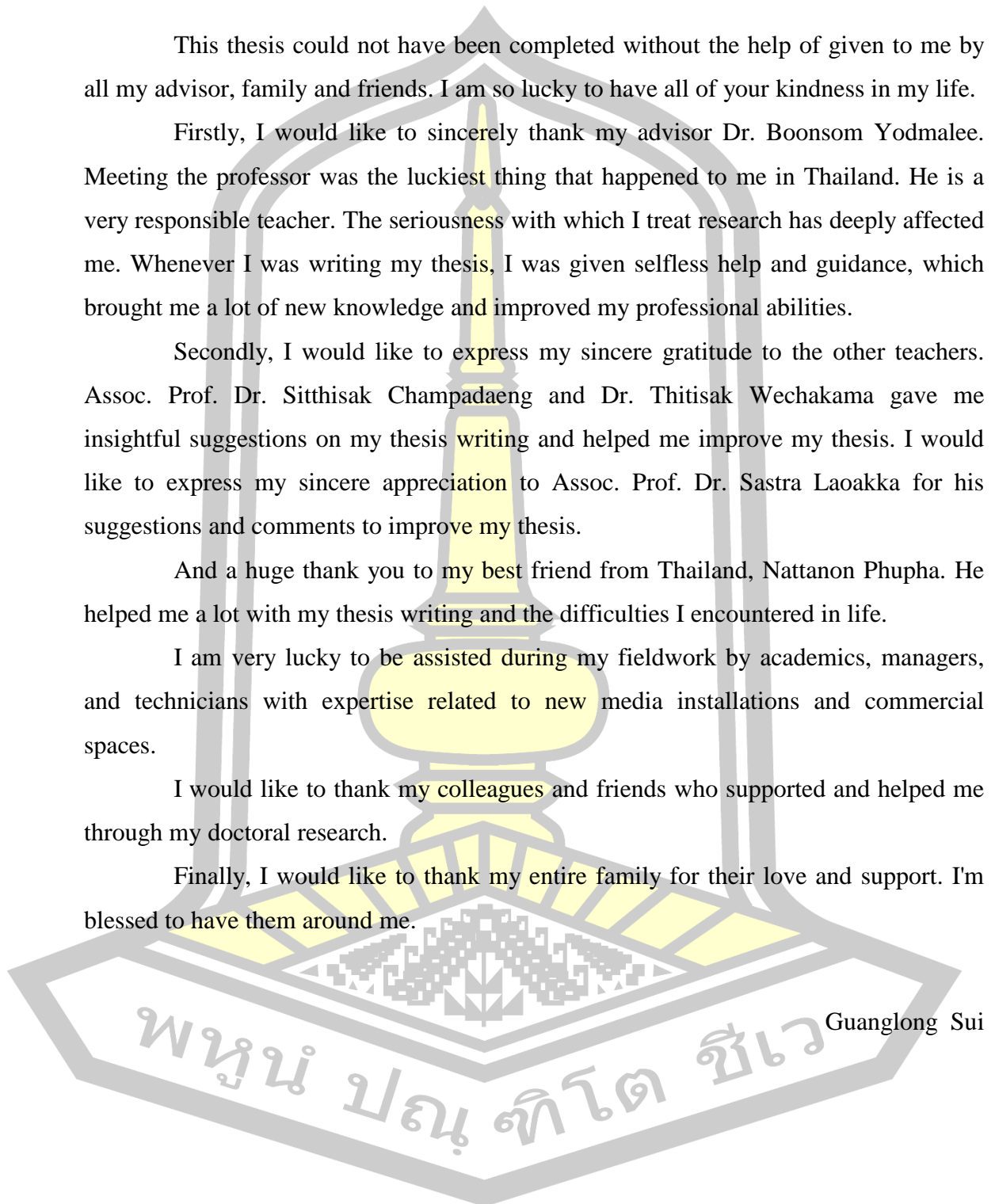
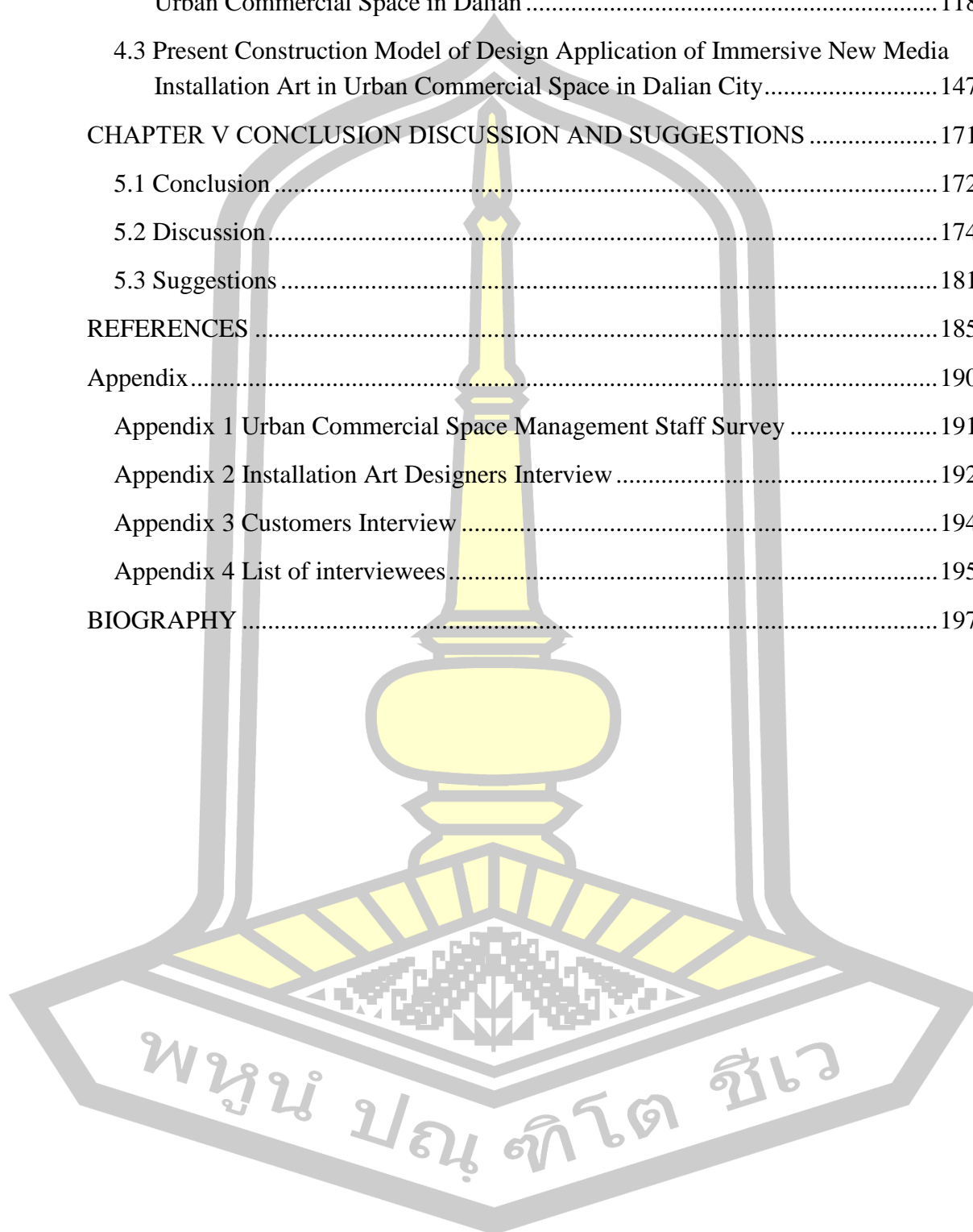


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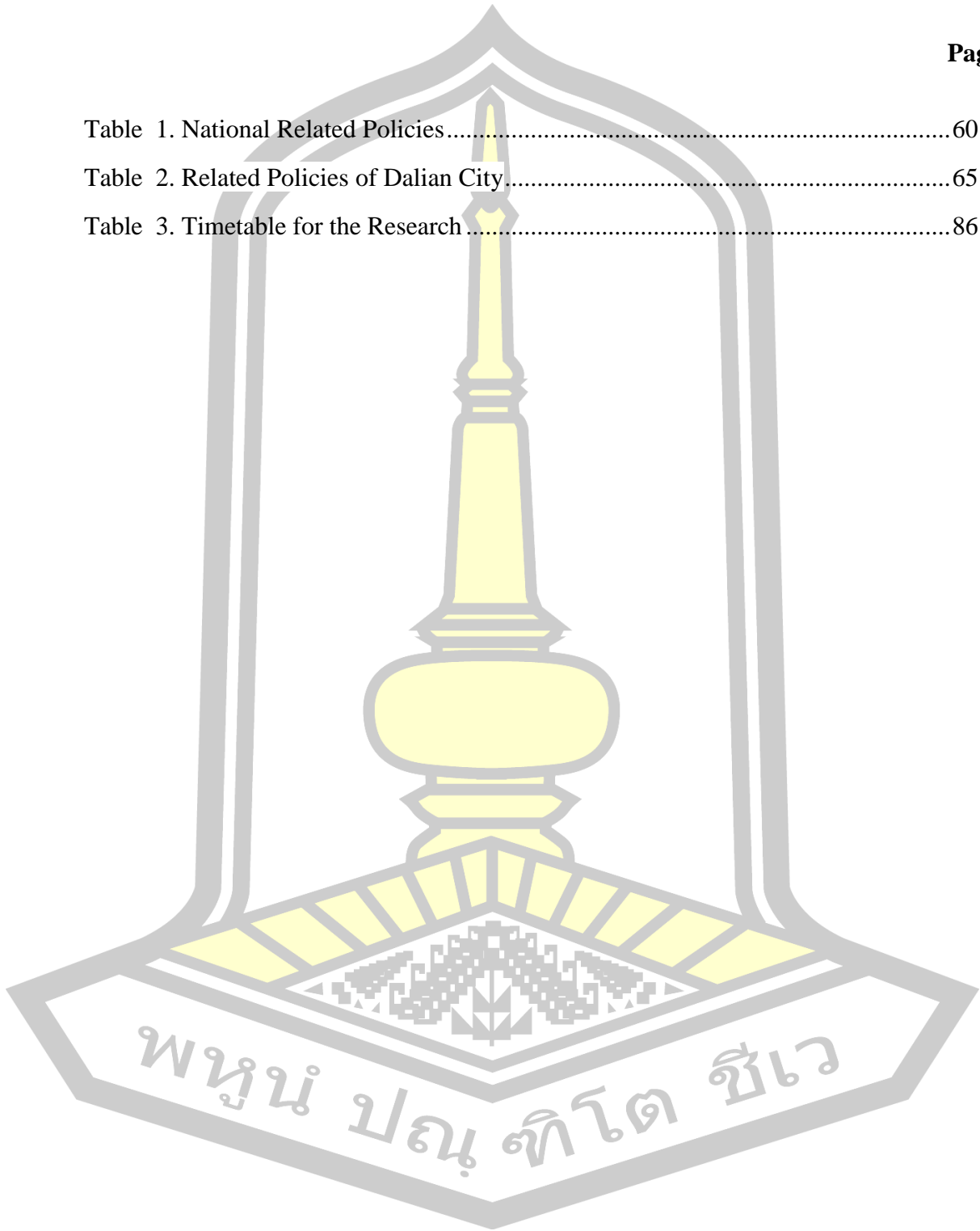
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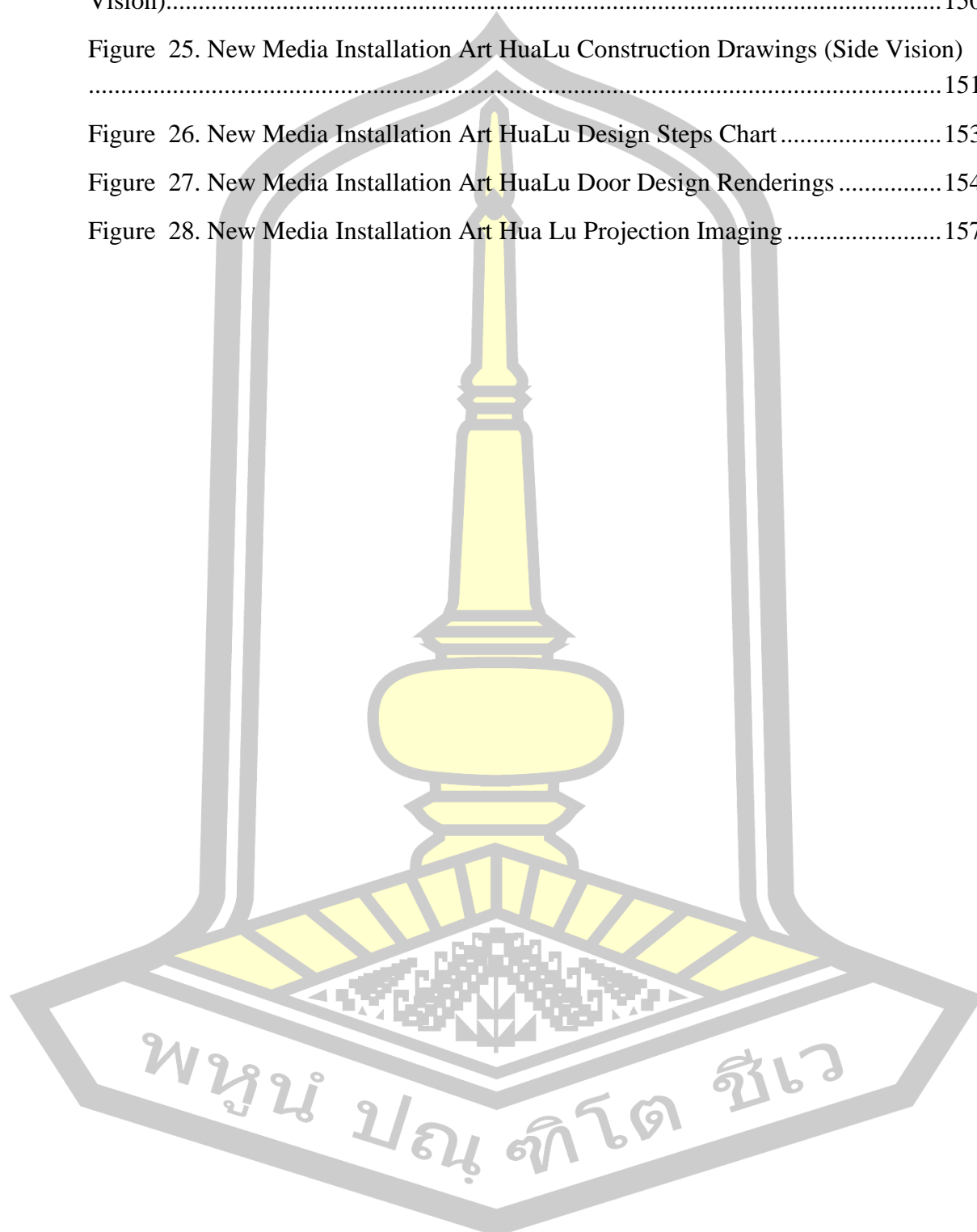
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CHAPTER I

INTRODUCTION

1.1 Background of the Study

Immersive new media installation art is an avant-garde art genre in contemporary Chinese art. It has been introduced to China since the 1980s and has formed unique local artistic characteristics and cultural values through long-term evolution and development. It plays a very important role in the commercial field of Chinese cities. However, due to various factors, permanent presence in Dalian's urban commercial space is currently very rare. Therefore, this article takes the new media installation art of Dalian urban commercial space as the starting point, analyzes its current situation and problems, and presents a theoretical model of the application of immersive new media installation art in Dalian urban commercial space, hoping to truly integrate art and commerce better.

In the digital era of China, the internet has completely changed the business model, bringing traditional physical commerce into unprecedented challenges. At the same time, consumers' emotional and spiritual needs have gradually surpassed the limitations of traditional commercial spaces, forcing commercial complexes to quickly adjust to new needs. At the same time, emerging media installation art is gradually moving out of traditional exhibition venues and into commercial spaces. Immersive experience has become the dominant direction in the design of commercial complexes at present. New media installation art has attracted a wide audience through captivating themes, diverse expressions, and strong visual impact, and has become a keyway to enhance the consumption experience of commercial complexes. Its involvement not only aligns with the trend of commercial spaces, but also plays a crucial role in creating sustainable interactive social spaces. (Li, 2022)

With the emergence of the information age and the rapid rise of the internet, China's way of life and social interaction have undergone revolutionary changes. This era not only raises people's aesthetic standards, but also sets higher expectations for contemporary art. Avant-garde artists gradually break free from the constraints of traditional art forms, combining new media, new technology, and art to create many

refreshing artistic expressions, among which new media installation art has become an outstanding representative of contemporary art. China has entered the era of experiential economy, emphasizing the importance of shopping experience and emphasizing the satisfaction of consumers' emotional needs and psychological identity. In the context of this era, exploring how new media installation art can be integrated into urban commercial space design has extremely high research value. This is not only an important exploration of the relationship between art and commerce, but also a profound reflection on contemporary culture and society. (Lai, 2021)

In recent years, immersive new media installation art has been constantly emerging and gradually stepping out of exhibition halls to intervene in various fields of public life. The emergence of this phenomenon is gradually changing the traditional aesthetic paradigm characterized by a single sensory experience and landscape, and shifting towards a multi-sensory, dynamic and diverse immersive aesthetic paradigm. This also reflects that with the transformation of creative concepts, new media installation art is no longer an isolated work of art, but a form of art that can resonate with the public and convey popular ideas in commercial spaces. With the rapid development of technology and the prevalence of modernism, installation art has been revitalized and urban commercial spaces are constantly expanding. Consumers are no longer just satisfied with shopping, but seek a richer consumer experience, prompting commercial space design to emphasize consumer experience. New media installation art, as an avant-garde public art form, attracts public participation through multimedia and sensory experience, and improves the level of art appreciation. Commercial space has become a link between people's daily life and interactive installation art, shaping the environment and enhancing consumer experience. (Du, 2019)

Dalian City, located in the southern part of Northeast China and the southern end of the Liaodong Peninsula, is a sub provincial city and a planned city. It is an important coastal economic center city, port city, and scenic tourist city approved by the state in the northern region. It has the reputation of being the capital of Hong Kong and Bohai in the north. Immersive consumer experience has become the main development direction of urban commercial space design in Dalian. To achieve high-

quality integration and development of new media installation art in urban commercial spaces, the design of immersive new media installation art must reflect the value of culture, closely follow the development form of local art, recognize the importance of balanced development between commerce and art, disseminate culture, and make it a business card for urban cultural exchange. (Zhang & Wang, 2021)

Although there are many temporary installation art works in the commercial space of Dalian city, the number of long-term fixed immersive new media installation art works is still very small. There are still shortcomings in the design, development, and experience of installation art that exist in commercial spaces. One is the homogenization of installation art in commercial spaces; Secondly, installation art lacks creativity and design concepts need to be updated; Thirdly, its connection with the commercial environment is relatively low, which cannot deeply stimulate the development of urban commercial economy. (Li, 2018)

This thesis focuses on the development process of new media installation art in Dalian urban commercial spaces, the current situation and problems of immersive new media installation art in Dalian urban commercial spaces, and the theoretical models presented for its application. The researcher hope that this thesis can enhance people's understanding of new media installation art, make more people realize the artistic and social value of new media installation art in Dalian urban commercial space, and promote the role of new media installation art in urban commercial space.

1.2 Objectives of the Research

There are 3 research objectives as follow:

1.2.1 To study the historical background of the origin of immersive new media installation art in urban commercial space in Dalian.

1.2.2 To study the current situation and problems of immersive new media installation art in urban commercial space in Dalian.

1.2.3 To study the present construction model of design application of Immersive new media installation art in urban commercial space in Dalian.

1.3 Research Questions

1.3.1 What is the historical background of the origin of immersive new media installation art in urban commercial space in Dalian?

1.3.2 What is the current situation of the application of immersive new media installation art in Dalian's urban commercial space, and what are the existing problems?

1.3.3 How to effectively integrate immersive new media installation art with Dalian's urban commercial space, and present an effective construction model for tourists and residents, including the commercial environment?

1.4 Importance of Research

1.4.1 Reorganize the historical background of the origin of immersive new media installation art in Dalian urban commercial space. It can help us understand its origin and evolution, protect local cultural heritage, and reveal its status and value in today's society.

1.4.2 Understand the current status and problems of immersive new media installation art in Dalian urban commercial space. This will help us deeply understand the characteristics of immersive new media installation art in Dalian urban commercial space and promote the sustainable development of local commercial space.

1.4.3 Obtain the construction model of immersive new media installation art design application in Dalian urban commercial space. It helps to provide relevant researchers with guidelines for planning and executing art projects, standardize operations, reduce resource waste, promote knowledge sharing and cross-field collaboration, and promote innovation and diversity.

1.5 Definition of Terms

1.5.1 Application means an innovative means of applying an art form that combines immersive experience with new media installation art in Dalian's urban commercial space.

1.5.2 Immersive art means the use of technology to create a fully immersive interactive experience for the audience. This refers to the use of holographic

projection technology to create an environment or narrative that surrounds and engages the viewer.

1.5.3 New media installation art means an art form created using digital technology and multimedia elements. This refers to the new composite polymer material deer shape and curved screen as well as micro-holographic projection equipment.

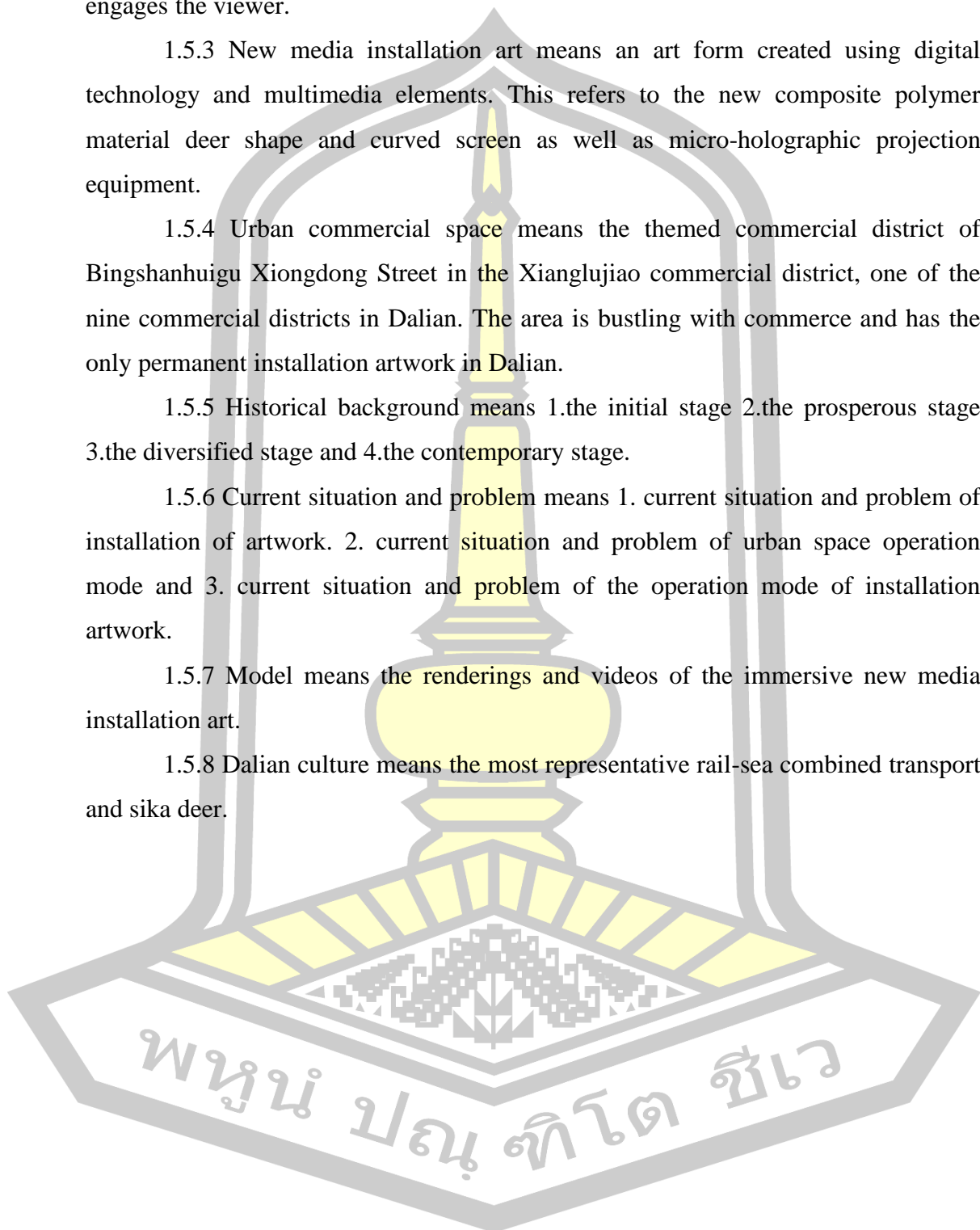
1.5.4 Urban commercial space means the themed commercial district of Bingshanhuigu Xiongdong Street in the Xianglujiao commercial district, one of the nine commercial districts in Dalian. The area is bustling with commerce and has the only permanent installation artwork in Dalian.

1.5.5 Historical background means 1.the initial stage 2.the prosperous stage 3.the diversified stage and 4.the contemporary stage.

1.5.6 Current situation and problem means 1. current situation and problem of installation of artwork. 2. current situation and problem of urban space operation mode and 3. current situation and problem of the operation mode of installation artwork.

1.5.7 Model means the renderings and videos of the immersive new media installation art.

1.5.8 Dalian culture means the most representative rail-sea combined transport and sika deer.



1.6 Conceptual Framework

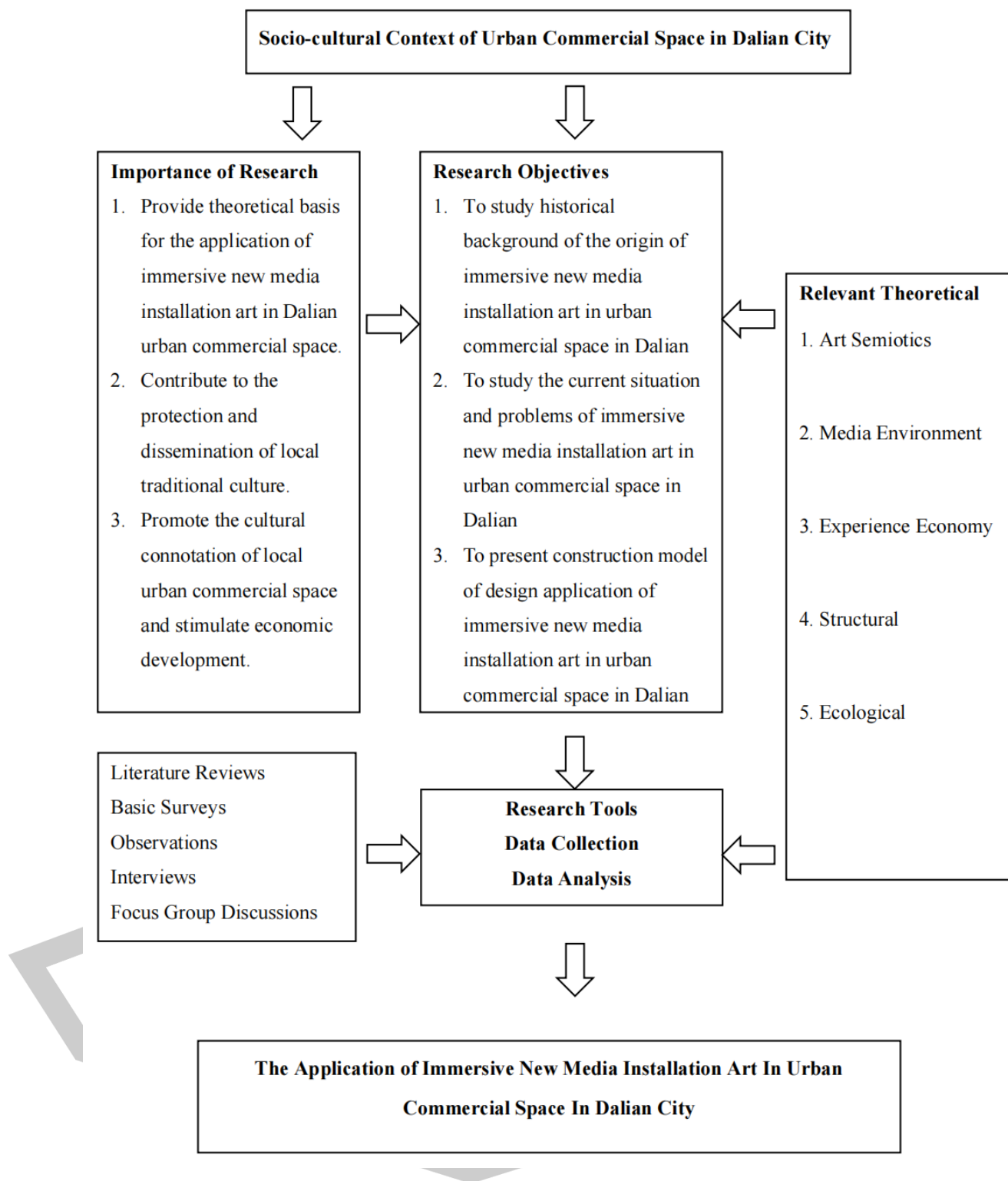


Figure 1. Conceptual Framework

Source: Sui Guanglong (2023)

CHAPTER II

LITERATURE REVIEWS

This chapter reviews the relevant documents of new media installation art and urban commercial space in Dalian and Dalian culture to obtain the most comprehensive information available to be used in this research, the researcher has reviewed it according to the topic and objectives:

2.1 Related Cultural Background of Dalian City

2.1.1 Knowledge of Dalian City

2.1.2 Knowledge of Urban Commercial Space

2.1.3 Development and Evolution Process of Dalian Urban Commercial Space Layout

2.1.4 Dalian Culture

2.2 Knowledge of Immersive New Media Installation Art

2.2.1 Immersive Art

2.2.2 Culture of Media Art

2.2.3 Culture of Installation Art

2.3 Relevant of Art in Urban Commercial Space Development

2.3.1 Knowledge of Contemporary Art

2.3.2 Modern Art and Popular Culture

2.3.3 Culture of Consumption and Experience Economics

2.4 Related laws and policies

2.4.1 National Related Policies

2.4.2 Related Policies of Dalian City

2.4.3 Relevant Laws and Regulations

2.5 Relevant Theoretical Knowledge

2.5.1 Symbol Impression Theory

2.5.2 Media Environment

2.5.3 Experience Economics

2.5.4 Structural and Functionalism

2.5.5 Ecological Theory

2.6 Related Research

2.6.1 Related Chinese Literature

2.6.2 Related Oversea Literature

2.1 Related Cultural Background of Dalian

2.1.1 Knowledge of Dalian City

Dalian is located in the Liaodong Peninsula, the southernmost tip of Northeast China. It borders the Yellow Sea to the east, the Bohai Sea to the west, faces the Shandong Peninsula across the sea to the south, and is connected to the Northeast China mainland to the north. It is a peninsula city surrounded by sea on three sides. Dalian covers an area of 12573.85 square kilometers, of which the urban area is 2414.96 square kilometers; its population is 5.9 million, and the urban population is 2.53 million. The coastline of Dalian is 1,906 kilometers long, accounting for 73% of the total coastline length of Liaoning Province, including 1288 kilometers of land coastline and 618 kilometers of island coastline. Dalian has a temperate monsoon climate with marine climate characteristics. There is no severe cold in winter and no scorching heat in summer. Especially in summer, Dalian has become a desirable summer resort.

On June 5, 2001, the United Nations awarded Dalian the only "World Environmental 500" city in China and the second in Asia. Jiang Zemin called Dalian the "Pearl of the North", and the director of the National Tourism Administration positioned Dalian as a "romantic city". Dalian is a designated summer resort and tourist hotspot city in my country. It not only has the cultural and historical resources of "half of the Natural Museum of Modern Chinese History", but also has many natural tourism resources with wonderful scenery. In 1998, it won the title of one of the first batch of outstanding tourist cities in China. The Southern Coastal Scenic Area, Lushunkou Scenic Area, Jinshitan Scenic Area and Bingyugou Scenic Area are the four major scenic spots in Dalian. Dalian is also a city that integrates leisure into life. Playing on the seaside is a part of Dalian people's life. Dalian is It is a peninsula, so the coastline is very long. There are different seaside scenes on the long coastline. The huge gap can be clearly felt from Binhai Road and Xinghai Bay. Binhai Road

sees mountains and seas connected, while the scenery of Xinghai Bay is Endless sunny beaches as far as the eye can see.

Every year, Dalian holds large-scale events such as the International Fashion Festival, Commodity Import and Export Fair, Fireworks and Firecrackers Spring Festival Party, Sophora Flower Appreciation Party, International Marathon, Bingyu Lantern Festival, Beach Festival and other well-known overseas events. It also successfully holds the 97 China Tourism Fair and the 2nd Flower Fair. Dalian City has increased investment in the development of tourism resources. The first step is to improve the tourism development pattern with the southern seaside of the city as the center and Jinshitan and Lushun as the two wings.

Dalian is both an open coastal city and an old industrial base city. It shoulders the dual tasks of being the leader in opening up Northeast China and taking the lead in realizing the comprehensive revitalization of old industrial bases.

Dalian is one of the first batch of coastal open cities in China. It has the first national economic and technological development zone approved by the State Council, the only bonded zone and high-tech park in Northeast China.

Dalian is an important fruit and aquatic product production base in China, as well as an important national industrial base. The first aircraft carrier, the first 10,000-ton ship, the first high-power diesel locomotive, and the first offshore drilling platform were all born here.

The place name of Dalian is the pronunciation of "Dalini". "Dalini" is Russian and means "far away". The origin of "Dalini" is that after Dalian became a Russian concession, the place was named Dalini according to the order of Tsar Nicholas and was opened as a free trade port. The later sound is changed to Dalian. The name Dalian originates from Dalian Bay and began in modern times. In the sixth year of the reign of Emperor Guangxu of the Qing Dynasty (1880), Beiyang Minister Li Hongzhang mentioned "Dalian Bay" in his memorial on the construction plan of the Dalian Bay military port. During the Japanese imperialist occupation, it was first called Dalian in February of the 31st year of the reign of Emperor Guangxu of the Qing Dynasty (1905). After liberation, on April 1, 1949, Dalian and Lushun were jointly known as Luda City. In February 1981, it was renamed Dalian City with the approval of the State Council. (Kou, 2010)

2.1.2 Knowledge of Urban Commercial Space

Through the article, I learned that some scholars have studied the cultural structure of cities from three aspects: material culture, institutional culture and spiritual culture. This is a view that is inspired by the theory of human cultural structure and extends this theory to urban cultural structure. Culture, according to White, is a special kind of animal—an elaborate mechanism employed by man in his struggle for existence, a system of superorganisms and tools. One of the great features of culture is that it can be transmitted by non-biological means. According to White, culture is a form of social inheritance, which is passed down from generation to generation over time. At the same time, culture is also composed of a series of special phenomena. Therefore, culture can be formulated according to its own principles and laws.

Regarding the content of commercial space, the existence of urban commercial space itself is based on the purpose of commercial profit, and it is a place for people to provide consumption scenes to satisfy people's shopping. Commercial real estate projects are often large and numerous and have a great impact on the quality of urban space, but usually do not receive the attention they deserve. If these day-to-day projects can also dig deep and emphasize the characteristics of each area, it will greatly improve the openness and vitality of urban blocks. Through the idea of urban innovative design, it injects a larger urban public line into it, and strives to lead the "complex" to a high-quality block network.

With the advent of the era of experiential consumption and the impact of e-commerce, experiential commercial centers are gradually replacing traditional shopping centers. (Yang, 2018). In experiential commercial centers, the situational creation of leisure space has gradually become the focus of designers. This paper starts with the leisure space of the commercial center, and divides the experiential activity space through the analysis of the color environment, material application, installation and display, landscape greening and other factors of the commercial space, mainly including exhibition space, rest space, fun space, etc., and sort out the design vocabulary created by different spatial experiential scenarios, in order to put forward some suggestions for the leisure space design of the commercial center.

The scene creation of leisure space is the first step to respond to people's needs for humanities and memory. It can satisfy the feelings of the audience. Starting from the perception of the audience, the leisure space for business heartfelt is built into a themed "museum" to enhance the urban culture. At the same time, it also increases the vitality of the commercial center.

The rational distribution of urban commercial space is of great value in coordinating urban development. (Wang, 2020) Through the study of urban commercial space, the understanding of urban commercial space can be enhanced, which can provide more in-depth and accurate preliminary research support for the preparation of subsequent commercial space planning. Based on the perspective of urban planning, this thesis proposes the assumption of the main influencing factors that affect the urban commercial space layout, namely population and land price factors, location factors, and business model factors. Its research breaks through the limitations of traditional data and traditional analysis methods by using the spatial analysis module combined with the traditional analysis methods. By taking the selected urban area of Hefei, Anhui as the object, it summarizes the evolution characteristics of the commercial space distribution in the urban area of Hefei, from the Population and land price factors, location factors, and business model factors put forward the optimization strategy of commercial space in Hefei City, it can provide some spatial guidance for the selection of urban commercial space layout in Dalian.

With the improvement of China's material living standards and the acceleration of urbanization, the development of the urban landscape has changed significantly. We have gradually moved from the initial stage of urban development, which emphasizes the development of physical space, to the stage of urban development, which emphasizes "people first". Therefore, our focus on urban public space has gradually shifted from "space" to "public". The complex of urban commerce has its complex function, which makes it carry the important activities of daily living activities of citizens, and its own public value is high (Gong, 2018). As one of the important components of urban public space, its external space becomes indispensable for the study of space publicity.

This article studies the interaction between the external space of commercial complex and people. Taking Habermas' public sphere theory as the theoretical

background, the interaction between people and the external space of commercial complex is summed up in the study of space publicity. By analyzing the characteristics of publicity from a sociological perspective, Then, from the perspective of architecture, the characteristics of spatial commonality are proposed, and from the perspective of spatial attributes, it is analyzed and studied what kind of external space of commercial complexes can meet people's daily behavioral activities, summarize the design strategy of the external space of Chengdu commercial complexes under the guidance of "public nature" in the emerging stage. The purpose is to create a "shared" and "popular" external space of commercial complexes for citizens. The content of Chapter 3 is helpful for my paper, starting from the two constituent elements of public nature in space (human and material space) as the research entry point, we analyzed the characteristics of public behavior and activities in the external space of commercial complexes, as well as the helpful role of external physical space in expressing its commonality from the perspective of spatial attributes.

This article takes Dalian as an example to study the shared space of commercial complex cities under the concept of symbiosis, from which we understand that the concept of sharing is actually an inherent attribute of the existence of public buildings. (Wang, 2020) Under the influence of the current sharing economy and the vigorous development of information technology, "sharing" has gradually become a new urban vocabulary, which has a more distinct impact on people's living patterns. As the most important medium of urban life, from the perspective of commercial complex buildings, the commercial space has also begun to develop and improve based on "sharing". However, as a high-complex building, urban commercial complexes are easy to form a self-system under the high-efficiency mode, which leads to the concept of looking inside the commercial space. The lack of urban space design arrangement and shared space of urban continuity makes it easy to become a mega-structured urban island, and even has a negative impact on urban space. Therefore, under the current perspective of urban development, it is necessary to further define and study the concept of "urban shared space". Through the introduction of the concept of symbiosis, the design of commercial complex buildings with high maturity in spatial layout and public characteristic experience is sought. From a supplementary

perspective, it provides reference and thinking for the new construction and renewal of Dalian's urban commercial complex. Among them, the existing research content and related theories are generally reviewed, and the proposed research methods and framework provide theoretical support for understanding the symbiotic concept of Dalian commercial complex.

The literature first discusses the contemporary development of commercial complexes and shared spaces, and then explains and defines the urban shared space of commercial complexes, in order to study the symbiotic concept theory and design of commercial complexes in Dalian. Based on the concept of symbiosis, and then describes and interprets the characteristics of urban shared space in commercial complexes from three perspectives: urban space symbiosis, urban function symbiosis, and urban cultural symbiosis. Design Thinking for Urban Content. It provides analysis from different perspectives on the construction of new media installation art for the study of Dalian's urban commercial space. Furthermore, according to the division and definition of the shared space of the commercial complex city, the detailed classification of the specific bearing space form is carried out, and the design expression method of the relevant space is analyzed and summarized. The analysis serves as a reference and foreshadowing. Finally, is to carry out field research and questionnaire survey on the content of urban shared space of key commercial complex projects in Dalian, summarize and analyze the current development problems, understand the specific space design needs of Dalian, and combine the urban context of Dalian to put forward the driving force for the development of urban shared space. Growth provides strategic direction. This part gives a new understanding to the analysis of the development of specific urban space in Dalian. Implant this set of theoretical frameworks into the studied commercial space of Dalian city and analyze and observe whether it accords with the same result.

Commercial complex buildings, although there are many excellent examples of urban shared space expression in China, we can still take a peek at Dalian as an example. At present, there are still a large number of commercial complexes in Dalian. Contrast the problem frequently, therefore, it can be analyzed that urban shared space is still in the initial stage of development in the design of commercial complexes in my country, and it can become one of the trends in the future

development of urban space. Through the analysis of the urban commercial complex building in Dalian, the urban shared space can be defined not only as a type of space, but also as a theoretical guidance method. It is based on the urban design perspective mainly oriented by architecture. It is hoped that the urban architecture can be improved. Comprehensive promotion of development provides a way of thinking, based on the concept of symbiosis, which is helpful to the optimization of urban commercial space and the stimulation of economic consumption.

Li (2017)'s *Public Art and Urban Culture* takes public art as the core category, public domain as the basic concept, and the sculptures of world-famous cities and urban cultural construction as the basic relationship, and the diversity of public art and the multi-directionality of urban space culture as the basic content. As Hegel said, "Each work of art belongs to its time and nation, each with its own special environment, and depends on special historical and other concepts and purposes." Works of public art are considered to be oriented to the general public in the city, and placed in places that can attract public attention; it means to provide some kind of educational, commemorative or recreational experience; and to convey connotation and information through content that can be generally understood by the public. Public works of art encountered in the course of daily travel that reinforce the images of those who created them, from the images of countless ancient rulers, designed to strengthen beliefs and inspire the minds of the populace, to the mass of street furniture, such as triumphal arches that proclaim the military power of some particular whole. But these are not serving political factions, but all artistic concepts serving the people, which is indeed a more modern concept. (Li, 2012)

The concept of public space implies a kind of public realm. One problem with the concepts of public sphere and public art ontology is that their meanings have a very variable and diverse history, which can be said to depend on political and local circumstances. In recent years, domestic and foreign discussions on public art have mostly revolved around the concept and understanding of the public domain. Public art is a historical construction of culture and the precipitation of civilization. The historicity of public art reflects the publicity and epochal nature of public art, and also reflects the different constructions of urban culture by public art. Public art in different periods embodies and expresses different urban cultural needs, and also

constructs different urban cultural images, conveying different cultural concepts and cultural spirits. Public art itself is not a natural object, and there is no such public art in the world of culture and history or in the world of real life. The philosopher Heidegger said in, "The Origin of the Work of Art", that art is always historical, and art as a creation is essentially historical, and art as historical is the creative preservation of the truth in the work. (Wu, 2011) Of course, the truth Heidegger refers to here should be a generalization of historicity, which can be understood as the truth of historic public fields and public art in public spaces. The public art created in the field of public space is not only a form of artistic expression, but also a form of cultural inheritance, a cultural expression and the transmission of cultural value, an expression of the public's attitude towards urban culture and an emotional expression that embodies the public spirit. Therefore, it can be said that urban sculpture or public art in public areas is not only a form of aesthetic object, but also a cultural architectural symbol that contains a variety of cultural spiritual connotations.

The literature on the symbolism and signification of urban culture is reviewed. The city refines and solidifies the characteristic image of artworks into symbols, making it a fixed impression label in the public memory. Every place has its own unique history and culture, and every city also has its own unique symbols. Those visible, tangible and audible urban cultural symbols have always been the business card of a city. Landmark buildings or urban sculptures are often regarded as the signs and symbols of a city. For example, the world-famous symbols of the most iconic cities in the world include the Eiffel Tower in Paris, France, the Statue of Liberty in New York, the Forbidden City in Beijing, China. The Eiffel Tower symbolizes the fashion, romance, and elegance of the city of Paris, and is also a unique cultural symbol of Paris. The Statue of Liberty embodies the characteristics and temperament of New York's freedom, unrestrained, open, and innovative. The Forbidden City represents the unique position of the capital Beijing in Chinese history and its profound traditional cultural heritage and connotation. Also shows the complexity and diversity of Beijing, a city with a long history. The above examples all show that architectural landmarks or iconic sculptures that can become symbols and symbols of a city must undoubtedly have high artistic value. As public artworks, they are also subtly guiding and changing the unique temperament of a city.

From what aspects can a city's cultural connotation and spiritual civilization be reflected? Because it may come from many aspects, such as architecture, urban planning space, cultural activities. The mountains are high, the lake is long, and the city is rich and always new because of its culture. Cities should lay a solid foundation on the journey of construction, make contributions for a long time, give full play to the nourishing role of culture, and use culture to nourish people. A good urban culture can enable urban residents to improve their own cultural accomplishment and take a big step in the journey of creating a civilized city. The creation of a good public art and cultural space can provide preconditions for the progress of urban cultural civilization and reflect urban cultural civilization to a large extent.

Urban commercial space is the projection of commercial space on urban space. Urban commercial space is a type of urban space defined from the perspective of the material properties of space. With the development of society, commerce has developed from an initial exchange behavior to a service behavior, and the connotation of urban commercial space is also constantly enriched. Today, urban commercial space not only refers to the urban space related to commercial activities, but also includes the urban space created by commercial activities. The place and space where business, entertainment, leisure and other activities derived from the event take place. Business development is rapidly occupying an increasingly important position in economic development.

Different scholars conduct research on business development trends from different angles. Zhu (1994) studied the development of foreign commerce and found that the development trends of foreign commerce mainly include large-scale development; in order to facilitate consumers to promote consumption, the diversification of business methods; the generalization of the application of information technology in commercial activities.

From the perspective of e-commerce, Zhao & Li (2003) believed that e-commerce, as a new form of business activities, has strong advantages and is an inevitable choice for business development. E-commerce has broad development prospects in the future.

Li (2022) research found that e-commerce has become an important driving force for economic development. The 21st century must be the era of e-commerce. E-

commerce transactions can improve user satisfaction. Future business development cannot be separated from e-commerce.

Yao (2005) studied the development trend of the retail industry and found that the future development of the retail industry tends to be concentrated and the market concentration is gradually increasing.

Lu (2009) studied the development trend of urban commerce, looked forward to the development trend of urban commerce through data forecasting, and pointed out that the development potential of urban commerce is huge in the next few years.

Li (1999) studied the trend of commercial development and found that commercial development tends to change from extensive development to intensive development. The format and facilities must adapt to the consumption level of residents, rationally layout, and pay attention to regional consumption levels.

Fang (2007) believes that the development of green business has become an inevitable trend of future commercial and economic development. The so-called green business refers to protecting the environment in the process of business activities, restraining the harm caused by business to the environment, and at the same time satisfying the needs of consumers as much as possible, and scientifically realizing the business objectives of enterprises and the sustainability of development. "Green business has the characteristics of culture, system, sustainable development, and harmony. The development of green business can optimize resource allocation, make full use of resources, protect the environment, and more effectively meet consumer needs."

Since the reform and opening up in 1978, China's economy has developed rapidly, and the development of urban commercial space has mostly been upgraded with changes in the level of social and economic development. From the initial bazaars and Quanyechang, to the gradually matured department stores and shopping malls, to the booming commercial complexes in recent years, all are closely related to the economic and cultural level of consumers. (Figure 2)

Update of Domestic Commercial Space Model from 1990s to Present

Period	1981-1990	1991-2000	2001-2010	2011-present
Stage Features	Initial stage	Mature scale	Innovate with the old	Differentiated development
Updated Initiatives	Traditional quanye shops and commercial streets will be renovated to retain traditional retail functions and add more business forms	The scale of commercial buildings is gradually expanding, a large number of department stores, shopping centers have been erected, and business is increasingly prosperous	The trend of commercial complex is emerging, traditional commercial space is trying to transform, and the prototype of theme commercial space is displayed	The commercial complex model is determined, backward business models are eliminated, and differentiated space experience is gradually explored
Consumer Demand	Practical consumption-oriented	Trend towards recreational consumption	Entertainment consumption mainly	Towards experiential consumption
Spatial Patterns	Commercial pedestrian street, a small number of comprehensive department stores	Department stores, shopping centers	Department stores, shopping centers, to build a large number of commercial complex	Shopping center, commercial complex mainly
Distribution of Business Forms	Shopping and catering	Shopping, dining, leisure	Shopping, dining, leisure, service integration	All forms of business

Figure 2. The Commercial Space Model from 1990s to the Present

Source: Li (2022)

With the development of the economy and the concentration of urban population, intensive commercial complexes gradually replace traditional commercial spaces with single functions, organically integrate scattered urban functions, and play a relatively good interactive role, satisfying the complex modern life of the public. The social needs of the public have increased simultaneously, and they are no longer satisfied with the traditional social space with a single form, but have turned to a more life-oriented urban public space. The urban commercial space integrates and utilizes surrounding resources to form a variety of comprehensive commercial spaces that can be selected. Public demand also drives the economic development of surrounding areas.

At present, the domestic commercial space model is gradually changing from practicality to differentiation. With the upgrading of public consumption demand, different formats are introduced simultaneously, and the trend of experiential consumption is gradually emerging. However, most of the cases so far are experimental attempts, and consumers praise and criticize them. Not all of them have formed a more mature normative system. The development status of urban commercial space is different at home and abroad. Due to the differences in the development of cities in various countries and the differences in classification logic, a

large number of classification methods have been formed. The researcher's home country's "Retail Business Classification" standard divides commercial complexes into three types according to the scale and level of commercial complexes, namely: urban commercial complexes, regional commercial complexes and community commercial complexes.

Yue et al. (2018) divided commercial complexes into three types according to their location attributes: core area type, sub-center type and growth area type. The book "Commercial Complex: Agglomeration, Symbiosis, Breakthrough" refers to the commercial complex aggregation model for classification: functional aggregation, morphological aggregation and cultural ecological aggregation. The first is an urban commercial complex, which is mainly located in a relatively mature business district in the core area of the city. It has a wide range of radiation, strong target user stickiness, and strong brand influence. It can undertake consumer service needs in this area and even other provinces and cities. Most of them are landmark buildings in the city, mainly targeting fashion or high-end consumer groups, focusing on shopping, leisure and entertainment, supplemented by parent-child consumption. Among them, the shopping industry accounted for about 70%-85%; the catering industry accounted for about 10%-20%; the leisure and entertainment industry accounted for about 5%-10%; the service industry accounted for less than 5%.

The second is the regional commercial complex: located in the non-core area of the city, with high traffic accessibility, and a relatively stable customer group represented by the surrounding residents, mainly responsible for the commercial consumption needs of the surrounding areas, with a general scope of influence. This type of commercial complex is generally oriented to ordinary consumers, and the business types are evenly distributed, which can satisfy the various shopping, entertainment, leisure, and parent-child consumption of surrounding residents. Among them, the shopping industry accounts for about 50%-70%, the catering industry accounts for about 20%-30%, and the leisure and entertainment industry accounts for about 10%-20%.

Finally, there are community-type commercial complexes: located on the outskirts of the city but with a relatively high population density, they are mainly new towns and development zones in various cities. The positioning needs to refer to the

actual economic situation of the consumer groups in the area, increase the proportion of service formats, and create a one-stop lifestyle solutions. While meeting the functional requirements, it is also necessary to carry out thematic and differentiated design of the space to expand the radiation range for external consumers. Among them, the shopping industry accounts for about 40%-60%, the catering industry accounts for about 20%-35%, the leisure and entertainment industry accounts for about 5%-15%, and the service industry accounts for about 5%-10%.

Through the combing and analysis of three different types of commercial complexes, it can be found that different geographical locations, scale levels, customer groups and business format distributions will lead to vastly different design ideas, which play an important guiding role in the design result orientation. But at the same time, as an important part of urban commercial space, various types of commercial complexes also have their commonalities. Combined with the above research findings, the common characteristics of commercial complexes in urban commercial space are summarized into the following three points:

First, the locations of commercial complexes are mostly selected as transportation hubs or relatively developed areas, such as urban CBDs, core business districts or new development areas. The advantage of accessibility can well attract consumers in surrounding areas, whether they have cars or take public transportation, they can go there more conveniently and quickly.

Second, commercial space, as a collection of various business forms and functions, will inevitably lead to a relatively large building volume, with most floors ranging from 4 to 7 floors, and most commercial areas ranging from 50,000 to 200,000 square meters. Because of the huge capital investment and long-term returns, most developers choose to use new construction technologies that have a long-life cycle and are conducive to sustainable development, which is beneficial to the creation of a commercial space environment.

Third, commercial space is not simply a superposition of business types, but an organic integration of various urban functions. The combination of business forms is based on complementarity or mutual benefit. It can either complement the current regional urban functions or promote the economic and cultural development of surrounding areas. It can exert its initiative in commercial space and stimulate urban

vitality. Each commercial space has its own independent and complex internal traffic system. The traffic streamlines of different consumer groups are divided internally through reasonable planning of different business spaces, effectively diverting traffic, and maximizing resource utilization. The exterior integrates urban public transportation and roads, and is mostly presented in the form of commercial pedestrian streets and urban underground commercial spaces, creating an indoor-outdoor transitional space with rich moving lines.

The organizer of urban cultural activities in Dalian, installation art usually exists in shopping malls and shopping malls in urban commercial spaces. This part of the area is one of the most common places in Dalian's urban commercial spaces, and it is also an immersive new media installation. One of the main exhibition places of art. In shopping malls and shopping centers, you can often see large LED screens, interactive projection devices, virtual reality experience areas, etc. These technologies and devices are used to attract customers, provide entertainment experience, and increase the attractiveness and vitality of commercial places. Of course, there are theme parks, playgrounds, sightseeing and tourist areas, large-scale exhibition activities and art exhibition spaces, etc. In the urban commercial space, new media installation art not only adds new visual and experiential effects to commercial activities, but also creates a more creative and dynamic atmosphere for the city, enriching urban cultural activities. From this, the historical changes, current situation and future development direction of Dalian's urban commercial space construction can be learned from the field investigation of Dalian Planning Exhibition Center. (Li, 2022)

2.1.3 Development and Evolution Process of Dalian Urban Commercial Space Layout

This section aims to introduce the historical development background of Dalian's urban commercial space. Dalian City has always been based on the old city, a strip-shaped single-core structure that continues to spread to the west and north. With the development of the urban economy, it is developing into a multi-core urban spatial structure, and commercial space is the city that spreads to multiple centers. Therefore, the agglomeration and diffusion of commercial outlets are also of great significance to the study of urban spatial structure.

Dalian, also known as Bincheng and the Romantic Capital, is a sub-provincial city, a planned city, and a megacity. It is located in the south of Northeast China, at the southern tip of the Liaodong Peninsula, bordering on the Yellow Sea in the east and Bohai Sea in the west. It is an important coastal area in the northern region approved by the State Council. The central city of Dalian, the name of Dalian, originated from Dalian Bay and began in modern times. In 1880, Beiyang Minister Li Hongzhang mentioned "Dalian Bay" in his memorial about the construction plan of the Dalian Bay military port. It is said that the place name of Dalian is the pronunciation of "Dalini". "Dalini" is Russian and means "far away". The origin of "Dalini" is that after Dalian became a leased territory of Russia, the place was named Dalini according to the order of Tsar Nicholas, and it was opened as a free trade port at the same time. During the Japanese occupation, it was called Dalian in February 1905. After liberation, on April 1, 1949, Dalian and Lushun were collectively called Luda City. In February 1981, it was renamed Dalian City with the approval of the State Council.

The development of Dalian's urban commercial space can be divided into five periods: the Qing Dynasty period from the beginning of the 19th century to the end of the 19th century, the Tsarist Russian Concession period and the Japanese occupation period from 1898 to 1945, and the single-core urban core commercial space in Dalian from 1958 to 1980. Structural period, from 1980 to 1999, Dalian's dual-core urban commercial space structure period and the multi-core urban commercial space form period from 2000 to the present.

The intersection of multiple cultures during the Qing Dynasty. During the Qing Dynasty, the Dalian area was the settlement of Manchu, Han and other ethnic groups, so it formed the characteristics of the intersection of multiple cultures. The Manchu culture and the Han culture merged with each other, forming a unique local cultural style. During the Qing Dynasty, Dalian Port gradually emerged and became one of the important fishing and trading ports in Northeast China, attracting businessmen, immigrants and tourists from all over the world. The cultural exchange and integration of people from different regions and different nationalities has enriched Dalian's urban culture. At the same time, port trade also brought commercial culture to the early urban space of Dalian. With the development of Dalian Port, port

trade gradually prospered and became an important pillar of Dalian's economy. Port trade has brought a rich business culture. Merchants established markets and streets near the port to exchange goods and supplies. All kinds of commodities and goods were traded here, business activities flourished, and commercial culture began to take shape. The business ethics, trading habits and business etiquette of merchants have had a profound impact on Dalian's urban culture.

From the perspective of overseas cultural influence, as a port city, Dalian in this period was closely related to overseas trade, and overseas culture was gradually introduced. The exchanges of overseas businessmen and foreign envoys brought foreign culture and customs, making Dalian culturally international. At the end of the Qing Dynasty, Dalian became the focus of competition among the great powers, and was successively occupied by Japan and Russia, and foreign cultures and influences became more profound. This kind of cultural exchange and integration has provided new impetus for the development of Dalian's urban culture. As it is located in the Bohai Bay, Dalian is a typical fishing port city. Fishermen's culture and awareness of the sea intensified during this period. The way of life and work of the fishermen, the construction and management of fishing ports all reflect a strong marine culture. Fishing port culture and marine awareness have become an important part of Dalian's urban culture, affecting the lifestyle and values of local residents.

To sum up, the commercial space in the early days of Dalian City was mainly concentrated in the markets and streets near the port, and the main form of commercial activities was port trade. Commercial and trade activities are mainly concentrated in the coastal area, today's southern and southwest areas of Dalian City, including the surrounding areas of Zhongshan Square and Changjiang Road. These areas were the commercial centers of early Dalian. During the Qing Dynasty and the early port trade period, Dalian's urban culture showed the characteristics of diverse convergence, prosperous business, overseas influence and marine awareness. These cultural factors have laid a solid foundation in Dalian's long history, and have had a profound impact on the subsequent urban cultural development.

During the Russian Concession period from 1898 to 1904, the city of Dalian was relatively small in scale during this period, and the internal functional divisions of the city were relatively simple. The layout of the streets in the urban area was shaped

like a spider web, and commercial public buildings were basically located in Zhongshan Square and Qingniwa Bridge. Circular or semicircular squares are arranged in transportation hubs and important general new locations, with dense crowds, becoming the early urban commercial space area of Dalian.

During the Japanese occupation period from 1904 to 1945, the urban area gradually expanded and expanded westward, making Xigang the administrative center of Dalian. The urban commercial center is laid out at Qingniwa Bridge, and the city as a whole presents a belt-shaped development trend. Basically, from the regional spatial structure of the road network in the east, the residential areas in the west and south, and the industrial areas in the west and north. Under the rule of Japan and Russia, Dalian's urban commercial space has undergone significant changes. Two commercial districts, the "Japanese Concession" and the "Russian Concession", were formed, which are now Zhongshan District and Xigang District of Dalian. There are a large number of foreign shops, banks, warehouses and other facilities in these concessions, which were called prosperous commercial areas at that time. As the core business district of the "Japanese Concession", Zhongshan Square was an important center of Dalian's commercial space at that time, and thus established the embryonic form of the urban commercial space center in the second period of Dalian.

From 1958 to 1980 was the third stage of the development of Dalian's urban commercial space. (Figure 3) During this period, Dalian's urban commercial space began to recover and develop. Dalian's commercial district was relatively orderly. Affected by the economic policies of New China, state-owned enterprises and collective economies Organizations and cooperatives became the main economic actors. At the same time, Dalian's urban commercial space still has a single-core commercial space structure. The formation of the commercial and financial center of Zhongshan Square and the establishment of the Youhao Square Cultural Center have made Qingniwa Bridge and Tianjin Street the city-level commercial centers of Dalian, and have also driven the nearby Victory Square, Minsheng Street, Shanghai Road, Youhao Road and other secondary commercial centers are formed. During this period, an extensional single-core development model was consistent with the expansion of urban commercial space. The structural types of urban space and commercial space

are basically based on a single-core center structure, and the degree of aggregation of commercial space is higher in urban space. (Zhang & Han, 2011)

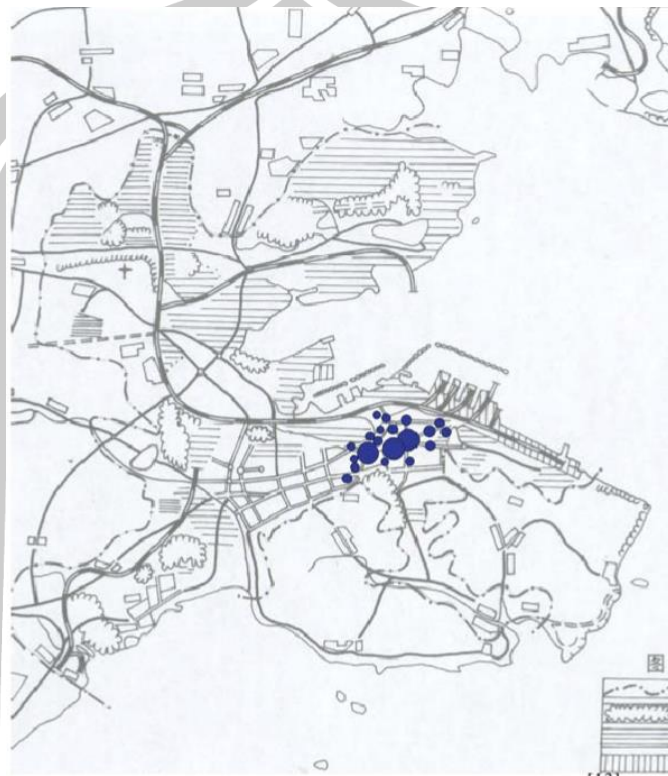


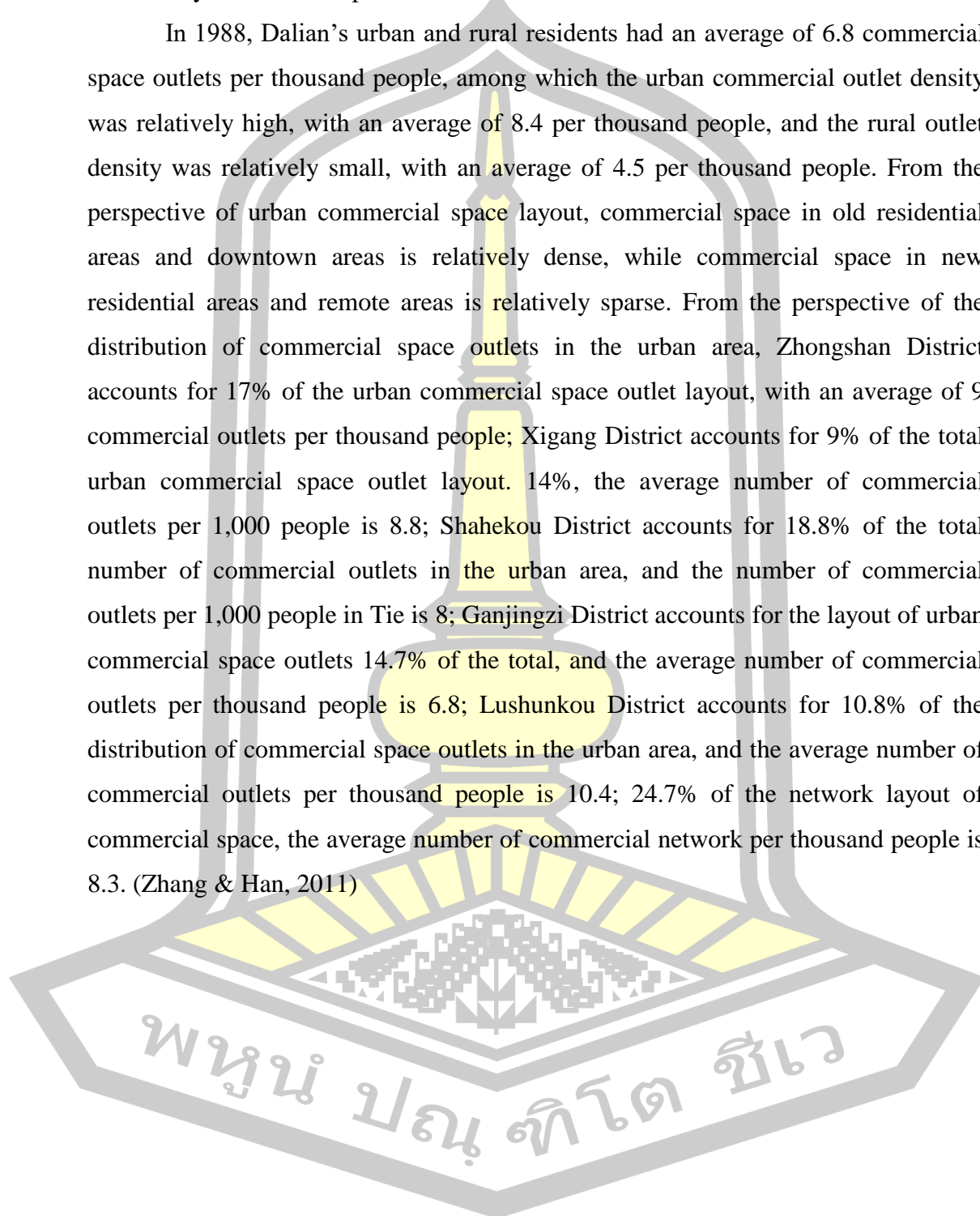
Figure 3. 1958-1980 Distribution Map of Major Commercial Space Outlets in Dalian City

Source: Zhang & Han (2011)

After the reform and opening up, Dalian City experienced rapid urbanization and the adjustment of administrative divisions. The area of urban space expanded rapidly, and the form of urban space also began to change from individualization to grouping and regionalization (Figure 4). Dalian's urban space is evolving from a single-center city to a dual-core urban area, continuing to expand westward and northward. Two city-level commercial space centers are formed, Tianjin Street and Qingniwa Bridge in Zhongshan District in the east, and Xi'an Road in Shahekou District in the west. The original single-core commercial space layout is broken, and the dual-core commercial space layout is used as the urban commercial center. At the

same time, secondary commercial centers such as Jinnan Road, Stalin Road, and Wucui City in the Development Zone have also been formed.

In 1988, Dalian's urban and rural residents had an average of 6.8 commercial space outlets per thousand people, among which the urban commercial outlet density was relatively high, with an average of 8.4 per thousand people, and the rural outlet density was relatively small, with an average of 4.5 per thousand people. From the perspective of urban commercial space layout, commercial space in old residential areas and downtown areas is relatively dense, while commercial space in new residential areas and remote areas is relatively sparse. From the perspective of the distribution of commercial space outlets in the urban area, Zhongshan District accounts for 17% of the urban commercial space outlet layout, with an average of 9 commercial outlets per thousand people; Xigang District accounts for 9% of the total urban commercial space outlet layout. 14%, the average number of commercial outlets per 1,000 people is 8.8; Shahekou District accounts for 18.8% of the total number of commercial outlets in the urban area, and the number of commercial outlets per 1,000 people in Tie is 8; Ganjingzi District accounts for the layout of urban commercial space outlets 14.7% of the total, and the average number of commercial outlets per thousand people is 6.8; Lushunkou District accounts for 10.8% of the distribution of commercial space outlets in the urban area, and the average number of commercial outlets per thousand people is 10.4; 24.7% of the network layout of commercial space, the average number of commercial network per thousand people is 8.3. (Zhang & Han, 2011)



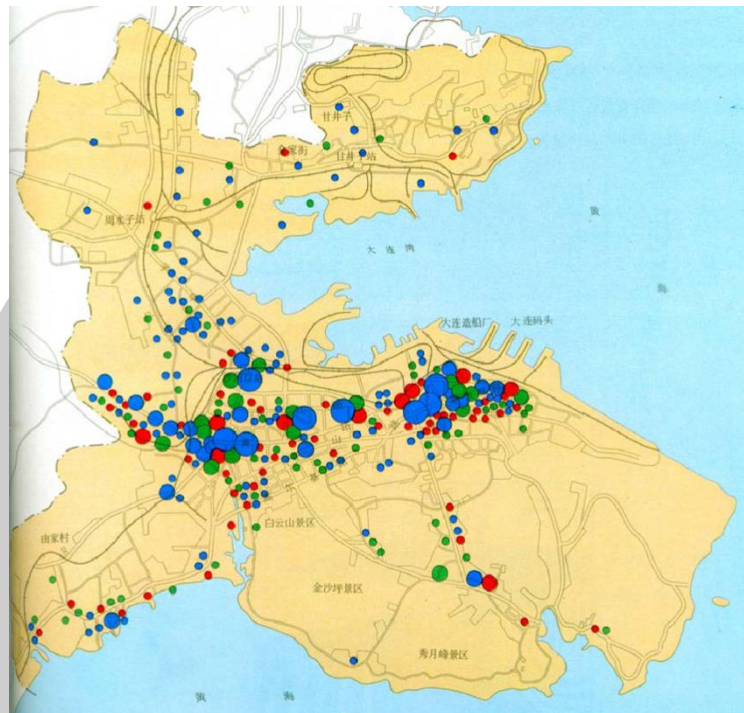


Figure 4. 1980-1999 Distribution Map of Urban Commercial Space Outlets in Dalian City

Source: Zhang & Han (2011)

With the development of the times, the structural form of Dalian's urban commercial space has continued to develop into a multi-core urban form after 2000 (Figure 5), and with the continuous expansion of urban space, large commercial centers have continued to gather and spread, including abandoned industries. With the commercialization reform of the district, the number of nodes with commercial value in urban space is increasing continuously. This kind of commercial space node is also the gathering point of people flow, logistics and vehicle flow. Various directions jointly promote the formation of Dalian's urban commercial space multi-core urban area.

Currently, Dalian has formed two city-level commercial centers, twelve regional commercial centers and more than thirty community-level commercial centers. These commercial centers present obvious structural characteristics of hierarchical circles, which are very similar to the structural form of urban space development, that is, the hierarchical system of multi-core commercial space structure. First, the two city-level commercial centers are Qingniwa Bridge in

Zhongshan District and Xi'an Road Commercial Center in Shahekou District. It mainly includes the "Qingniwa Bridge - Victory Square - Commercial Pedestrian Street of Tianjin Street" business district in the south of the station and the "Caishi Street, Russian Style Street" business district in the north of the station. The commercial center of Xi'an Road in Shahekou District is located at the intersection of Xinggong Street and Xi'an Road. It is currently the most prosperous and busiest commercial gathering place in Dalian.

Secondly, twelve regional commercial centers. It mainly includes Sanba Square and Lingqian regional commercial centers in Zhongshan District, Olympic Plaza regional commercial center in Xigang District, Chunliu District in Shahekou District, commercial centers in Malan District and Heishijiao District, Ganjingzi District. There are four regional-level commercial centers on Zhonghua Road, Golden Triangle Market, Laoganjingzi Department Store and Zhoushuizi International Airport, and three regional-level commercial centers in the surrounding areas, Lushunkou Old Town, Development Zone and Jinpu New District.

Finally, there are more than 30 community-level commercial centers. Most of the community-level commercial centers target the residents around the community as the main target customers, and mainly provide basic consumer services. The scale of its business is small, mainly in the form of small convenience chain stores, medium-sized supermarkets, farmers' markets, morning markets, etc., with a small radiation radius.

The commercial space of Xiongdong Street in the Xi'an Road business district of Shahekou District, Dalian. The geographical location is mainly located in the south of Xiangzhou Road, Shahe District, in the Bingshan Huigu Cultural Industry Park. It is China's first metaverse immersive new media device form and a commercial space for a new urban cultural tourism project. Dalian Bingshan Huigu is a smart industrial park established in 1930 after the relocation of the Dalian Refrigeration Factory. Before 2020, as one of the city landmarks in the minds of the older generation in Dalian, it will be dominated by industry, empowered by culture, and inherited by history, to update and upgrade the industrial structure of the old industrial zone, and to create innovations in cooling and heating energy. R&D base, technology empowerment platform, and integration of cultural and creative clusters. However,

the impact of the new way of thinking and the imprint of the old industrial era has further strengthened the professional and creative functions of the industrial park. However, the high level of creativity has also stopped ordinary tourists from visiting to a certain extent. (Zhang & Han, 2011)

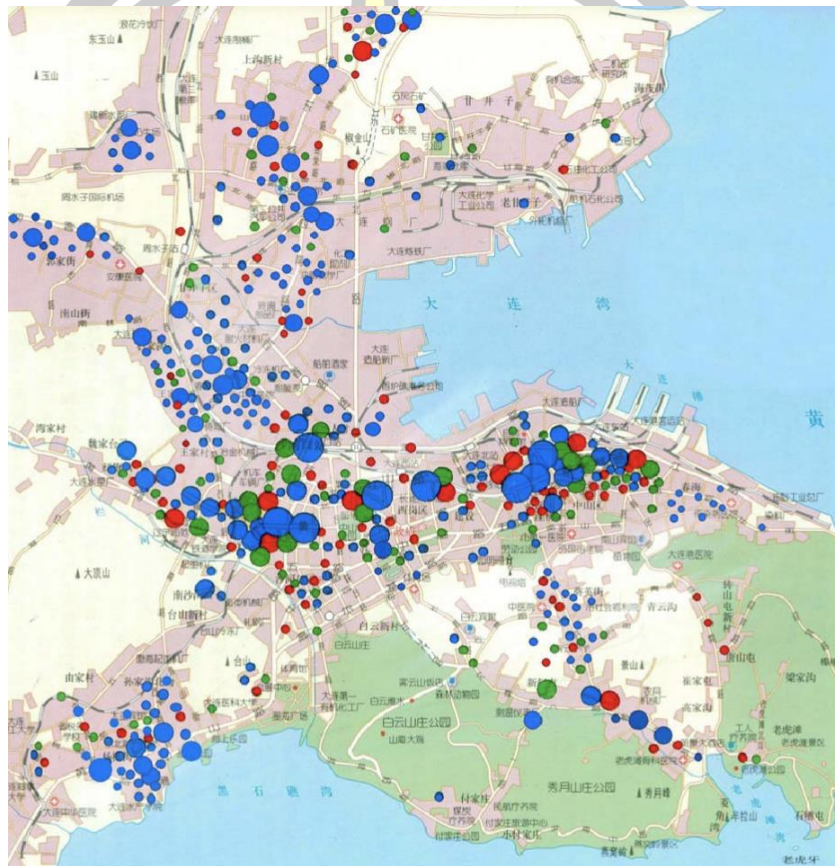


Figure 5. From 2000 to Present the Distribution of Commercial Space Outlets in Dalian City.

Source: Zhang & Han (2011)

The research on commercial development trend from different angles, sorting and summarizing the viewpoints, found that the main business development trends are as follows: First, commercial development tends to be humanized and convenient. Commercial development depends more on the improvement of consumption level. In order to promote consumption, the commercial development process increases the

attention to consumers, the commercial layout is more convenient, and the commercial facilities are more perfect. Second, the trend of commercial scale expansion is obvious. Since China is in the stage of rapid urbanization development, the development of urbanization needs the support of commerce, so the scale of commerce will expand rapidly, and commerce will develop rapidly. Third, commercial distribution tends to be clustered, market concentration is gradually increased, commercial competitiveness is enhanced, and the scope of commercial radiation is broadened. Fourth, the combination of tangible and intangible transactions. As an emerging business model, e-commerce has greatly changed people's concepts and ways of shopping and consumption, severely impacted traditional commerce, and gradually developed into a situation where traditional commerce and e-commerce coexist. The development of modern commerce requires the support of e-commerce. Business development adopts a development method that combines tangible and intangible transactions. Fifth the development of green business. With the development of the economy, environmental constraints are becoming more and more obvious. Environmental factors must be considered in the future business development process. Green business is an inevitable trend of business development. (Zhang & Han, 2011)

2.1.4 Dalian Culture

Dalian is located at the southern tip of the Liaodong Peninsula. Like a sharp sword, Dalian divides the sea into the Bohai Sea and the Yellow Sea. Dalian's characteristic culture. Dalian is "born from the sea and prospered from the port", which reflects the true history of Dalian originating from nature and developing nature. Developing Dalian's urban marine culture, coordinating the relationship between people and the ocean, promoting regional economic development, and enhancing the city's influence have practical significance for today's urban construction and development.

Poetry is an important embodiment of marine culture. The earliest poems in Dalian are "Liaodong Xingbu Zhi" and "Yajiang Xingbu Zhi" written by Wang Ji, a famous writer in the Jin Dynasty. They contain 83 poems, recording the Liaodong Peninsula and Dalian's beautiful coastal landscape, colorful pastoral scenery and outstanding marine figures.

Dalian people face the ocean, face the sea breeze, hear the sound of the waves, and their production and life are closely connected with the ocean. They are full of "sea oysters" and reflect the unique marine cultural temperament of Dalian people. "The Charming Sea" written by the famous Dalian writer Deng Gang, the movie script "The Man Touching the Sea" written by Dali (the couple), and "The Big Wharf" written by Xu Duo are all full of sea oysters and are representative works of modern marine literature in Dalian. Promote the development of Dalian marine culture. The well-known Dalian painters Yang Naimei and Zhao Xingbin specialize in painting the sea, held a special ocean oil painting exhibition, and published seascape oil painting collections "Once Upon a Time in the Sea" and "I and the Sea" respectively, reflecting the distinctive Dalian characteristics and occupying an important position in Chinese seascape oil paintings.

The musical "Sea Blue" choreographed by the Dalian Song and Dance Troupe showed the joy of the people in Bincheng and was welcomed by the people. Photographer Liu Jie's "Sea Panda - Spotted Seal", showing the unique rare animals in Dalian, won the gold medal and was published in National Geographic.

In 2009, under the planning, arrangement and direction of the famous director Yang Daoli, Dalian City successfully held the main event of "China Navigation Day". The mass participation and wonderful organization activities have become a successful model in previous Sailing Day activities."

In 2011, the main venue of "World Ocean Day and National Ocean Publicity Day" was successfully held. The preface of the book "Big Country" on China's century-old ocean thought history reads: "Compared with previous grand events, this year's ocean people's The grand event brings some solemnity, some excitement, some thinking, some yearning, she is so beautiful and unique." Dalian has rich marine resources, a large number of sea-loving talents, and many cultural products, which can completely provide Dalian, a marine city. Play a greater positive role.

Dalian is a modern coastal city, and marine culture should become the mainstream culture of the city. However, compared with cities known for their marine culture at home and abroad, there is still a lot of room for improvement in Dalian with the idea of boosting the development of the marine industry with the concept of marine culture.

Famous people in the scientific and literary circles pointed out: "When the human ocean consciousness is sublimated, it is the time when the harmonious civilization ocean of the human sea comes." "The ocean is our starting point and final destination, our imagination and reality, and our history and future", "Chinese civilization must enter a new era of marine civilization, and the ocean is the source of our creation."

Throughout the ages, Dalian people have shared weal and woe with the ocean. The ocean is the city's future hope and the inspiration and source of humanistic creation. Dalian's culture needs to further "face the ocean and look forward to the future". Get some fishy smell from the sea, change the embarrassing situation of "standing on the beach and writing about the land, eating seafood and forgetting history", "unfamiliar with the extremely rich marine cultural resources, unable to write about it", in the historical tide of the world's ocean revolution, I hope that more Dalian people will write and create blue chapters of the great era. (Lu, 2021)

About Dalian sea-rail transport culture:

Sea-rail combined transport has huge development potential in Liaoning Province and has a positive impact on the regional economy. This multimodal transport method connects sea roads and railways to achieve efficient transportation of goods through container transportation. Liaoning Province is committed to building a high-quality multimodal logistics system by promoting sea-rail combined transport, strengthening the construction of internal and external channels, and improving the sharing of information resources. This will not only help promote regional economic development and promote trade cooperation, but also bring more development and cooperation opportunities to Liaoning Province. However, sea-rail combined transport has not yet been fully developed in China, and its mechanisms and infrastructure still need to be improved. The financial impact of further development of intermodal transport in Liaoning Province may be positive, but government investment and policy support are also required to ensure its smooth implementation and reach its full potential.

Dalian Port is one of the first ports in the country to develop sea-rail combined transport, and it is also the first sea-rail combined transport Internet of Things in Northeast China. The number of container trains at Dalian Port has exceeded 50 per

week, and a multimodal transport network covering the Northeast is under construction. (Gautrin, 2017)

About Dalian wild sika deer culture:

Wang (2002) said the earliest trace of sika deer was discovered in the urban area of Dalian, and it is speculated that it belongs to a population that escaped from breeding, and they were speculated to belong to a population that escaped during breeding. According to the unified understanding of the biological community, artificially domesticated wild animals can be recognized as wild species if they are released into nature or escape into the wild and reproduce for three generations. According to this standard, the sika deer in Dalian is a standard wild animal. The herd of wild deer formed in Dalian, to some extent, can be a kind of wild reintroduction of the original place, which provides a possibility for restoring the biodiversity of the Liaodong Peninsula. Dalian's continuous hilly terrain and the vast woodland and green fields in the urban area provide enough space for wild deer to multiply. This makes Dalian's wild deer live in the center of the city, between mountains and seas, and Dalian has become the only one in China. Cities with wild sika deer populations within urban limits. According to statistics from Dalian Wilderness Nature Conservation Center, a total of 37 wild sika deer were found in different areas of the city in the spring of 2004, and nearly 70 were found in the census at the end of 2016. The current population size should be around 200. In the mountains and forests of Dalian City, these wild sika deer have formed multiple independent herds.

There are two versions of the origin of the Dalian sika deer. Some say it escaped from a forest zoo, while others say it escaped from a farm. No matter which one is said, it can be recognized as a wild species if it returns to nature and reproduces for more than three generations. The sika deer population in Dalian has been bred for three generations, so it is determined that the sika deer in Dalian are wild. (Wang, 2002)

2.2 Knowledge of Immersive New Media Installation Art

2.2.1 Immersive Art

"Immersive experience", or immersion, is one of the important research contents of positive psychology. It usually refers to a state in which an individual

concentrates wholeheartedly on a certain scene to achieve selflessness. It is a feeling experienced by an individual that gives happiness and excitement. Immersion means that people focus on the target situation created by the designer, using sensory and cognitive experiences to create an atmosphere that makes participants feel happy and satisfied, thereby temporarily forgetting the real-world situation. "Immersive" needs context based on time and space environment. In terms of time, it is divided into day, night, present, and past, and in terms of space, it is divided into indoor, outdoor, real, and virtual. When creating an immersive experience environment, it is necessary to provide an immersive feeling in terms of technical supply, and in terms of experience requirements, it is necessary to customize the immersive experience of scene interaction.

The term "Immersive" was first used to describe situations involving virtual reality, media arts, video games, and other technological experiences. Its development can be traced back to the 1990s, when virtual reality and interactive media began to attract attention. (Li, 2021)

Immersive experience has appeared in the United States as early as the middle of the last century. Due to the limitations of technological level, digital interaction design was not integrated into it at that time. With the development of technology, interaction gradually emerged. It was developed by the American NeXT SCENE immersive experience design media and service company. The development process of immersive works was mentioned in the "2019 Global Immersive Design Industry Development Report" released. In the 1950s, American Renaissance Festival amusement park participants dressed in Elizabethan costumes and paraded through the streets. In the 1960s, the prototype of virtual reality technology was born, and filmmaker Morton Heilig built "experience theater". In the 1970s, the Haunted Mansion and Knott's Haunted Mansion appeared, and the modern haunted house industry was born. In the 1980s, the marching drama "Tamara" gave birth to the sprout of immersive drama. In the 2000s, immersive theater became the focus of attention, with the marketing promotion of the movie "Artificial Intelligence". In the 2010s, the emergence of the escape room industry marked the combination of digital puzzle games and real-life adventures (Brigante, 2019)

Immersive experience is a new form of Internet celebrity experience, which is common in the entertainment, exhibition and cultural travel industries. It can bring varying degrees of value to participants such as entertainment, social interaction, and growth. As an experience, it changes the traditional offline and passive experience form, and forms immersive scenarios, multi-sensory surrounds, interactive narratives, etc. through various personalized simulations. "Immersive experience" is committed to providing the audience with a sense of presence, interactivity, and imagination in story construction. This "immersive" multi-sensory experience allows participants to instantly escape from the real environment and immerse themselves in the world of movies and games. Or in a dream-like scene, feel the protagonist in the environment, thus generating a sense of on-the-spot pleasure. Immersive experience is the contemporary relationship between art and technology. It is a combination of integration, diversity and cross-border. The purpose of art is to realize the experience of dramatic scenes, and the purpose of technology is to realize the digital experience of entertainment technology. (Li, 2021)

Immersive experience is a concept that has only emerged in recent years. The word immersion is explained in "The Laws of Design" in such a way that people can focus on the current target situation (created by the designer) to feel pleasure and satisfaction, and forget the real world situation. Immersive experience mainly includes sensory experience and interactive experience. Sensory experience mainly refers to sensory experience based on vision, hearing, smell, taste, and touch. Interactive experience mainly refers to interactive experience based on audience-work interaction, audience-audience interaction, etc. (Ren, 2019)

Currently, there is a lot of research on using digital interactive art to achieve immersive experience. Based on the analysis of the current situation of theoretical research, creating an immersive experience of interactive art needs to be based on a large cultural background, and build a story around the theme and IP. Starting from the goal behind the story, and then refining the core value of the IP, it needs to be broken up and reconstructed. , transforming into an immersive experience of the theme world, combined with interaction to enhance the visual experience, realizing the immersive narrative method of sensory overlay to drive the exploration process of

the participants, and finally achieving the improvement of the operational ability of business theming and consumption scenarios.

Domestic immersive experience only existed as a kind of "show" in the cutting-edge exploration period. In 2004, Zhang Yimou directed the first domestic landscape performance "Impression·Liu Sanjie". In 2008, he created "Beijing Eight Minutes" for the Beijing Olympics. Due to the limitations of science and technology, the initial immersive experience did not integrate digital interactive art, and the immersive experience lacking interactive integration appeared "silent". An interactive and immersive experience can not only enrich the decorative space, but also enhance the atmosphere of the scene and the sensory effects of the viewer. In addition, in the past two years, the immersive exhibition of Magnificent Still in the World has absorbed the "imagery" elements from ancient paintings, reinjected them into modern aesthetic language, and interacted with technology to present the scenes and emotions of the paintings three-dimensionally, making the audience immerse themselves in the ancient paintings, creating a cross-century empathy with the stories in it.

Interactive artworks with immersive experience abroad were produced earlier than in China. Immersive experience works were first produced in non-narrative films, as artists used this to shorten the distance between the work and the viewer. According to the analysis of NeXTSCENE-2020 Global Immersive Design Industry Development White Paper, the immersive industry in the UK is developing rapidly, while the US is in its infancy.

In May 2017, Disneyland's "Pandora: Avatar World" theme park officially welcomed visitors. The immersive experience of the theme park allows visitors to walk in an illusory reality, like a "dream" but not a dream. It creates the ultimate immersive experience with IP implantation and technology empowerment, and human-to-human interaction increases immersion. In 2019, FLOWERS BYNAKED, an immersive interactive art exhibition in Japan, brings enjoyment to viewers with decorative art, projection screens, visitor interactions, smells and music. Through human movements, changes in images, music and smells make viewers themselves Use your senses to feel the fleeting life of flowers. (Li, 2021)

One of the early representative immersive exhibitions in China was the large-scale art installation "Rain Room" held at the Yuz Museum in Shanghai in 2015. Then

in 2017, Shanghai Long Museum (West Bund) launched “The Art of Light” created by James Turrell. In 2019, TeamLab, an art group from Japan, held "The World of Water Particles in Oil Tanks" at the Shanghai Oil Tank Art Center, etc., all of which represent a novel art form today and a unique exhibition that arose accordingly method, that is, an “immersive exhibition” based on immersive experience. The so-called immersion here is to let the viewer focus on the immediate situation and forget the real world. In a sense, it is to experience the temporary absence of the body with a high concentration of spirit. (Fu, 2023)

2.2.2 Culture of Media Art

The Media City by Scott McQuire is a book that explores the relationship between urban space and media technologies. The book examines how media technologies affect the design and development of cities, and how cities, in turn, shape the use and meaning of media technologies.

Another important theme of the book is that urban spaces shape the use and meaning of media technologies. According to McGuire, the design and organization of cities has a major impact on the way media technologies are used and understood. For example, he points out that the rise of television and radio in the mid-twentieth century was closely related to the growth of urbanization and suburbanization because these technologies allowed information and entertainment to be spread over long distances.

McQuire (2008) "The term media city aims to highlight the role of media technology in the dynamic production of contemporary urban space." Referring to media technology, McGuire sorted out the technologies that play an influential role in the development and change of urban space from a historical dimension: Photography technology in the mid-19th century, movies in the early 20th century, electronic and digital media, etc., are all manifestations of technology-driven society and the integration of technology and society.

How does media technology explain urban space? Starting from the most familiar things around us, there is nothing more than electronic maps. Taking Baidu Maps as an example, relying on network technology, the image of the city becomes more and more visualized and concrete in our repeated contact with the map. Our understanding of the geographical outline of the city, the layout of the city streets, the

understanding of the commuting or going out routes, all of which are constantly shuttled in the map and the city to obtain a personalized cognition.

Associative space is the name given to the oscillating spatial shaping. As media become more and more mobile, measurable and interactive, new modes of social experience in the media city have the characteristics of associative space.

McQuire argues that relational space is a social space shaped by the contemporary imperative to actively establish operating social relations across heterogeneous dimensions. What defines this state of affairs is the growing need to recognize the unique position of each social actor and the context of each experience, as well as the 'saturation' of context.

Throughout the book, McGuire cites numerous examples from various time periods and locations to illustrate his arguments. He has studied the role of media technologies in the development of modernist architecture, the rise of shopping centers and the emergence of digital cities, among other things.

Overall, *Media Cities* provides a fascinating and insightful analysis of the complex interplay between media technologies and urban spaces. It is an invaluable resource for anyone interested in the history and future of media and urbanism and provides a rich and nuanced perspective on the relationship between these two key aspects of contemporary life.

Marshall McLuhan is a well-known media thinker in Canada. McLuhan (1994) wrote this book in 1964 and put forward the famous "Three Theories of Media", which is that the medium is the message, the medium is the extension of the human, the cold medium and the hot medium.

He emphasizes that media plays a role in shaping and controlling the scale and form of people's composition and actions. Paying attention to the important influence of media on the development and change of human society is more inclined to the so-called technological determinism. From this perspective, the new media not only extends the human sense organs, but also creates a new communication environment, which in turn affects the way people think and behave. Therefore, the shaping power of the media lies in itself, and the media itself is the real meaningful message.

Of course, the biggest feature is that McLuhan put forward a unique perspective of studying media, that is, media is a generalized concept, not only

including narrow media such as spoken language, writing, newspapers, radio, and television, but also human life. All tools used in the game, such as roads, clothing, houses, currency, clocks, weapons and other items. McLuhan takes human senses as a fulcrum and establishes corresponding extended explanations for each medium, thus constructing a huge torrent of media theories that spans time and space.

The division of hot and cold media is only superficial, and the more profound essence is that the media that extend different human organs will correspondingly affect or even change the cultural and social changes at that time. Looking at society and history from this perspective, we can appreciate the important role of media in the process of human development.

The central point that McLuhan wants to express can actually be summed up in one sentence, that is, the medium is the extension of man, and the medium is the message, and the hot and cold media are just ideas extended from this, or the medium is the extension of man. A form of expression of an idea. They tend to be "technological determinism". Although they face up to the transformative power from the excellent domestic and foreign cases as analysis, select foreign cases such as the Japanese teamlab team and the American Anadol team and other installation art in areas touched by new art trends as case analysis. The domestic area will analyze the installation art in cities from developed areas such as Beijing, Shanghai and Shenzhen. It is still in the review stage. From the excellent domestic and foreign cases as analysis, select foreign cases such as the Japanese teamlab team and the American Anadol team and other installation art in areas touched by new art trends as case analysis. The domestic area will analyze the installation art in cities from developed areas such as Beijing, Shanghai and Shenzhen. It is still in the review stage. of technology in society, they also ignore or weaken people's subjective initiative. In complex social relations, technology is only a dependent variable, and it is naturally not comprehensive and scientific enough to look at problems from an isolated perspective.

Chen (2016)'s "Outline of New Media Art History" is a work that conducts in-depth discussions on new media art. According to relevant literature, this book was published in 2007. Among them, Chen Ling's definition of new media art is: New media art refers to artistic works created using all media and technical means. These

media are not only the various technologies we see every day, but also include other forms.

The book not only expounds the basic theory of new media art, but also reveals its relationship with human experience. In it, Chen Ling emphasized how human beings use their own invented technology to expand the sensory fields such as vision, hearing and touch.

Chen (2016)'s work undoubtedly provides an in-depth and comprehensive historical outline for the study of new media art, and provides valuable reference materials for researchers and scholars. Judging from the attention and citations it has received, it has important academic value for the research of new media art.

There is a relevant culture of immersive interactive media design, Taking the Teamlab Borderless Digital Art Museum, a Japanese Installation artwork team, as an example, the chapter analyzes its research and the development trend of related industries, art and technology, content and subject, vision and form, and summarizes the characteristics of multimedia and cross-border integration of immersive Interaction design works. The immersive experience of interactive artworks has changed the display form of traditional media, emphasizing the interactivity between participants and the work, others, and space. The immersive experience breaks the public's understanding of traditional art exhibition methods, guiding viewers to immerse themselves in the space to experience. This experience can create a different dimensional visual experience for the audience. At the same time, Teamlab's extensive case studies on the application of digital media are analyzed to customize the immersive experience for viewers. It also provides help for the design and application of new media Installation artwork in urban commercial space. (Li, 2021)

It mentions the development trend of immersive experience in interaction design. On the whole, immersive interaction design works are a collection of virtual reality, new display technologies, etc. The distinctive feature of this deep integration of culture and technology is also that it is better than ordinary an important reason why works of art are more attractive. Based on the analysis of Teamlab Borderless immersive Interaction design, theme content and creative subject, search for visual space and expression form, and integration of digital art and scientific art are the basis of immersive experience of Interaction design. Most of Teamlab's works focus on

natural imagery. Using works to explore the relationship between humans and nature, as well as between humans and the world. Nature is the topic that Teamlab wants to explore the most. From traditional theater projects to today's heavily immersive augmented reality innovation experience, it benefits from the concept of cross-border collaboration and integrated innovation. At the same time, Teamlab creates a digital artistic conception in both visual space and expression, breaking the traditional static and silent way of viewing, emphasizing the stimulation of the viewer's senses. Immersion is an important form of expression in digital Interaction design. The interpretation of culture enriches people's living situation, and the expression of art shapes the viewer's sensory experience and thinking identity. It provides new ideas and concepts for constructing new media artworks.

Looking at home and abroad, a lot of beneficial exploration and research have been done on new media installation art and urban public management space. There are more than 190 related literatures. In the past five years, related papers and literature conferences have shown an increasing trend of attention, and a lot of theoretical foundation and practical experience have been accumulated.

Foreign countries have long begun to study the important position of interactive and new media installation art in the process of urban economic development and its role in production. In the 1990s, artists focused on social issues, especially contemporary social hotspots, for example, racial discrimination, environmental protection, war and peace, religion, and racial conflicts. In the 21st century, due to its unique interactive, experimental and high-tech characteristics, it has developed rapidly and has become an avant-garde and multidisciplinary art category.

Installation art originated in the West, and its domestic development was led by Taiwan, China, because it developed earlier than the inland areas with the support of the local government and enterprises. The mainland new media installation art has gradually developed and grown following the trend of art thought in 1985. Relevant domestic art research books provide detailed descriptions of the concept, characteristics and historical knowledge of new media installation art, and focus more on scientific and technological research. At present, there are few domestic studies on the application of new media installation art design. Among them, the literature on the

application of new media installation art in urban commercial spaces is even rarer. Due to the short development practice of new media installation art in China, it faces many problems: the conceptual classification of new media installation is relatively vague; the slow development of science and technology hinders the innovative means and expression methods of new media installation art. New media installation art is a multidisciplinary art form, which requires collaboration among artists and a high level of artistic aesthetics and knowledge reserve in new media technology. (Gu, 2021)

Immersive new media installations have gradually developed in recent years, and artists have more freedom to create. When visitors come into contact with art, they are no longer "immersive", but "being in the scene". Chen Ling, associate professor at Tsinghua University, gave a relatively simple definition in "The Outline of the History of New Media Art: A Journey to Integration". Chen Ling proposed that new media art refers to all works of art created using media and technical means.

Luo (2022) clarified the interactive nature of installation art in, "From Reality to Virtuality: Immersive Experience Design of Chinese Cultural Heritage": "Installation art based on the participation of the audience is not only the creation of the artist alone, but the collaboration between the artist and the audience." Ma (2012) In the book, "New Media Installation Art", it is clear that installation art is a comprehensive reflection of site, material and emotion. Cao (2011) clarified three necessary elements of interactive installation art in, "Experimental Interactive Installation Art", including sensing changes in the outside world, converting changes into information and making corresponding responses based on different information, that is, input, processing and output of information.

Ma (2012) believes that the design subject of new media installation art is installation art, which is the result of the intervention, creation and application of new media technology. Li (2020) in "A Brief History of Digital Media Art" refers to the "dialogue" method, experience type and application technology, and classifies the interactive devices: "wall interactive devices, contactable interactive devices, mobile phone control interactive devices, large-scale environment interactive devices, non-contact interactive devices, immersive interactive devices, landscape interactive devices, intelligent interactive devices". Deng (2008) summarizes the characteristics of new media interactive installation art, including six characteristics of the artist's

strong interest in emerging technologies, emphasis on audience participation, unconventional technical means used to stimulate audience participation, location variability, strong interactivity and exhibition attributes of the works. "Through the ideas of artists in different periods, it can be reflected that the academia has a positive and affirmative attitude towards public participation in new media installation art and the interdisciplinary nature of new media installation art. New media installation art has begun to emphasize the combination of public participation and application in public space from the original art form exhibited in exhibition halls or museums. New media installation art has been endowed with practical social significance.

Chen (2007) in, "Outline of the History of New Media Art" is a seminal work in the field of new media art, providing a comprehensive overview of the history and development of this emerging field. In this literature review, the researcher will summarize some important findings from recent research on Chen Ling's work and its impact on the field of new media art. One of the main themes emerging in the literature is the importance of Chen Ling's work in establishing a research framework for new media art. Chen Ling's overview provides a historical and theoretical basis for understanding the development of new media art, tracing its evolution from early experiments in the 1960s to today's digital and online art. Many researchers believe that Chen Ling's outline helped to legitimize new media art as a unique and important field of study. Another important theme in the literature is the role of Chen Ling's work in expanding the scope of art history. According to many researchers, Chen Ling's focus on new media art highlights the need for a broader and more inclusive understanding of art history, taking into account the variety of media and techniques used by contemporary artists. By emphasizing the ways in which new media art challenges traditional notions of art and aesthetics, Chen Ling's work helps to stretch the boundaries of art history, opening up new avenues of research and exploration. A third theme emerging from the literature is the ongoing relevance of Chen Ling's work in the face of rapidly evolving technologies and media forms. Many researchers have noted that Chen Ling's outline provides a valuable framework for understanding how new media art evolves and transforms in response to new technologies and social environments. By emphasizing the importance of experimentation and innovation in

new media art, Chen Ling's work provides a roadmap for future research and exploration in this exciting and dynamic field.

Overall, the literature on Chen Ling's *Outline of New Media Art History* highlights the important role this work has played in establishing new media art as a unique and important field of study. By providing a comprehensive overview of the history and development of the field, Chen Ling's work helps expand the scope of art history and opens new avenues for research and exploration in the digital age.

2.2.3 Culture of Installation Art

The entry installation art in the *Encyclopedia of Aesthetics* published by Oxford University in 1998 contains more than 4,000 words. However, it does not provide an absolute definition of installation art, but points out that this term has been used since the 1960s. It has been used to refer to "temporary, site-specific artworks", and such works usually surround the audience in a given exhibition space or interact with the audience and the architectural space of the exhibition. The *Encyclopedia of Aesthetics* further pointed out that as late as 1989, there were still critics debating whether installation art should be considered a type of art or a medium, or just a practical form of conceptual art. Opinions differed. One of the sources cited in this entry is the introduction to the book *Installation Art*, published in 1994 and co-edited by Nicolas De Oliveria, Nicola Oxley and Michael Petry, founders of the Museum of Installation Art in London. The term is used to describe an art form that no longer focuses on a single object (medium), but focuses on the relationship between several elements to distinguish the relationship between the object and the context in which it exists. (Chen, 2016)

The origin of installation art can be traced back to the rise of Dadaism, Duchamp Fountain created in 1917 is one of his representative works. The appearance of this work can be said to have broken the definition of aesthetics by traditional art disciplines for many years, introducing objects in life and changing their original meanings, abandoning the nostalgia for ambiguous modern aesthetics in aesthetics, no longer blindly pursuing the coordination of aesthetic taste and the beauty of form, but insisting on a unique creative concept. A way of creating that violates rules, conventions and dogmas has become and will soon become a new norm. This kind of aesthetic thinking not only became the main source of the aesthetic consciousness of

the pioneers of Dadaism and Surrealism, but also the aesthetic foundation of contemporary installation art, which aroused extensive discussions in the art world at that time. As a major art movement of postmodern art, installation art became a frontier trend in the 1970s and played an important role in the development of postmodern art. Installation art absorbed the avant-garde elements of the appropriation method and ready-made objects advocated by postmodernism, and emerged on the art stage at that time. Some active artists, such as Cindy Sherman, Barbara Kruger, Hans Haacke, Victor Burgin, Jeff Koons, have made certain contributions in this regard with their respective artworks. In the main reviews of contemporary installation art in the West, some reviews traced its origins to its evolution and development, and more arguments identified installation art as an extension of sculpture art. This was mentioned in Rosalind Krauss' article "Sculpture in an Expanded Field". (Krauss, 1979)

The concept of interactive media provides an opportunity for the emergence and development of new media installation art. By increasing the interactivity of artworks, the artists allow viewers to participate in the artistic creation and become an integral part of the works. The special feature of new media installation art lies in the two-way nature of interaction. The audience, as the input of initial information, will react differently to the new media installation art according to their own understanding, while the new media installation art, as the processor and outputted of information, analyzes the different reactions of the audience and gives corresponding feedback. Different input information will inevitably lead to different feedback information, and this difference will in turn affect the audience to seek more possibilities for new media installation art. This uncontrollable result orientation gives new media installation art unique characteristics. The audience's interaction with it will change some of the characteristics of the artwork, which is a process of repeated creation and re-creation.

New media art refers to an art form that takes digital technology as the core, interactivity as the basic feature, and uses the latest scientific and technological achievements such as computers and networks as the creative medium. Roy Ascott, a professor at the University of Plymouth in the UK, believes that the most distinctive features of new media art are interactivity and connectivity. There are five stages in

new media art creation: connection, integration, interaction, transformation and emergence. Connection refers to immersing the whole body in it (not looking at it from a distance), interacting with the system and others, transforming the awareness of art, and emerging new relationships, thinking and experiences. (Ascott R, 2000).

Most of the early new media installation art was created using relatively simple sound and light techniques, such as the installation artwork "Mirror House" created by Lucas Samaras. Nam June Paik's "TV Buddha" introduced digital media into artistic creation, and creatively used image technology to explore new ways for the presentation of artworks. The 1980s was a period when new media installation art was in vogue, and a large number of new media art exhibitions came out, such as the "Immateriality" exhibition held by the Center Pompidou Modern Art in France and the 42nd. Numerous new media installation art exhibitions have emerged to give the public an opportunity to learn about new media installation art, and they have also become a platform for exchanges and discussions between the world and Western scholars. (Robertson & McDaniel, 2010)

The earliest immersive new media installation art can be traced back to the 1990s, when some artists in Europe and North America began to explore the use of digital technology to create immersive art experience. One of the most representative works is "Tunnel Under the Atlantic Ocean" created by American artist (Maurice, 1995). This work uses virtual reality technology to connect the subway stations of Paris and New York through digital tunnels, allowing the audience to have an immersive experience between the two cities. With the advancement of information technology, new media art has gradually developed. Its research and design in various disciplines has also added new blood to the development of new media installation art. The intervention of new media art has enriched the form of expression of installation art, increased interactive entertainment and interest, and achieved diversified experiences in vision, hearing, smell, touch and taste through corresponding technical means. The most representative one is "Flowers and People" created by Japan's Teamlab studio, which uses new media technology to interact with the public, and acts as an imaginative immersive viewing experience. At present, new media installation art has gradually come into people's field of vision, shifting from art museum to urban public space, especially the application practice in urban

commercial space is particularly prominent. In the book "Pour de l'art dans notre quotidien", Grout conducts research and analysis through a large number of cases, exploring the understanding of the era and living space triggered by the artist's works. (Grout, 2015)

The initial conceptual perfection of "immersive installation art" is derived from the transplantation and reference of the theory of immersion in psychology. American-Hungarian psychologist Csikszentmihalyi published the famous article, "Flow: The Psychology of optimal experience" at the end of the 20th century, in which he put forward the theory of "flow", which can be translated as immersion or flow, this theory is also named immersion theory. In this theory, Csikszentmihalyi described the psychological phenomenon that people enter the state of immersion unconsciously, "People are happiest in the state of flow, which is a complete awareness of the ongoing activities and the situation in which they are in," investment and concentration." (Csikszentmihalyi, 1997) The immersive space atmosphere allows viewers to have a more immersive sensory experience, just as Gombrich (2002) believes, "The entire history of art development is not the history of technical proficiency, but the history of history of changes in concepts and requirements."

As shown by many new media installation arts, it uses the sensory organs of the participants as the medium of information transmission, and in a specific time and space, relying on the artist's arrangement of the physical space or the enhanced media of realistic functions. Application of non-digital media can make people highly focused and produce a sense of immersion. There are no boundaries between immersive works, and they blend with each other to form a boundaryless and continuous space, allowing viewers to experience the artistic emotion and information that the creator wants to convey in an immersive art space. Although immersive new media installation art has formed a theory in the early stage, it still cannot be fully realized due to the limitation of technical level, but the development of interactive installation art has accumulated profound experience for the generation of immersive new media installation art. Until the end of the 20th century, due to the rapid development of new media technology and the mature application of new artificial synthetic materials, people began to observe and summarize the phenomenon of immersive experience in the field of art and mobile Internet, and put immersive new

media installation art into practice, and quickly became popular in art galleries, urban spaces. Therefore, the emergence of immersive new media installation art can be regarded as an art form created by artists to cater to or respect the aesthetic and artistic experience of the public.

Art is essentially an activity of communicating ideas, thinking and emotions. The development of new media art relies to a certain extent on the cutting-edge information technology means of each period. In the past two decades, science and technology have developed rapidly, and technical means have been updated and iteratively emerged. Experts and scholars in different periods mainly defined it according to the current status of technological development at that time, which has caused uncertainty in the definition of new media art. (Dewey, 2008)

In the early days of the development of new media art, Susan Alite et al. (2009) pointed out in the new media art special issue of *Asia Pacific Art* that new media art mainly refers to the application of advanced technologies in artworks, such advanced technologies include the Internet, video art and multimedia installation art and performance. With the development of technology and the deepening of research, Zhang (2001) elaborated on the new media art form. In his book, "New Media Art", he proposed that new media art is an ever-evolving art, no longer limited to traditional artworks such as painting or sculpture, but a general term for artistic exploration and practice using a variety of technological means. In "On New Media Art", Xu (2007) emphasized the concept of "new" in new media art, and proposed that new media art is a comprehensive innovation in artistic behaviors such as creation, carrying, dissemination, appreciation and criticism, which in turn affects the public. The artistic aesthetic experience has undergone profound changes. Chen Ling, associate professor at Tsinghua University, gave a relatively simple definition in, "The Outline of the History of New Media Art: A Journey to Integration". Chen (2007) proposed that new media art refers to all works of art created using media and technical means.

With the help of new media art technology, new media installation art enhances the interactivity and fun of interactive installation art, creating an art form with a stronger sense of experience. As far as new media installation art is concerned, due to its short development time, few domestic studies, and strong interdisciplinary

nature, including art, design, programming technology, most of the existing literature focuses on new media art. Discussed separately from interactive installation art.

Based on the above research, it can be inferred that experts and scholars have different views on "new" in new media art. Professor Xiong (2006) of Tsinghua University believes that the concept of new media is relative, temporal and developmental. "New" has its own time attribute, and only cutting-edge science and technology within a period of time can be called "new". For example, compared with paper journals and newspapers, electronic books can be called "new"; compared with electronic touch screens, gesture recognition and eye recognition can also be called "new". From this, it can be concluded that "new media art" cannot be defined in a narrow and normative sense, but can only be generalized in a broad sense. Here the researcher agrees more with Professor Chen Ling's point of view above. All media and technical means can be called "new" within a certain period of time, so wants to simply summarize new media art as: "Creatively use the present Cutting-edge technological means or media of new artworks." With the advent of the Internet age, installation art has become the new language of this era. Modern artists no longer stick to traditional artistic expressions, and constantly combine new media technologies, artistic trends and artistic languages to enrich the emotional expression and forms of installation art. Compared with traditional art forms, new media installation art is no longer a one-way transmission of the artist's thoughts and emotions to the viewer, but in an immersive space, the viewer interacts emotionally with the artist who created the new media installation, and the viewer feel and interpret the emotions in the works independently in the space and interact with them, which are then generated by algorithms, so as to realize the joint creation of viewers and artists.

With the development of foreign theories and practices, Chinese artists tried to create new media installation art by imitating and learning the techniques and concepts related to foreign installation art. work. The "85 New Wave" period opened the door to installation art in the Chinese art world, such as the "Shanxi Seven Modern Art Exhibition" held in 1985 and the "Xiamen Modern Art Exhibition" held in 1986. (He. 2008) Many young artists borrowed Dadaism and other concepts to carry out the artistic creation of ready-made products. Although the rote application of

Western theories by Chinese artists at that time did not allow these works to be recognized by the public, this bold attempt was undoubtedly revolutionary in the history of Chinese art because it broke the limitations of traditional Chinese art theories.

With the development of installation art theory in China, Chinese artists represented by Xu Bing and Gu Wenda, based on Chinese language and cultural symbols, focused on expressing people's hesitant emotions brought about by China's social changes in history. Chinese installation art gradually matured. After initial learning and research, Chinese installation art entered the development period in the 1990s, transforming the design elements of learning and imitating excellent Western theoretical achievements into a design language with Chinese characteristics, focusing on public participation in the experience of artworks the emotional resonance of Cai Guoqiang and Xu Bing's installation art was exhibited abroad. The works of this period were relatively mature. While exporting Chinese culture, more and more scholars began to summarize Chinese art practice and reflection. (He, 2008)

With the wide application of science and technology, new media art is booming, artists have begun to integrate new media technology into artistic creation, and new media installation art has begun to take shape. Chinese artist Zhang Peili pioneered electronic media in his artistic creation at this stage, and created a series of new media installation artworks, such as the early works "30x30", "Everything Grows" and so on. This work of art uses a lot of digital media technology and sensor technology to immerse the viewer in a living natural environment. The development of interactive digital media technology has enabled artists to create more realistic and richer immersive art experiences. With the rise and development of interactive technology, new media installation art has entered a mature stage, new media installation art with sound and light as the main technical medium has gradually entered the public's field of vision, and new media installation art has also begun to appear in urban commercial spaces figure. The 2004 Beijing First International New Media Art Exhibition, co-organized by Tsinghua University, ZKM Art and Media Center in Germany, and V2 New Media Art Center Association in the Netherlands, was held at the China Millennium Monument. This is the highest level of international new media held in the researcher's home country so far held Art exhibition and

Forum. The 15-day exhibition was launched with the theme of "Leading the Frontier". The holding of this art exhibition promoted the exchanges between Chinese and foreign artists, and laid a good foundation for the sustainable development of Chinese new media installation art. (He, 2008)

So far, relying on the increasingly powerful information technology, many interdisciplinary and interprofessional fusion media art categories have emerged, bringing infinite innovation possibilities to the development of Chinese new media installations in art. Artists have also gradually begun to explore the application status and future development prospects of new media installation art in urban commercial space. Based on the different sizes of urban commercial spaces, artists adopt different design techniques to adapt to spaces with different attributes. With the continuous innovation and development of Dalian's urban commercial space, the immersive new media installation art is also constantly evolving and improving. For example, in 2012, the "Digital Art Exhibition" held in Dalian Xinghai Plaza Shopping Center was a successful application of immersive new media installation art. The exhibition includes several works of art created by digital technologies, such as stereoscopic images, interactive installations, virtual reality and musical performances. These works have attracted a large number of audiences to appreciate and have aroused the attention and discussion of GF.

2.3 Relevant of Art in Urban Commercial Space Development

2.3.1 Knowledge of Contemporary Art

Contemporary art is a diverse and ever-evolving field, with many different themes and styles emerging since the 1980s (Robertson & McDaniel, 2010). Here are some of the major themes that have emerged in contemporary art over the past few decades:

Identity: One of the most prevalent themes in contemporary art is the exploration of identity, whether it be personal, cultural, or political. Many artists are interested in exploring questions of race, gender, sexuality, and nationality, and how these factors shape our experiences in the world.

Technology: As digital technology has become more prevalent in society; many artists have begun to incorporate it into their work. From interactive

installations to digital prints and animations, technology has opened up new possibilities for artists to explore.

Environmentalism: As concerns about climate change and environmental degradation have grown, many artists have turned their attention to these issues. Some artists use their work to raise awareness about environmental issues, while others create pieces that incorporate recycled materials or address the relationship between humans and nature.

Memory and history: Many contemporary artists are interested in exploring the ways in which history and memory shape our understanding of the world. This theme often encompasses issues such as trauma, nostalgia, and the construction of national narratives.

Pop culture: Popular culture has long been a source of inspiration for artists, and this trend has continued in contemporary art. Many artists create work that references popular culture, whether it is through the use of popular images, or the exploration of themes found in movies, music, and television.

Performance art: Performance art has become increasingly popular in contemporary art, with many artists using their bodies as a medium for artistic expression. Performance art can take many forms, from live performances to recorded videos.

Overall, contemporary art is characterized by diversity, with many different themes and styles. The themes listed above are just a few examples of the many ways in which contemporary artists explore the world around them. The relevant content of these partial themes provides reference value for the construction of the theme expression of new media installation art in urban commercial space.

Contemporary Art Theory in the Interdisciplinary Perspective is a book that considers and investigates many issues involved in contemporary art theory based on the interdisciplinary context. Among them, the whole book is divided into two parts, forming a number of theoretical issues that are independent of each other and echo each other. The first half is the contemporary behavior basis of art theory. On the one hand, it analyzes the evolution logic in many aspects; on the other hand, it gives a deep theoretical inspection of contemporary art practice, and also focuses on the issue of artistic production that has both theoretical and practical value. The second half

mainly focuses on the practical part of contemporary culture, analyzing several theoretical and practical issues in visual culture and popular culture in a broader interdisciplinary perspective. All these discussions, on the one hand, are based on the contemporary development of art theory as the core issue and have a strong interdisciplinary color on the whole; on the other hand, they mainly give some in-depth reflections on the theoretical effect in the local context. Among them, the third chapter, the mass media and the symbols of visual images under the multiple perspectives of art production theory, provides theoretical support for examining the installation art of Dalian's urban commercial space. Stuart Hall once said about culture: Culture is not so much a group of things (novels and paintings or TV programs and comics), but rather a process, a group of practices, which first designs the production and exchange of meaning among the members of a society or group, that is, "the giving and receiving of meaning". (Li, 2018)

Although culture can be said to be the product of language, every medium creates new voices. From the oldest paintings to pictograms, from the creation of the alphabet to the creation of television. Like language, each medium provides a new orientation for ways of thinking, expressing thoughts, and expressing emotions, which in turn creates unique new symbols. Taking the medium from McLuhan revealed a change in the way the medium was communicated, and at the same time brought profound changes to the world. It can be said that no matter from the perspective of mass media or contemporary art production, this change has been or is helping us better grasp the world. Of course, the premise must be to fully understand the various cultural meanings behind it, and choose an appropriate position, rather than being forced to cling to the discourse of various rights.

From the perspective of cultural criticism on daily life, regardless of the study of mass culture or visual culture, its foothold is in the daily scope of social life, so it is a cultural critique of daily life practice to a large extent. Of course, the ubiquitous mass media and its production mechanism of visual images can best reflect the daily characteristics of mass culture and visual culture. This part analyzes many analyzes of Chinese contemporary culture from the perspective of aesthetics and art theory. "Aestheticization of daily life" is one of the propositions that deserve attention. It not only partly reveals the basic characteristics of Chinese contemporary culture at the

aesthetic level, but also reveals the realistic relationship between art practice and daily life in the mass media era and some of its inherent cultural logic from a specific perspective. Specifically, starting from this proposition, this relationship can be explained in at least four dimensions. The first is the penetration of technology into artistic practice; the second is the aesthetic value orientation of consumerist culture; the third is the collusion between mass media and various power discourses in the aesthetic dimension. In the collision process of mass media and various power discourses, people are really being subtly deprived of the ability to feel their own alienation. In the interweaving of modernity and postmodernity, this possibility is becoming more and more clear in the development of Chinese contemporary culture.

2.3.2 Modern Art and Popular Culture

Modern art and popular culture have had a complex relationship over the past century, with artists and cultural critics exploring the ways in which popular culture has influenced modern art and vice versa. (Varnedoe & Gopnik, 1990) In this literature review, the researcher had summarized some of the key findings from recent research on the relationship between modern art and popular culture.

One of the main themes that emerges from this literature is the idea that modern art and popular culture are closely intertwined. Many artists have drawn inspiration from popular culture, incorporating elements of it into their work in order to comment on its influence on society. For example, Andy Warhol's use of everyday consumer objects and pop icons in his art is seen as a reflection of the pervasive influence of popular culture in American society.

Another important theme in this literature is the role of mass media in shaping modern art and popular culture. The rise of mass media in the 20th century had a profound impact on both art and popular culture, as artists and consumers alike were exposed to new forms of media and ways of thinking about visual culture. For example, the emergence of television in the 1950s and 60s had a significant impact on the visual language of advertising and popular culture, which in turn influenced the work of many artists.

The third theme that appears in this literature is the role of cultural identity in modern art and popular culture. Many artists and cultural critics have explored the ways in which popular culture reflects and shape's cultural identity, both at the

national and global level. For example, the emergence of hip hop culture in the 1980s and 90s is seen as a reflection of the experiences and struggles of African American communities in the United States and has had a significant impact on the global popular culture landscape.

Overall, the literature on modern art and popular culture highlights the complex and dynamic relationship between these two spheres of visual culture. By exploring themes such as inspiration, mass media, and cultural identity, researchers are developing a deeper understanding of the ways in which modern art and popular culture shape and reflect the world around us.

2.3.3 Culture of Consumption and Experience Economics

Commercial architectural design has become an increasingly important area of research from the perspective of consumer culture, as it plays a crucial role in shaping the built environment in which we live, work, and consume. In this literature review, the researcher will summarize some of the key findings from recent research on contemporary commercial architectural design and its relationship with consumer culture.

One of the major themes that emerges from this literature is the role of commercial architecture in creating and reinforcing consumer culture. Many researchers have argued that commercial architecture has become a key element in the process of consumerization, whereby the built environment is designed to encourage consumption and promote brand identity. For example, Galloway & Dunlop (2006) argue that contemporary commercial architecture is characterized by a focus on creating immersive, sensory experiences that are designed to engage consumers and promote brand loyalty.

Another important theme in this literature is the use of technology in commercial architectural design. Many contemporary commercial buildings are designed with state-of-the-art technologies that are intended to enhance the consumer experience. Additionally, digital technologies such as interactive displays and augmented reality experiences can create a more engaging and personalized shopping experience.

Overall, the literature on contemporary commercial architectural design from the perspective of consumer culture highlights the important role that architecture

plays in shaping our consumer experiences and promoting brand identity. By focusing on themes such as immersion, technology, and sustainability, researchers are developing a deeper understanding of how commercial architecture can be designed to meet the needs of both consumers.

In the book "Experience Economy", Pine & Gilmore (2012) believe that "When enterprises consciously use services as the stage and commodities as props to integrate consumers into it, experience will emerge." The experience economy has broken the traditional consumption model. In the traditional consumption concept, the main purpose of consumption behavior is to purchase items in a planned way. In the experience economy, experiential consumption is an important reason that affects consumer behavior. With the rapid development of the Internet, more and more people use Internet shopping platforms to complete shopping activities, and the traditional commercial space functions have been greatly compressed. In order to enhance the vitality of urban commercial spaces to meet the needs and preferences of consumers, urban commercial spaces The mode of consumption has also gradually turned into a transformation mode: from satisfying simple material consumption functions to a service-oriented consumption mode that provides leisure and entertainment experience. The prevalence of the experience economy has made the exchange of goods obtained from shopping and consumption a carrier, and the experience of consumers in the process of shopping activities has become the main purpose of consumption.

According to economic theory: value is composed of two parts: functional value and emotional value of consumer psychology. Experience not only promotes the generation of commodity shopping behavior, but also becomes the added value of commodities invisibly. The subject of experience economy is people, and the stimulation of human senses in urban commercial space can be called experience economy. Therefore, in the design of urban commercial space, creating an interactive and entertaining space environment based on human experience is a problem that designers need to pay attention to and solve.

Based on the model literature of experiential consumer culture, the rise of human civilization has constantly replaced economic, cultural and historical civilizations. It has also unstoppably experienced one economic type after another and

faced challenges one after another. From the initial agricultural economy to the light and heavy industrial economy, human beings have experienced the revolution of science and technology and experienced the impact of the large industrial economy on people's needs; the emergence of the industrial economy has promoted the development of the commodity economy, making the commodity exchange mode change from simple to complex and constantly exploring more perfect exchange modes, service methods, implement the proposed concepts in place, and push the service mode to a higher level of operation; from the initial single service economic model to the enjoyment experience economic model, human beings are facing new challenges, that is, how to grasp the demand laws and demand patterns of consumer groups, and establish an experience economic operation model that is more in line with consumer demand intentions. (Wang, 2020)

Compared with the era of product economy or the realization of self-worth pursued by some enterprises, the experience economy has completely changed the perspective of the economic operation model, that is, from the stage where the commercial space determines product design and marketing operations as the center, to the stage where consumers decide their own experience needs and enable consumers to constantly monitor the production process of their desired products. Compared with the systematic and complete service model provided by businesses in the era of service economy, it has also completely changed. Based on the network economy, the experience economy innovates a brand-new operation mode, which fully sublimates the embodiment of customer value. Under the influence of the thought of experience economy, more commercial space complexes have carried out experiential marketing work, especially some large commercial enterprises have launched the operation modules of experience economy in the market. These marketing methods and operating models have undoubtedly brought new value and enjoyment to consumers, but under what circumstances consumers are willing to accept the experience provided by the commercial complex, what kind of experience they hope to get, what conclusions and thinking will be formed after the experience, and how to define the marketing operation ideas based on the commercial space under the commercial complex, all of which need further research. Especially in the era of experience economy dominated by consumers at the present stage, how to define the

dependent conditions of experiential enjoyment and consumption purchase will be a problem that must be solved before the current commercial space needs to carry out experiential marketing.

By reading this literature on the experience economy of urban commercial space, we can understand the latest research results on the experience economy and consumer behavior at this stage. This literature shows that the analysis of the survey data establishes the overall process and interaction mode of consumer experience behavior. The specific research content includes about seven parts: First, through the comparison of the experience economy and the non-experience economy, it establishes the basic characteristics of the current experience economy, the behavior characteristics of consumers under the new economic conditions, and the behavior of consumers in the performance and operation of the experience economy model.

The second is to define consumers' attitudes towards formulation, which is the cornerstone of constructing consumer experience behavior patterns. This paper defines consumers' intentions and actions towards experiential consumption orientation by investigating consumers' recognition and attitudes towards "enactment" and analyzing them in depth.

Thirdly, it analyzes consumers' re-understanding of experience field, which is the consumption direction that consumers voluntarily choose through experience, such as consumers are willing to choose shopping experience, or entertainment experience, or travel experience and other experience economic models.

Fourthly, it establishes the channels that consumers need to go through when choosing experience items and means, which is the experience path. Through the experience path, consumers can smoothly participate in the experience activities in the commercial space and obtain the information needed for purchase, form an understanding of a specific image, and then establish their own needs.

Fifthly, it is to grasp the consumer's choice of experience goods, which is the object that consumers pay attention to and the goal they desire to obtain when they participate in experience activities, and it is the consumer goods that consumers voluntarily choose through experience.

Sixth is a study of the hopes and outcomes that consumers place on experiential performance. From the point of view of consumers, the hope and result

that consumers put on through experience behavior is the ultimate acquisition of consumer experience enjoyment value and the realization of experience benefit value, which is the consumer's experience goal. The goals that consumers expect to obtain through experience in the experience economy life are not single-layer and single-item, but multi-layer and multi-dimensional. Through the overall review of the literature, this literature classifies the consumer experience goals into three categories: the information shopping experience goals that consumers expect to obtain, the perceived benefit experience goals and the deep benefit experience goals.

The last point is through the analysis of various behaviors of consumers participating in the operation path of experience economy, the performance behavior model of consumer experience and the theoretical model of consumer experience decision-making obtained in this literature. These two models actually form the laws of consumer experience performance behavior, some of which can be used as a reference for subsequent consumers to choose experience performance behavior and can also be used as a basis for the commercial space complex running experience economy to choose experience models and define the operation ideas of experience economy. Specific research methods include literature research, questionnaires, statistical analysis, model building, as well as actual research and interviews. Through the integration of experience economy and consumer performance behavior, this paper puts forward the problem of how to operate the experience economy model in non-natural experience industries, such as manufacturing or distribution industries that are closely related to consumer purchases and consumption behaviors. The purpose of the research on consumer experience performance behavior and the establishment of experience model is to provide guidance for the operation of experience economy, and to provide a way of thinking for the construction of theoretical model research of Dalian urban commercial space. This also reminds that the research on experience economy and experience marketing should pay more attention to consumers' experience performance behavior and establish the influencing factors and experience models of consumers' experience performance behavior, so as to provide reference for creating more opportunities, experience conditions and experience directions that meet consumers' experience requirements in urban commercial spaces.

2.4 Related Laws and Policies

During the development of urban commercial space in China, the state and various provinces and cities have promulgated many policies and laws to promote the development of urban commercial and new media installation art. This section will sort out some representative policies for understanding and reference.

2.4.1 National and Dalian City of Liaoning Province Related Policies

Table 1. National Related Policies

Year	Policy Name	Policy Point
2014.3	Several Opinions on Promoting the Integration and Development of Cultural Creativity and Design Services and Related Industries	Promote the integrated development of cultural creativity, design services and related industries to the height of national strategy.
2015.1	Opinions on accelerating the construction of a modern public cultural service system	With the people as the center and the core socialist values as the guide, we should develop advanced culture, innovate traditional culture, support popular culture, guide popular culture, transform backward culture, resist harmful culture, consolidate grassroots cultural positions, and promote the formation of a positive and positive culture in the whole society. Spiritual pursuit and healthy and civilized lifestyle

Table 1. (Continued)

Year	Policy Name	Policy Point
2015.7	Guiding Opinions on Actively Promoting the “Internet +” Action	Adhere to the basic principles of openness and sharing, integration and innovation, reform and transformation, leadership and leapfrogging, and security and orderliness, and give full play to the scale and application advantages of my country's Internet
2016.2	Several opinions on further strengthening urban planning and construction management	Shape the city's characteristic features and protect its historical and cultural features. Measures such as renovating and utilizing old factories and improving infrastructure will restore the functions and vitality of the old city.
2017.5	Guiding Opinions on Strengthening the Construction of Industry Organizations in the Cultural Field	Adhere to cultural self-confidence, insist on putting social benefits first, promote the comprehensive prosperity of cultural undertakings, the rapid development of cultural industries, and the inheritance and promotion of excellent traditional culture

Table 1. (Continued)

Year	Policy Name	Policy Point
2018.3	Guiding Opinions on Promoting the Development of All-region Tourism	Promote the integrated development of culture and tourism, scientifically use traditional villages, cultural relics and museums, memorial halls, art galleries, art galleries, world cultural heritage, intangible cultural heritage exhibition halls and other cultural venues to carry out cultural and cultural tourism, and promote theater, performing arts, entertainment, animation and other industries are integrated with the tourism industry to carry out cultural experience tourism
2019.8	Opinions on Accelerating the Development of Circulation and Promoting Commercial Consumption	<ol style="list-style-type: none"> 1. Promote the development of new circulation business formats and new models. 2. Promote innovation, transformation and upgrading of traditional circulation enterprises. 3. Active night businesses and markets. 4. Expand holiday consumption space. 5. Build a brand product marketing platform. 6. Encourage R&D and innovation of circulation enterprises. 7. Give full play to the guiding role of financial funds. 8. Optimize the market circulation environment.

Table 1. (Continued)

Year	Policy Name	Policy Point
2020.10	Recommendations of the Central Committee of the Communist Party of China on formulating the 14th Five-Year Plan for National Economic and Social Development and the Long-term Goals for 2035	The implementation of urban renewal actions was clearly proposed, and urban renewal was included in the five-year national economic and social development plan for the first time.
2020.11	Outline of the 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-term Goals for 2035	At the national level, it is clearly proposed to transform the urban development model and implement urban renewal actions.
2021.12	"14th Five-Year Plan" Tourism Development Plan	Focus on construction, control and protection, theme display. The integration of culture and tourism involves the use of four types of themed functional areas, and the implementation of five major projects: protection and inheritance, research and excavation, environmental support, integration of culture and tourism, and digital reproduction.

Table 1. (Continued)

Year	Policy Name	Policy Point
2022.10	Report of the 20th National Congress of the Communist Party of China	It is necessary to comply with the development trend of digital industrialization and industrial digitization, accelerate the development of new cultural formats, transform and upgrade traditional cultural formats, and improve quality, efficiency and core competitiveness.
2023.3	Opinions on deepening "Internet + Tourism" to promote high-quality development of the tourism industry	To promote the integrated and innovative development of smart tourism, the Ministry of Culture and Tourism decided to launch a pilot project for recommendation, selection and cultivation of new immersive experience spaces for smart tourism.
2023.6	Opinions on promoting the implementation of the national cultural digitalization strategy	Strengthen the digital construction of culture and tourism and empower the high-quality development of culture and tourism.

Source: Sui Guanglong (2023)

2.4.2 Related Policies of Dalian City

Table 2. Related Policies of Dalian City

Year	Policy Name	Policy Point
2022.5	Dalian City's work plan to boost consumption in the cultural tourism market	Enrich the supply of cultural tourism products and create a highly integrated matrix of cultural tourism activities. Build a platform to improve the effectiveness of cultural tourism promotion.
2013.5	The "Dalian Xiongdong Street" publicity and promotion activity was rated as an outstanding case of domestic tourism publicity and promotion in 2022	Continuously promote the in-depth integrated development of Dalian's cultural tourism industry, amplify the brand effect and public influence of cultural tourism, release the potential of cultural tourism consumption, and innovate new ideas for cultural tourism marketing.
2023.7	Regarding the proposal for our city to hold the Northeast Asian Art Biennale to empower the integrated development of urban culture and tourism	Promote leading cultural tourism enterprises to become bigger and stronger, implement the "Cultural Capital of East Asia" series of activities, and build urban cultural brands
2013.8	Dalian cultural tourism project was selected into the first list of the Ministry of Culture and Tourism's technological innovation center construction in the country	A scientific and technological innovation base focusing on technological innovation and achievement transformation in the field of natural sciences in the cultural and tourism industries
2023.9	Speech at the symposium on cultural inheritance and development	Strengthen cultural self-confidence, uphold openness and inclusiveness, and adhere to integrity and innovation

Source: Sui Guanglong (2023)

2.4.3 Relevant Laws and Regulations

According to relevant data, my country's laws in the cultural field have developed from the original two and a half "Cultural Relics Protection Law", the "Copyright Law" and the "Intangible Cultural Heritage Law" which are half culture-oriented and half technology-oriented, to the current five laws. They are the Copyright Law, the Cultural Relics Protection Law, the Intangible Cultural Heritage Law, the Film Industry Promotion Law, and the Public Culture Protection Law. The cultural field includes history, geography, customs, traditional customs, lifestyles, literature and art, behavioral norms, ways of thinking, values, etc.

Laws related to culture and art include the Copyright Law of the People's Republic of China: This law stipulates the rights of copyright owners, including copyright protection in literature, art, music, film and other fields, as well as related usage and management regulations.

Cultural Industry Promotion Law of the People's Republic of China: This law aims to promote the development of cultural industries, including the management of cultural and creative industries, art markets, and support and incentive policies for cultural industries.

Intangible Cultural Heritage Law of the People's Republic of China: This law stipulates the protection, inheritance and management of intangible cultural heritage, including traditional skills, folk art, etc.

Film Industry Promotion Law of the People's Republic of China: This law aims to promote the development of the film industry, including regulations on film production, distribution, and screening, as well as the review and management of films.

Urban Planning Law of the People's Republic of China: This law provides for the consideration of cultural heritage and cultural landscapes in urban planning and construction.

Measures for the Management of the Art Market of the People's Republic of China: These regulations mainly involve the management of the art market, trading rules and intellectual property protection.

These laws and regulations have been continuously developed and improved to meet the needs of China's growing cultural and arts industry.

2.5 Relevant Theoretical Knowledge

In this research, the following five theories will be used as guidance, including: Art Semiotics; Media environment; Experiential economics; Structural theory and Ecological theory.

2.5.1 Art Semiotics

Art semiotics is an esoteric subject that seeks to delve deeply into the language and symbology of works of art. This theoretical framework emphasizes the multi-layered nature of works of art, permeated with various signs, symbols and meanings that are not fixed but rooted in multiple cultural, social and individual contexts.

In art semiotics, researcher focus on analyzing the semiotic elements in works of art, such as color, shape, composition, image, and text, and how they intertwine and influence each other. The potential ambiguity of these symbols means that different audiences can interpret the work differently based on their own culture, experience and background. This makes the work of art a complex medium for communicating information, full of challenges and possibilities.

Art semiotics also emphasizes the key role of cultural factors in the interpretation of symbols. Different cultural and historical backgrounds will give different meanings to the same symbols, so the relative interpretation of symbols is inevitable. This enables a better understanding of the differences and similarities between different cultures, as well as how art spreads and evolves across the globe. (Leak, 1994).

Semiotics: The Basics focuses on semiotics and its application in the field of art. The book emphasizes the critical importance of symbols as the basis for understanding the world, transmitting information, and communicating ideas. Art semiotics is considered a branch of semiotics that emphasizes the symbolic nature of works of art. One of the main points is the ambiguity of symbols. Chandler points out that symbols are often not fixed but open to multiple interpretations, depending on the background and context of the viewer. This concept of ambiguity is particularly salient in art, where works of art are often multi-layered and complex, encouraging viewers to assign different meanings to the work based on personal experience and emotion. In this way, art semiotics inspires deeper thinking and allows us to better understand the richness and diversity of works of art.

In addition, Chandler also discussed the composition of signs, dividing them into three main elements: sign, object and interpreter. Symbols are used to represent objects, and interpreters are viewers or users who understand the symbols based on their unique cultural, social, and individual experiences. This three-element structure helps readers gain a more complete understanding of how symbols work. Finally, the book also mentions the influence of cultural and social factors on symbols, emphasizing that different cultural and social backgrounds can lead to different interpretations of symbols, which further highlights the relativity of semiotics. These concepts and viewpoints provide a solid foundation for in-depth research on art semiotics and cultural studies, enabling us to have a more comprehensive understanding and explanation of complex art works and how symbols play key roles in them. (Chandler, 2007)

"Theory of Semiotics" proposed the core concepts of semiotics and provided a solid foundation for artistic semiotics. A key idea is the three elements of sign: sign, object, and interpreter. According to Eco, a symbol is an intermediary used to represent a specific object or concept. However, this representation is not fixed but depends on the audience, that is, the interpreter. Each interpreter brings with him his or her own cultural, social, and individual experiences and therefore interprets symbols based on these factors. This perspective is crucial to artistic semiotics because it emphasizes the subjectivity and relativity of the viewer. Symbols in works of art are often full of ambiguity, and different audiences may assign different meanings to the work, which provides a theoretical basis for multiple interpretations of art.

Another important point is the pragmatic nature of symbols, that is, there are specific purposes and intentions behind the use of symbols. In art, this means that artists use symbols to convey their opinions, emotions, and thoughts. A work of art can be viewed as a system of purposeful symbols, where each symbol has its own unique meaning and role, contributing to the emotion and theme of the entire work. This perspective emphasizes the depth and complexity of the artwork and how viewers interact with the symbols to understand the artist's intent. (Eco, 1986)

Based on the theoretical research on art semiotics, the researcher went to Dalian City, Liaoning Province, China for many field trips. Use the theory of art

semiotics to deeply interpret works of art. Analyze the relationship between symbols, text and images in the work, consider the impact of cultural factors on symbols, study the interpretation of different audiences, and explore the pragmatics of symbols to help reveal the multiple layers of the work and the artist's intention. This theoretical framework enriches art research methods and enables the researcher to better understand and explain the meaning of different art forms in order to obtain basic data and theoretical basis for art semiotics research.

2.5.2 Media Environment

Media environmental science is a general term for the theoretical system proposed by the media environmental school, which is closely related to the empirical school and the critical school. "Media Environmental Studies" were first proposed by Neil Postman in the late 1960s, integrating the views of McLuhan, Paul Levinson, Lewis Mumford and other scholars on the relationship between human communication and media technology in the same theoretical system (Neil Postman, 1960). It also created a new paradigm of communication studies, which was later regarded as the third school of communication studies, the media environment school. The main difference between this school and the empirical school and the critical school is that it takes the media itself as the research object, and aims to fully understand the impact of communication technology and the media environment it builds on people and society and its mechanism of action. At present, media environmental studies mainly discuss how symbols, information, tools and technologies guide human and social development, including semiotics, cultural studies, media theory, philosophy of technology and other fields, with the characteristics of postmodernism and post-industrialism.

Whether it is the basic proposition of the media environment school, or the evolution analysis of the media environment, the purpose is to provide a certain foundation for the study of the social impact of the media, and the focus is on the analysis of the social significance of the media environment. Media environment science believes that all fields in society, such as economy, politics, culture, education, architecture, psychology, music, sports, painting, all survive and develop in the media environment, and the media environment has a strong and continuous impact on it. (McLuhan, 1994)

It particularly emphasized the profound impact of media on society and culture. This book put forward the famous slogan "The medium is the message", which means that the medium itself is part of the message, and the form and characteristics of the medium are as important as the message it conveys. The book explores how different media (such as printing, television, and radio) shape and change human cognition, social interaction, and cultural expression. McLuhan emphasized the social shaping power of media, how they change the way we perceive and socialize, and how they shape our culture. Media are not only tools for transmitting information, but more importantly, they shape and influence society and culture. This book challenges people's simplistic views of media and encourages people to think deeply about the role and meaning of media to better understand the media and information environment in modern society. (McLuhan & Fiore, 1967)

The researcher uses media environment theory to analyze and understand the social, cultural and individual impacts of different media on Dalian's urban commercial space. Study media content, cultural influence, information ecology, cognitive style, and social interaction to gain a deeper understanding of the role and challenges of media in Dalian's urban commercial space. Through the impact of media on culture, the analysis of the information environment, the relationship between media and cognition, and the social impact of media, we analyze the profound impact of media on people's lives and ways of thinking.

2.5.3 Experience Economics

Starting from relevant life situations, experience economy shapes people's sensory experience and thinking identity, so as to attract consumers' attention and change their consumption behavior. From the perspective of the network economy, the experience economy mainly includes service and content experience (such as online shopping, online games, online movies), community experience (focusing on the relationship between communities and the establishment of relationships between people and maintenance) and the experience of the overall atmosphere of the network platform.

Experience economy theory emphasizes that companies should regard customer experience as core economic value and create unforgettable emotional experiences. They divide the economy into four stages, arguing that the experience

economy is one of them, in which companies not only provide products and services but also create deeply engaging experiences. This experience not only satisfies consumer needs but also builds brand loyalty and differentiates the business in the market. This theory has had a profound impact on business management and marketing, encouraging companies to create memorable emotional connections to meet evolving consumer expectations.

The modern economy has evolved to a new stage where not only providing products and services but also creating deep emotional experiences has become key. Companies need to treat customers as participants in the experience and create unique, memorable emotional connections to satisfy customer needs and build strong brand loyalty. This theory has had a profound impact on business management, marketing and brand building, encouraging companies to regard experience as their core economic value to stand out in a highly competitive market. It highlights the dominant role of customers in the modern economy, emphasizing the importance of emotional and engaging experiences. (Pine & Gilmore, 2012)

Use experience economics theory to guide companies on how to achieve success in marketing and brand building. It first emphasizes the criticality of customer experience, believing that experience is not just an add-on to a product or service, but a core economic value. The book provides rich case studies and practical strategies to help companies create exciting, brand-relevant experiences that attract customers and build brand loyalty. This includes creating profound experiences through emotional triggers, customer engagement and brand resonance. The authors also provide practical tools and methods to help companies apply experiential marketing across different industries to increase brand recognition, build lasting emotional connections, and ultimately stand out in a highly competitive market. The main goal of this book is to help companies put the principles of experience economics into practice to create brand experiences that engage customers and thereby achieve market success. (Smilansky, 2017)

The researcher uses experience economy theory to conduct in-depth research and analysis of the experiential phenomenon of installation art in Dalian urban commercial space to understand how consumers interact with products, services and installation art, and create profound emotions and cognitions in different situations.

experience. Through the study of consumer behavior, we analyze consumers' experiences in shopping, travel, and cultural activities, and pay attention to people's emotions and satisfaction to understand the impact of experience on purchasing decisions. There is also the cultural and entertainment aspect, which analyzes how arts and cultural experiences convey values and meaning and engage audiences. It also includes brand management and marketing, using experience economy theory to build brand image and create interactive experiences with consumers. Use experiential marketing strategies to drive brand success.

2.5.4 Structural Theory

In the cultural sciences, "structural" is often used to refer to structuralism or structuralist approaches. Structuralism is a theoretical framework that was first developed in linguistics and later applied in many fields such as anthropology, literary theory, and social sciences.

Strauss believed that the core idea of structuralist theory is to focus on the internal structure and patterns of cultural and social phenomena, these phenomena can be seen as a combination of a series of interrelated symbols, rules and structures. By analyzing their structures, the universal patterns, and laws behind them can be revealed. This theory highlights the binary oppositions in cultural phenomena, such as wildness and civilization, nature, and culture, and believes that these oppositions are not only a reflection of culture, but also reflect the universal structure of human thinking. Structuralism emphasizes cultural relativism and believes that the meaning of cultural phenomena is determined by their position and interrelationship in the social structure, encouraging people to consider their specific social and historical backgrounds when studying different cultures and societies. (Strauss, 1974)

Claude Lvi-Strauss advances the key ideas of structuralism, which emphasize the common structure and universality of cultural phenomena and human thought. He likens the human mind to a structure, and the symbols and symbols in different cultures can be seen as expressions of that structure. Lévi-Strauss believed that all cultures exhibit a universal way of treating the world and thinking about problems, and that differences in this way lead to cultural diversity. He viewed structuralism as a method that aimed to uncover these universal structures, not just cultural differences, to gain a deeper understanding of the nature of human thinking and culture. The

structuralist approach focuses on the interrelationships of signs and symbols, emphasizing the structures and patterns between them to reveal the underlying universal cognitive structures. (Lvi-Strauss, 1966)

Ecological theory is a theoretical framework for in-depth study of the interrelationships between human society and culture and the ecological environment. Ecological theory focuses not only on how culture adapts to the environment, but also on how culture reflects, shapes, and interacts with its ecological context.

First, ecological theory emphasizes the interrelationship between culture and ecological environment. It believes that culture is not only a social practice but also an ecological process that reflects how human society adapts and responds to different ecological conditions. This theoretical perspective reminds researchers that cultural characteristics and social behaviors are affected by the ecological environment, and culture is also responding to and adapting to different ecological pressures.

Second, ecological theory views the interrelationship between culture and environment as dynamic. It emphasizes the shaping and evolution of culture and how cultures develop under different environmental conditions, while also focusing on how environmental changes affect cultural adaptability and sustainability. This theoretical framework provides a profound perspective to help researchers better understand how culture, politics, and social practices interact with the ecological environment, and how these relationships shape the complexity of human society. (Bates, 2005)

The researcher uses structuralist theory to conduct an in-depth study of Dalian society and installation art cultural phenomena. This includes cultural analysis, social practice, textual analysis and linguistic studies. By paying attention to the inner structure, commonalities and differences, the researcher can gain a deeper understanding of the connection between installation art culture and society in different periods, as well as their impact on individuals and society. Structuralist theory provides the researcher with powerful tools to help them provide a more comprehensive perspective and dig deeper into the inherent complexity of society and culture.

2.5.5 Ecological Theory

Ecological theory is not usually a common term in the field of cultural sciences, but if ecological thinking is applied to cultural studies, some interesting perspectives and insights can be generated. In this context, "ecological theory" can be used to describe an approach or perspective that emphasizes the interactions and dependencies between cultural phenomena and the environment.

Cultural Ecology: Cultural ecology is a discipline that studies the relationship between culture and the environment. It emphasizes how cultural phenomena are affected by the ecological environment and how culture shapes the interaction between humans and the environment. This approach can be used to explore cultural adaptability, sustainability and change, and how culture reflects humans' relationship with the natural world.

Cultural landscape: Similar to the concept of ecological landscape in ecology, cultural landscape studies the distribution, interrelationship and evolution of cultural elements in geographical space. Cultural landscape research emphasizes the interaction between culture and geographical environment, and how culture shapes and reflects the character of a particular area.

Cultural Resource Management: Apply ecological resource management principles to cultural resources and consider how to protect, maintain and sustainably use cultural heritage and cultural resources. This approach focuses on the preservation and sustainability of culture, similar to the management of ecosystems in ecology.

Ecological theory explores the complex interactions between culture and the environment in the cultural sciences. It emphasizes how culture reflects and shapes social practices in diverse geographical and ecological contexts, including food gathering, resource utilization, settlement patterns, and technological development. This theory provides an in-depth understanding of cultural adaptability and sustainability while focusing on locality and the interplay between ecosystems and culture. Through ecological theory, researchers can reveal how culture is rooted in its specific environmental background and how it evolves as the environment changes, which is of great value to research on sustainable development and environmental protection. (Ingold, 2021)

Although ecological theory is not the main theoretical framework in the field of cultural sciences, applying ecological concepts and methods to cultural studies can help the researcher gain a deeper understanding of the relationship between the cultural phenomenon of installation art and the commercial space environment, and how art and culture Adapt and shape Dalian's social and ecological environment. This interdisciplinary approach helps broaden the researcher understanding of the interaction between culture and the environment in Dalian.

2.6 Related Research

2.6.1 Related Chinese Literature

1. Xu (2011) The Application of Interactive Multimedia Installation Art in Exhibition Design Taking the 2010 Shanghai World Expo as an Example

The author of this document participated in the design of the Zhejiang Pavilion of the Shanghai World Expo. During the World Expo, he visited and investigated the exhibition items of the World Expo Pavilion, and made an in-depth analysis and summary of the exhibition items in the form of interactive multimedia installations. He believed that the art of interactive multimedia installations There is a lot of room for development in display design. Therefore, this document defines the concept of interactive multimedia installation art on the basis of combing the emergence and development of interactive media installation art; from the characteristics of the development of new display design, it analyzes the joint point of interactive multimedia installation art and display design; and then uses 2010 Taking the typical interactive multimedia installation art exhibits in the Shanghai World Expo Pavilion as an example, it clarified the role of interactive multimedia installation art in interpreting large-scale exhibition projects such as the World Expo; finally combined with the author's participation in the large-scale themed interactive multimedia installation The experience of art design analyzes the advantages and creation methods of interactive multimedia installation art in display design, hoping to bring beneficial enlightenment to the future application of interactive multimedia installation art and the contemporary development of display design.

This document believes that interactive multimedia installation art has a lot of room for development in display design, and it is also a development trend of

display art design. Using multimedia technology to generate in-depth interaction with the surrounding environment or things, to achieve an art form that conveys certain humanistic concepts. The article sorts out the development stages of exhibition design, and analyzes the limitations of traditional exhibition information transmission, such as the audience is in a passive cognitive state, and the exhibition items do not pay attention to emotional communication. The article cites the design appeal of the China Pavilion at the 2012 Yeosu World Expo in South Korea and analyzes the appeal of the current exhibition design and the expression techniques used, such as the role played by the use of video dynamic media, touch screen and interactive installation art in the exhibition design, thus analyzing the meeting point of interactive multimedia installation art and display design. Obviously, modern cultural communication has departed from language-centered rationalism. At present, the popularization of computers, the development of digital technology and the increasing abundance of multimedia products have made visual cultural communication a dominant force in 21st century culture.

2. Chen (2014) Reflections on the development of interactive installation art in Chinese urban commercial space

Starting from the idea of "reception aesthetics", this article first outlines the development of interactive installations, summarizes the basic characteristics, forms of expression and technological factors of interactive installations; then analyzes the background of interactive installations integrated into urban public spaces, and analyzes in detail The specific performance in urban public space, supplemented by typical cases to analyze the process of interactive installation art intervening in urban public space; finally, summarize the development dilemma of interactive installation art in urban public space, and clarify the integration of interactive installation art into urban The inevitable trend of public space.

Among them, there are documents about the specific performance of interactive installation art in public space. Chen believes that the requirements of urban public space for artworks come from multiple levels of society. In urban public artworks, the factors of society and the public surpass the artist for the first time. Personal will and emotion, space and public aesthetics have become the criteria for judging works of art, highlighting the humanistic care function of urban public art.

The analysis of domestic and foreign cases proves that this kind of installation artworks with interaction as the element has the characteristics of good communication with people. Its unexpected artistic expression renders the atmosphere of the whole space and brings people a different sensory experience. At the same time, it creates a relaxed and pleasant artistic atmosphere, which is deeply loved by the public.

The interactive installation art described in the literature is a form of public art that is integrated into the urban public space supported by various kinetic energy technologies. From the history of art development, it can be clearly found that the development of art has always served the society, and art creation is to some extent a product of socialization, which is consistent with social development and human spiritual needs.

3. Li (2017) Exploration of Interactive Installation Art Based on Immersive Experience

With the development of "digital cloud" technology and smart terminal somatosensory devices, data-driven interaction design has become a new trend in public space design and new media art exhibitions. The article takes some of the interactive design works of the Team Lab creative team led by Japanese new media artist Toshiyuki Inoko in recent years as examples, and explores the progress of contemporary interactive design in multi-sensory experience and interactive methods from the perspectives of virtual reality, augmented reality, and somatosensory interaction.

The article believes that with the development of cloud computing, smart terminals and stereoscopic presentation technologies, new media interactive devices based on databases and multi-sensory experience will become an important field in the future design of public spaces. Through the analysis and elaboration of the immersive installation works created by the Teamlab team, Toshiyuki Inoko concluded: TeamLab's creation mainly displays digital art in a real space. These works displayed in the form of digital art will enrich artistic concepts and bring Come to a new experience. Even though the impact of materialized materials is very strong, the author still feels that digital art can expand the possibility of art and provide conditions for exploring the relationship between art and people.

In people's consciousness, digital creation is still one level lower than physical creation. We are trying to balance the value of physical creation and digital creation, hoping to break people's excessive love for physical creation. At present, with the development of digital storage technology, data-driven intelligent interactive devices have become a new space for technological innovation experience. Judging from the installation works of the Team Lab team led by Inoko Toshiyuki in recent years, new media interactive installations based on databases and multi-sensory experience will become an important field of public space design in the future.

4. Liang (2021) Reconstruction of Concepts under the Art Order Analysis of Xu Bing's Installation Artworks

This document takes Xu Bing's works, a famous Chinese installation artist, as an example, analyzes the artistic characteristics of Xu Bing's installation art creation from the perspective of the expression form and semantic connotation of the works, and expounds the uniqueness of Xu Bing's installation artworks in contemporary artworks. Then observe the expression form and conveyed cultural connotation of Chinese contemporary installation art, as well as the connotation of rich contemporary semantics.

Art theorists Gu Chengfeng and He Wanli divided installation art into two categories: one is a self-contained artwork composed of different structures, which is not limited to a specific environment and displayed; the other is a space scene in a specific environment. Open artwork included in the scope of work display. Compared with self-contained installations, open installations need to consider more interactions between scenes and people in addition to the work itself. The scene nature of installation art, on the one hand, focuses on the connection between works and people, how to integrate human emotions and thoughts with the environment through installations, that is, to create an "immersive" art experience. Xu Bing's installation artworks focus on the construction of space, closely linking people, environment and works. People, environment and atmosphere complement each other and complement each other with the works. The connotation of a work of art is often multi-layered. From artistic creation to artistic viewing, the conversion of natural images, textual images and perceptual images does not follow a fixed pattern, but radiates to the audience of art in a divergent manner. Different recipients will have different

understandings. It can be seen that the process of artistic creation and viewing is the source of artistic ambiguity. Xu Bing is good at grasping the universality of graphic symbols in social cognition, so that audiences with different education levels can understand the content conveyed in the works. People's understanding of symbolic language originates from people's general consensus in society, and it expounds the close connection between human relationships and cognition in social networks. As an art form constructed from ready-made materials, installation art does not express the aesthetic feeling dominated by the aesthetic form, but a concept or theme that transcends the surface and is built on the formal aesthetics, implying the artist's understanding of social reality, questioning and critique.

As one of the most representative installation artists in China, Xu Bing uses playful, metaphorical and critical techniques to present conflicting and contradictory works, focusing on the presentation of modern and contemporary social issues with the expression. In particular, the exploration of Chinese social reality and cultural conflicts makes Xu Bing's works different from Western contemporary artworks, with unique oriental language and local semantic characteristics. Observe the future orientation and expression form of contemporary installation artworks from the works of representative contemporary installation artists in China, pay attention to the expression of concepts and order in a contradictory environment, and bring new thinking to the audience.

5. Wang (2016) Research on the Landscape Approach of Installation Art Integrating into Contemporary Urban Public Space

With the continuous acceleration of urbanization, urban public space has gradually become an important field of contemporary art creation as a place to gather social life, cultural heritage and urban image display. In this context, installation art, as a conceptual and substantive form of artistic expression, has gradually entered the public space of the city. How to subtly integrate installation art into the urban landscape has become a challenging subject. This article aims to explore the landscape approach of installation art integrated into contemporary urban public space, in order to provide inspiration for creating a rich and diverse urban art environment.

The integration of installation art and urban public space involves how to create an artistic scene with unique charm in a busy urban environment. Landscape approaches play an important role in this process. First of all, through careful landscape design, artists and landscape architects can organically combine installation art with the surrounding environment to create a harmonious visual effect. Secondly, lighting design is also a key link. Reasonable lighting can highlight the characteristics of installation artworks, making them the highlights of the city at night. In addition, traffic planning also needs to consider how to enable citizens to enjoy and interact with these installation works of art on the premise of ensuring smooth traffic. Considering various factors comprehensively, a unique urban art landscape is created. Social interaction and cultural inheritance are one of the important goals of integrating installation art into urban public space. Installation artworks can often arouse the interest and interaction of citizens, and become a place for citizens to gather and communicate. This kind of social interaction not only helps to enhance the city's community cohesion, but also injects new elements into the city's cultural heritage. The works of art themselves can carry the history, values and cultural symbols of the city, thus making the urban space more colorful.

The landscape integration of installation art in contemporary urban public space is not only an exploration of artistic creation, but also a part of urban cultural construction. Through reasonable landscaping methods, installation artworks can be integrated with the urban environment, enriching the urban landscape, promoting social interaction, and inheriting culture. In practice, however, a balance needs to be struck between artistry and utility, ensuring that installations are both artistically engaging and functional in an urban setting. Future research can continue to focus on cases in different cities, sum up experience, deepen the understanding of the landscape-based approach of integrating installation art into urban public space, and provide useful reference for urban cultural construction and artistic development.

2.6.2 Related Oversea Literature

6. Marchese (2015) Media Art and the Urban Environment: Engendering Public Engagement with Urban Ecology

This literature explores the question of how new media artists can engage with urban ecology in innovative ways, highlights the role of artists as agents of

technological change, and examines new ways of seeing, representing and connecting in urban environments.

The book explores engagement with urban ecology through a survey of various artists, artworks, and performances. The authors assess how data from smart cities can be used to create artworks that reshape residents' understanding of urban spaces. By reimagining urban information, the book explores the dynamic transformation of urban spaces. The book also discusses city dwellers' interactions with street art, including community-based collaborative art projects and public digital media installations. Bringing together the unique perspectives of practicing artists, architects, urban planners, and leading critical theorists, the book presents questions of urban engagement at the intersection of art, science, technology, and culture.

"Media Art and the Urban Environment: Engendering Public Engagement with Urban Ecology" explores the interaction between new media art and urban ecology from a broad perspective. Through in-depth analysis and rich subject matter, the book provides useful insights for researchers in human-computer interaction, visualization, and urban studies, as well as inspiration for digital artists.

7. Van der Meulen (2019) Going Digital? New Media and Digital Art at the Stedelijk

In this article, the authors explore how the Stedelijk Museum in Amsterdam deals with time-based media, from early video art to the latest forms of digital art. Not only does the Stedelijk Museum face the same problems associated with digital art as most modern and contemporary art museums, but it has a solid history of collecting and exhibiting time-based media since the 1960s and 1970s.

The Stedelijk Museum has collected time-based media since 1974. This allows us to discuss more concretely the task of curating and collecting these new forms of artistic expression in the digital age. Many experts, such as Beryl Graham, Sarah Cook and Christiane Paul, have highlighted the need for modern and contemporary art museums to undertake a serious rethink of existing curatorial models and collecting policies when it comes to new media and digital art. Paul pointed out in his 2008 article that traditional museums must transform to accommodate new media art. Digital art has its history, even a "media art history".

Since the 1960s, the complex intersection of art and technology has created a vibrant and productive atmosphere in the arts of new media, including video, slideshow, film, audio, and computers. Database Art opens and expands ideas and approaches to archives and collections in the digital world. Database art is a digital art form that uses digital archives as a source of artistic creativity and a form of critical inquiry. All database-related aspects, such as collecting, storing, mapping, and visualizing data, are part of database art, but the more critical and reflective variants also question the concepts and structures of databases, and the biases programmed into them.

The Stedelijk Museum's explorations in digital art and new media provide us with a unique perspective on how art and technology interact, and how museums can adapt to this change. As technology evolves, artists and designers are finding new ways to express their creativity, and to question and critique the biases and politics behind digital technology.

8. Gere (2008) *New Media Art and the Gallery in the Digital Age*

With the rapid development of digital technology, new media art has become an important part of contemporary art. This field is not just about making art itself, but how those works are displayed and interpreted in galleries and museums in the digital age. This review explores this topic in depth, with a particular focus on how new media art affects the way galleries and museums operate and display.

New media art is an art form that covers various digital and electronic technologies. Since the initial application of the Internet and the possibility of interactive multimedia 20 years ago, new media art has undergone tremendous social and cultural transformation. The pervasiveness of digital technology has not only changed the way art is made, it has also had a profound impact on the way galleries and museums operate. These institutions have had to confront the challenges of how to utilize new technologies for display and dissemination, how to compete in a media-saturated world, and how to engage with the new artistic practices made possible by these technologies. Galleries and museums must learn how to take advantage of new communication and communication technologies and how to compete in a world increasingly dependent on digital media. In addition, collecting, curating and interpreting new media art presents its own special challenges. On another level, these challenges are deeper: new media art raises new questions and perspectives on the

understanding of art, culture and society. This requires galleries and museums not only to adapt to new technologies, but also to rethink and shape their roles and purposes.

New media art brings unprecedented opportunities and challenges to galleries and museums in the digital age. From a technical, practical and theoretical point of view, exploration in this field continues. Galleries and museums must constantly learn and adapt in order to find their place in this changing art landscape.

9. Gardiner & Gere (2016) Art practice in a digital culture

Art practice in the age of digital culture is undergoing profound transformation. New information and communication technologies are changing the way art history and art is practiced, and sometimes these changes may be overlooked or resisted.

A growing number of artists work at universities, and their work is promoted and supported through the funding and infrastructural resources provided by these institutions. This new paradigm of art as research has the potential to profoundly affect our understanding of the role of the artist and the practice of art in society. Artists interact directly with technology or through partnerships with technologists, enabling the progression of creative practice through advanced methods. New media art such as computer graphics, virtual art and Internet art have emerged with the development of digital technology. The new media art world overlaps with, and even alters some aspects of, the traditional gallery art world. Social media plays a prominent role in people's daily life. Many fine art photographers and institutions have created accounts on social media in response to this trend. Art photographers create artwork on social media based on issues such as snapshots, selfies, and identity. These questions relate to popular photography and reflect the tension between art and popular photography. The changes of the information age have obvious effects in all social activities, and artists embrace these changes through digital art as "new media". The phenomenon of digital systems as performers has attracted particular attention.

Artistic practice in the age of digital culture is undergoing a profound transformation. From seeing art as a new paradigm of research, to the direct interaction of artists with technology, to the emergence of new media art and artistic photography on social media, these changes are reshaping the role and practice of art.

This transformation not only reflects technological advances, but also reveals the complex interplay between art and society, culture and identity.

10. Stogner (2011) *The Immersive Cultural Museum Experience -- Creating Context and Story with New Media Technology*

Maggie Burnette Stogner's dissertation examines a range of immersive and experiential media technologies and how they can be used to engage visitors within the narrative context of cultural and historical artifacts.

The key words of this paper include immersive, experiential, culture, case study, new media technology and media technology. Modern storytelling approaches suggest a new direction for museum experience design, combining interaction design, interactive storytelling, and artificial intelligence. Museums are transforming into hybrid spaces where virtual (digital) information coexists with tangible artifacts. The wealth of resources in the VR development environment makes it easier to create hyper-realistic "ideal" scenarios. This study presents for the first time the concept of cultural virtual reality, which creates new spaces between virtual and physical spaces. Augmented reality (AR) storytelling improves user experience compared to AR ebook apps. Museums are deeply entrenched in contemporary society as collectors, protectors and guardians of historically important artefacts. As society changes demographically and generationally, the traditional role of museums is being challenged to foster wider society's custodian interest in historically important artefacts.

The immersive cultural museum experience is a multidimensional field that involves the use of immersive and experiential media technologies to enhance the narrative context of cultural and historical artifacts. Research in this area covers a wide range of technologies from interaction design and artificial intelligence to virtual and augmented reality. Through these technologies, museums are transforming into hybrid spaces where virtual and physical spaces coexist, providing visitors with a richer and more engaging experience. Future research may further explore how these techniques fit into specific cultural and historical contexts, and how they can be most effectively incorporated into museum and exhibit design.

CHAPTER III

RESEARCH METHODOLOGY

This chapter uses qualitative research methods, and the researcher selects the installation art Juiong Beibei of Xiongdong Street in Dalian City, as the research area. Since this area is the only commercial space with permanent installations that exists in Dalian, the researcher selected key informants in the area as research leads. Therefore, the study is conducted according to the following steps.

3.1 Scope of Research

3.1.1 Research Content

3.1.2 Research Period

3.1.3 Research Methods

3.1.4 Research Area

3.1.5 Population and Sample

3.2 Methods of Conducting Research

3.2.1 Research Tools

3.2.2 Data Collection

3.2.3 Organizing and Analyzing Data

3.2.4 Presentation of Research Results

3.1 Scope of Research

3.1.1 Research Content

1. Historical background of the origin of immersive new media installation art in urban commercial space in Dalian
2. The current situation and problems of immersive new media installation art in urban commercial space in Dalian
3. Construction model of design application of immersive new media installation art in urban commercial space in Dalian

3.1.2 Research Period

Study time: September 2022 to October 2023

Table 3. Timetable for the Research

No.	Period	Time
1	Gather general information of the research	3 months
2	Plan for field research	2 months
3	Field research and data collection	4 months
4	Data analysis	2 months
5	Conclusion and submit the result	3 months

Source: Sui Guanglong (2023)

3.1.3 Research Methods

This research is a qualitative research method to study the application of immersive new media installation art in the urban commercial space of Dalian, and the researcher collected data from relevant literature and research papers. The researcher uses field research to collect data and information through basic surveys, observations, interviews, focus group discussions. In addition with photographs, video and audio recordings are taken. Analyze data using concepts, theories, literature, and related research, and use descriptive analysis methods to classify data according to research objectives.

3.1.4 Research Area

Xiongdong Street, Bingshan Huigu, No. 888 Southwest Road, Shahekou District, Dalian City, Liaoning Province, China.

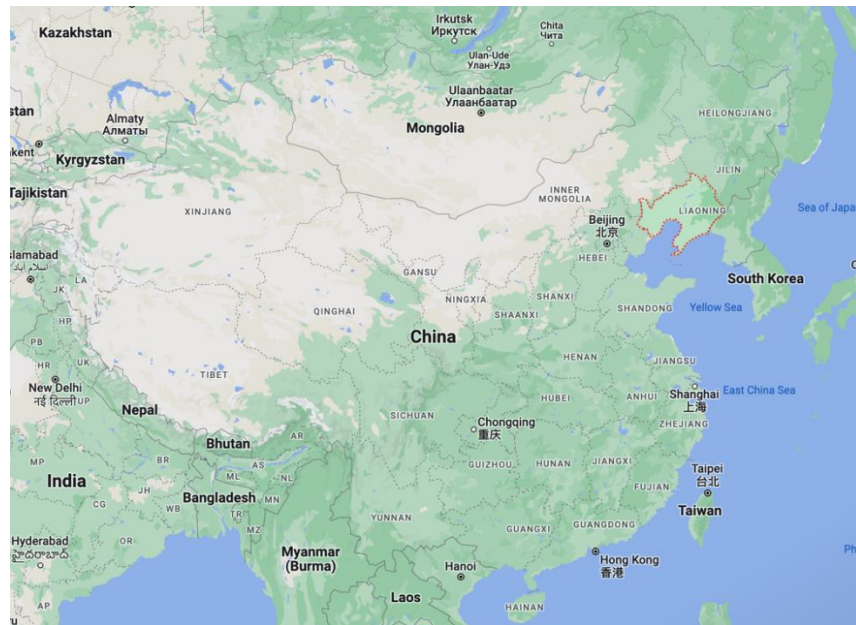


Figure 6. China Liaoning Province Map

Source: <https://goo.gl/maps/NXZdt2sBBZ1McVXS8>

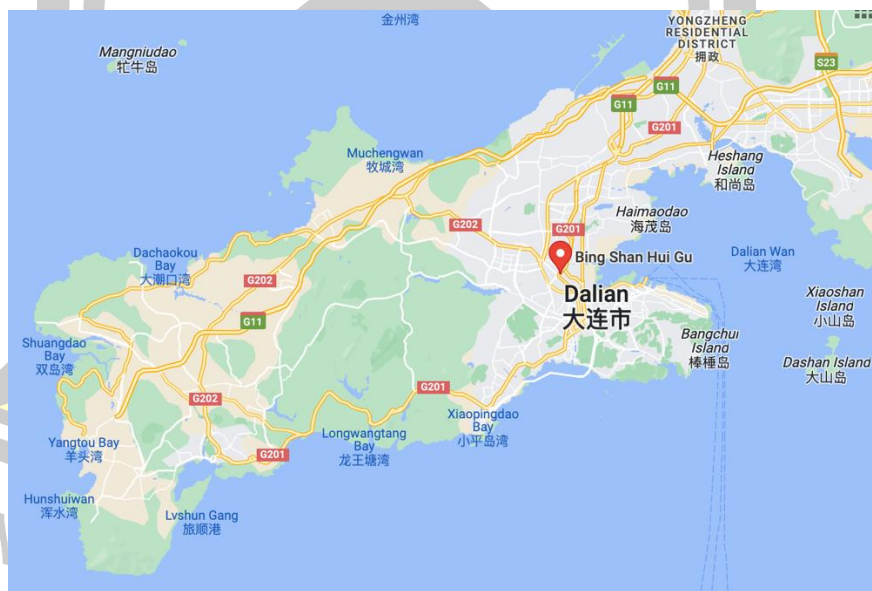


Figure 7. Map of Dalian City, Liaoning Province, China

Source: <https://goo.gl/maps/2WpmGYUsXdnjeP8G8>

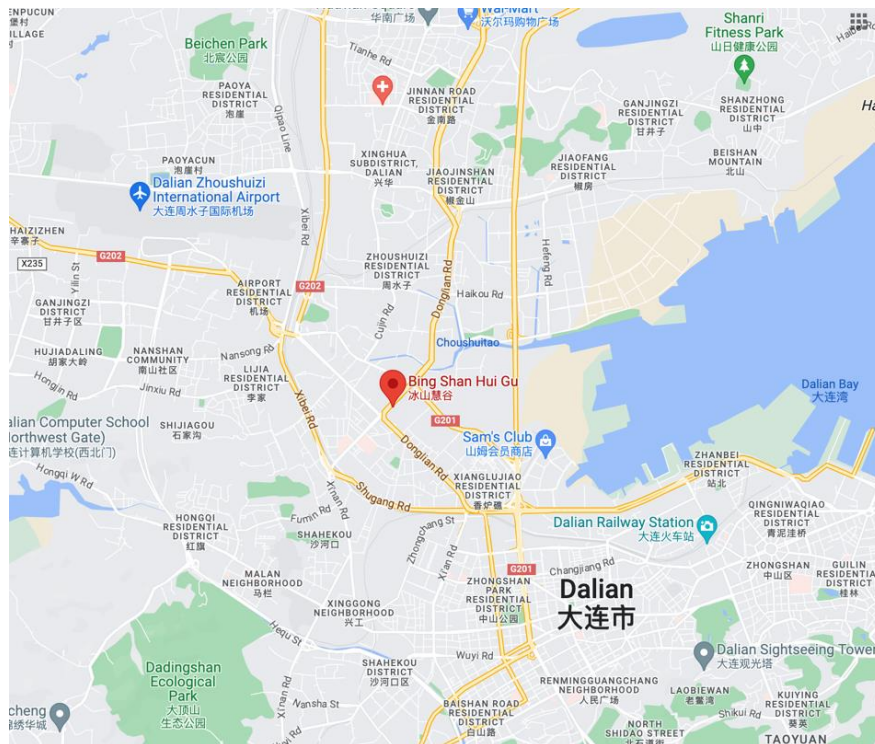


Figure 8. Xiongdong Street Location

Source: <https://goo.gl/maps/HyP9U7nCDrmqUcxi6>

3.1.5 Population and Sample

Based on the research objectives, used purposive sampling the researcher selected three groups of people as the interviewees in the field research. They are key informants, casual informants and general informants. The following selected criteria and selected personnel will be presented.

1. Key Informants:

The criteria for selecting key informants are:

1.1 Personnel with rich professional knowledge and experience in the fields of art, new media technology and related fields, who can provide in-depth insights into the creation, technical application and audience experience of immersive new media installation art. Can be an installation artist, curator, designer, technology engineer, etc.

1.2 Scholars or researchers with academic background and research results related to Dalian urban commercial space can provide information and opinions on

theoretical research, historical background, domestic and foreign case analysis of immersive new media installation art, etc.

1.3 Urban business planners who are currently deploying immersive new media installation art projects in Dalian urban commercial spaces to understand the challenges, solutions and experience sharing they face in the projects.

1.4 Representatives from the cultural department of Xiongdong Street in Dalian City will establish contact with relevant personnel from the cultural department of the municipal government and be responsible for project compliance and urban planning.

Based on the above selection criteria, four key informants were selected, including:

Xiao Di, Member of the All-China Youth Federation, leading talent of the National Ten Thousand Talents Plan, innovative and entrepreneurial talent of the Ministry of Science and Technology, founder of the theory of "Screaming Aesthetics", cultural tourism project planning expert, mechanical installation artist, founder of BoTop Culture, founder of Wooden Ox and Flowing Horse, and Chinese amusement machine Vice president of the Virtual Reality Association of the Amusement Park Association, director of the ITIA International Tourism Funding Association, and a leader in giant mechanical bionic (cultural tourism) equipment. (Jia & Xiao, 2021)

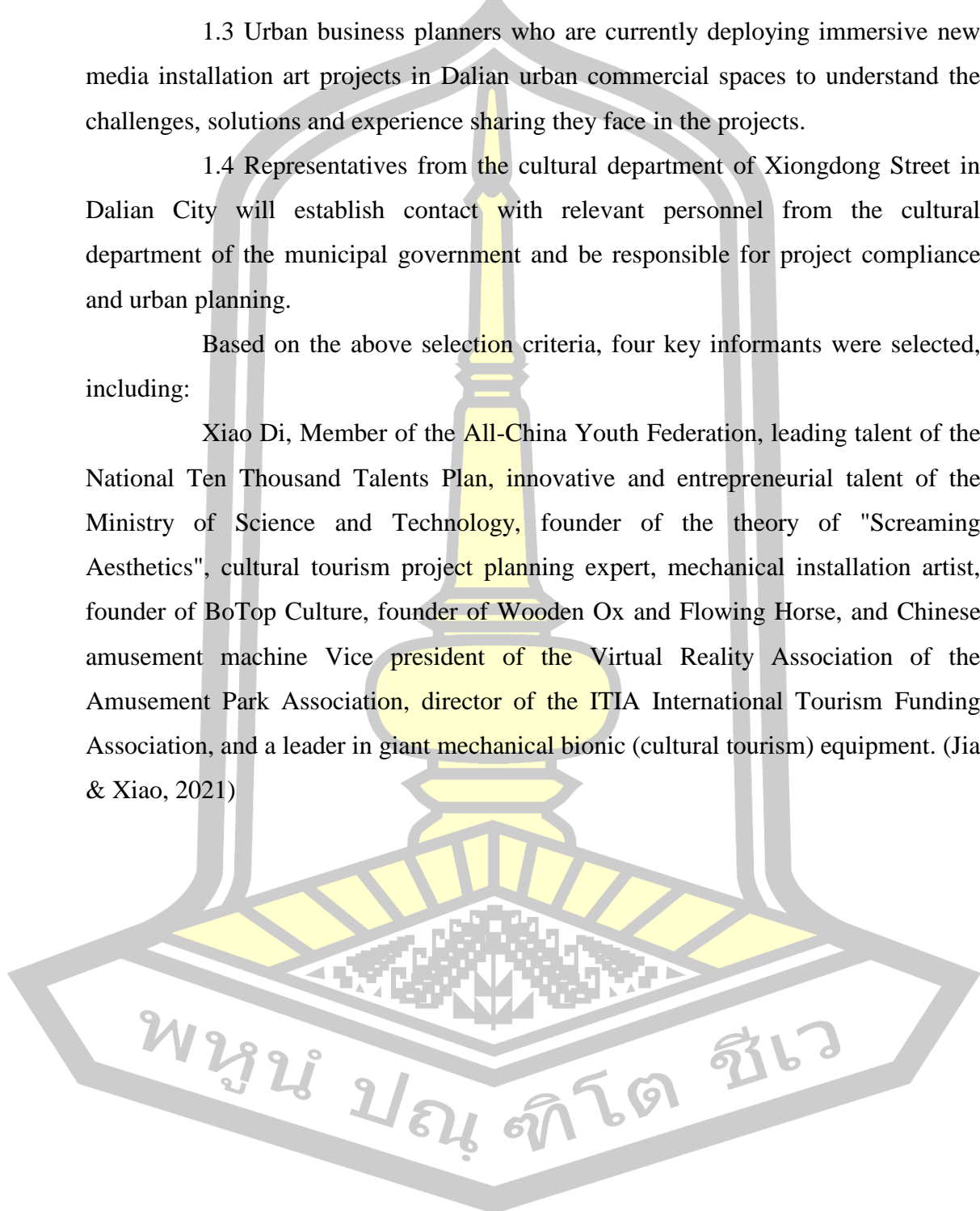




Figure 9. Xiao Di

Source: Sui Guanglong (2023)

Jiang Lianzhang, Co-founder, shareholder and senior manager of Dalian BoTop Culture Technology Co., Ltd.; General Manager of Dalian Bingxiong Technology Co., Ltd. (Dalian Xiongdong Street)



Figure 10. Jiang Lianzhang

Source: Sui Guanglong (2023)

Liu Maoxin, Project Manager of Cultural Tourism Division of Dalian BoTop Culture Technology Co., Ltd.



Figure 11. Liu Maoxin

Source: Sui Guanglong (2023)

Zhang Fu, Dalian BoTop Culture Senior Mechanical Engineer.



Figure 12. Zhang Fu

Source: Sui Guanglong (2023)

2. Casual Informants:

The selection criteria for the 10 general insiders and qualified representatives are as follows:

2.1 The media and publicity department of Dalian Urban Commercial Space Installation Art is responsible for disseminating project information and publicity activities to attract more audiences.

2.2 Dalian Xiongdong Street cultural event and exhibition planners, these people can help organize art exhibitions or promotional activities to attract audiences.

2.3 The Dalian Xiongdong Street marketing team needs to conduct interviews with marketing professionals in terms of project publicity and promotion.

3. General Informants:

Audience representatives: The audience is composed of two parts: residents near Dalian Xiongdong Street business district, and the second is tourists participating in the Dalian Xiongdong Street installation art. If locals are insiders, tourists are outsiders. They stand from different angles and inevitably have different views. Ensure the representation and diversity of this group of members, including different professional backgrounds, cultural backgrounds, gender, age, etc. This allows for more comprehensive and rich perspectives and insights, promoting in-depth discussions.

At the same time, potential information providers are evaluated to understand their professional judgment and credibility to ensure that the information provided is reliable and of reference value. 15 people in total.

3.2 Methods of Conducting Research

3.2.1 Research Tools

The research tools used in this dissertation are mainly interview and observation on the basis of data collection and fact observation, the method focuses on process and structure analysis, strives to obtain target field survey data, and conducts qualitative research and interpretation on the research object. In order to obtain the research data, the researcher designed the questionnaire and designed the corresponding interview form and observation form according to different research objects. This thesis mainly adopts the following research method:

1. Basic survey method

This method is one of the most useful and important methods in social and cultural studies. Based on the analysis and collection of relevant research results, it is believed that cultural factors should be taken into account. With this as the starting point, through the analysis of literature, the researcher can understand the origin of immersive new media installation art in Dalian's urban commercial space, understand the development of related art at various stages and current changes, and include relevant theoretical research and case studies on innovative immersive new media installation art design. Provide documentation for this research.

The literature for this article is mainly drawn from the following sources.

1.1 CNKI

China Knowledge Infrastructure Project (CNKI) was initiated by Tsinghua University in China and established in June 1999. It is an information construction project aimed at realizing the sharing and value-added utilization of knowledge resources in the whole society.

1.2 BoTop Culture Official Website

Founded in 2005, BoTop Culture is a well-known high-tech cultural tourism project creative design company in China. It has more than 100 innovative research and development technology patents and is committed to creating a screaming landmark for China's cultural and commercial tourism industry. The core business is to create city-level IP core attractions, popular cultural and business tourism projects that combine culture, technology and art. It is a leader in the creative planning of cultural tourism projects, immersive themed cultural experience projects and giant self-defense art installations.

1.3 Google Scholar

Google Scholar is a free academic search engine service provided by Google, designed to help scholars, researchers and students find academic documents, academic papers, research reports and other academic resources. Google Scholar can search academic literature in various fields, including journal articles, conference papers, theses, books, patents, etc. It has built a huge academic database by automatically crawling information from academic publishers, universities, research institutions and other institutions around the world. Google Scholar can help users

understand the most important academic literature in a certain field, and help researchers easily grasp research trends.

1.4 Dalian Municipal People's Government Official Website

The Dalian Municipal People's Government is a first-level state administrative agency in Dalian city, Liaoning Province, the People's Republic of China. It is elected by the Dalian Municipal People's Congress and is responsible for and reports to the Dalian Municipal People's Congress. The standing committee of the Dalian Municipal People's Congress is responsible for and reports on its work. This website will publish the latest news in various aspects such as current politics, economy, culture and society.

2. Observation method

It refers to that the research observes the research object in a natural state to obtain planning materials. In this research, the researcher has gone deep into the specific social environment of new media installation art, including personally participating in and investigating cultural tourism activities, and understanding the relationship between installation art culture and the local commercial space environment and cultural tourism. Depending on the degree to which the observer is integrated into the field work, observation methods can be divided into participant observation and non-participant observation.

Participant observation refers to in-depth study of the living conditions of the subject, weakening personal identity and willingness to participate, and conducting implicit observations during the actual participation process. In this study, the researcher first became familiar with Dalian's urban commercial space. Then the researcher participated in observing the current status of interactive activities of new media installation art and implicitly observed the current status and problems of the commercial environment.

Non-participant observation means that the observer needs to maintain a certain distance from the research object. In this study, the researcher observed the relationship between new media installation art performance activities, human interaction activities and the business environment from a third-party perspective. In order to obtain the current status and problems of new media installation art in Dalian urban commercial space.

Observation records: including taking relevant photos and videos of new media installation art performance activities, video commercial activities, and cultural activities.

3. Interview method

The main purpose of interviews is to obtain research material through formal or informal conversations with research subjects. The interviewees of this study include new media installation artists, urban commercial industry managers, cultural tourism managers, technicians, directors of Dalian Urban Planning Bureau, tourists, and residents, etc. In-depth interviews will be conducted with the interviewees. In addition, there is an interview record sheet.

According to specific arrangements and setting under different circumstances, interviews can be divided into structured interviews and unstructured interviews.

Process of making the questionnaire (based on research objective).

3.1 Bring it to the advisor to examine.

3.2 Be altered in accordance with advisor editing.

3.3 Before using, have it inspected by an expert.

3.4 Modified in accordance with expert advice before being used in the fieldwork.

Interview record: make a table listing the date, location and main information of the interviewee, such as name, age, gender, and job. Ask questions based on the designed questionnaire and place key topics in the theme design of this interview.

4. Focus group discussion

A steering group will be formed by installation artists, Dalian urban commercial space managers, senior engineers, Dalian urban planners, tourists and resident representatives to collect historical background data on immersive new media installation art in Dalian urban commercial space. Installation art in Dalian urban commercial space Data on the current situation and issues in the project, as well as data on opinions and discussion results on designing a theoretical model for new media installation art.

3.2.2 Data Collection

1. Basic survey

The basic survey of this research mostly adopts the method of literature research, through online retrieval and offline retrieval to find domestic and foreign literature related to Dalian urban commercial or other urban commercial new media installation art, and to find and analyze relevant research results in it, so as to provide reference for the research. Useful reference data and underlying theory are provided.

Types of Documentary Materials Collected:

1.1 Historical documents, historical biographies, natural resources, human resources, etc. of Dalian City.

1.2 The establishment and development history of Dalian's urban commercial space, information on new media installation art, commercial activities, peak visitor volume, budget, and range of tourist groups.

1.3 Regulations and policies promulgated by the national government related to the development of urban commercial space and new media installation arts, relevant laws and policies promulgated by Liaoning Province, and relevant laws and policies promulgated by Dalian city, etc.

1.4 Relevant articles and tweets from mass media and news, etc.

2. Observation records

According to participatory and non-participatory observation, the observation data mainly includes new media installation art in Dalian urban commercial space, existing commercial activities, urban commercial space architectural form, distribution of commercial content in each space, installation performance activities, and participation proportion of each customer group.

The method of observation and recording is basically taking photos or taking notes. By recording the installation art in Dalian's urban commercial space, it is easy to extract the required patterns and graphics from it. Recording commercial activities and tourists can provide a clear understanding of the main groups currently participating in urban commercial spaces. In this method, more and richer data can be recorded.

3. Interview method

The interview data will be collected in the form of recording and writing. The interview method is one of the most direct methods of data collection. In this

method, the interview time and interview links should be set in advance, and after the end, the interview records of different personnel should be summarized and recorded.

This research obtains valuable information and research materials through dialogues with the researched personnel. The main interviewees of this research mainly include relevant management personnel of Dalian urban commercial space; designers; artists and producers engaged in the design, development, and operation of installation art for urban commercial spaces in Dalian; tourists of different age groups who visit Dalian's urban commercial space and consumers who participating in commercial activities.

Main interview question: data, location, interviewees (including name, nationality, gender, age, occupation, position), and then raise research-related questions.

3.1 After the interview, it should be sorted out and classified according to the content of the interview in urban commercial space in Dalian city.

3.2 For the interview data, text records are needed to facilitate integration and management, and provide a basis for the demonstration of this research. After collecting the data, it is necessary to review the data in combination with other relevant research, so as to conduct data selection and analysis research from an objective perspective.

3.3 In interviews, the thoughts of managers ideas are very useful. After the interview, competitors need to be analyzed and consolidated to ensure the interview record is valid. Collect opinions from managers and relevant artists to conduct research on the development of installation art in urban commercial spaces in Dalian.

4. Focus group discussions

Define research objectives and research questions:

First, clarify the research goals and questions. Based on the three research objectives of the study, the following steps were performed.

Recruit focus group members:

Identify focus group participants who should represent the target audience or have experience relevant to the research topic. Participants include Dalian urban commercial space managers, artists, audiences, citizens, etc.

Develop focus group guidelines:

Develop a guide that includes open-ended questions that can guide the discussion. Questions were relevant to the issues of the research objectives, while being provocative and open-ended so that participants could freely express their opinions and experiences.

Schedule a focus group meeting:

Schedule a focus group meeting and choose an appropriate location and time. Make sure the meeting can accommodate participants and provide a comfortable environment.

Conduct a focus group discussion:

During the focus group session, participants were led to discuss the research questions. The discussion process was open, allowing participants to freely express their views and ideas. The researcher actively listened and recorded the discussion.

Focus group discussions are a powerful data collection method that is particularly suitable for qualitative research and can provide an in-depth understanding of participants' perspectives and experiences. When studying how immersive new media installation art is used in urban commercial spaces in Dalian, focus group discussions can help researchers gather various perspectives and insights to gain a more comprehensive understanding of the topic.

3.2.3 Organizing and Analyzing Data

Firstly, the collected research data is summarized, classified according to the expected research objectives, integrated into a summary table, and the integrity of the research data is checked. For analyzing data, primarily using data in the summary sheets to answer research objectives using triangulation techniques and comparisons based on time, place, activity, people. Secondly, the researcher will use basic statistics such as percentages. As well as using theory to validate research findings. To ensure the completeness, adequacy and appropriateness of the analysis and conclusions.

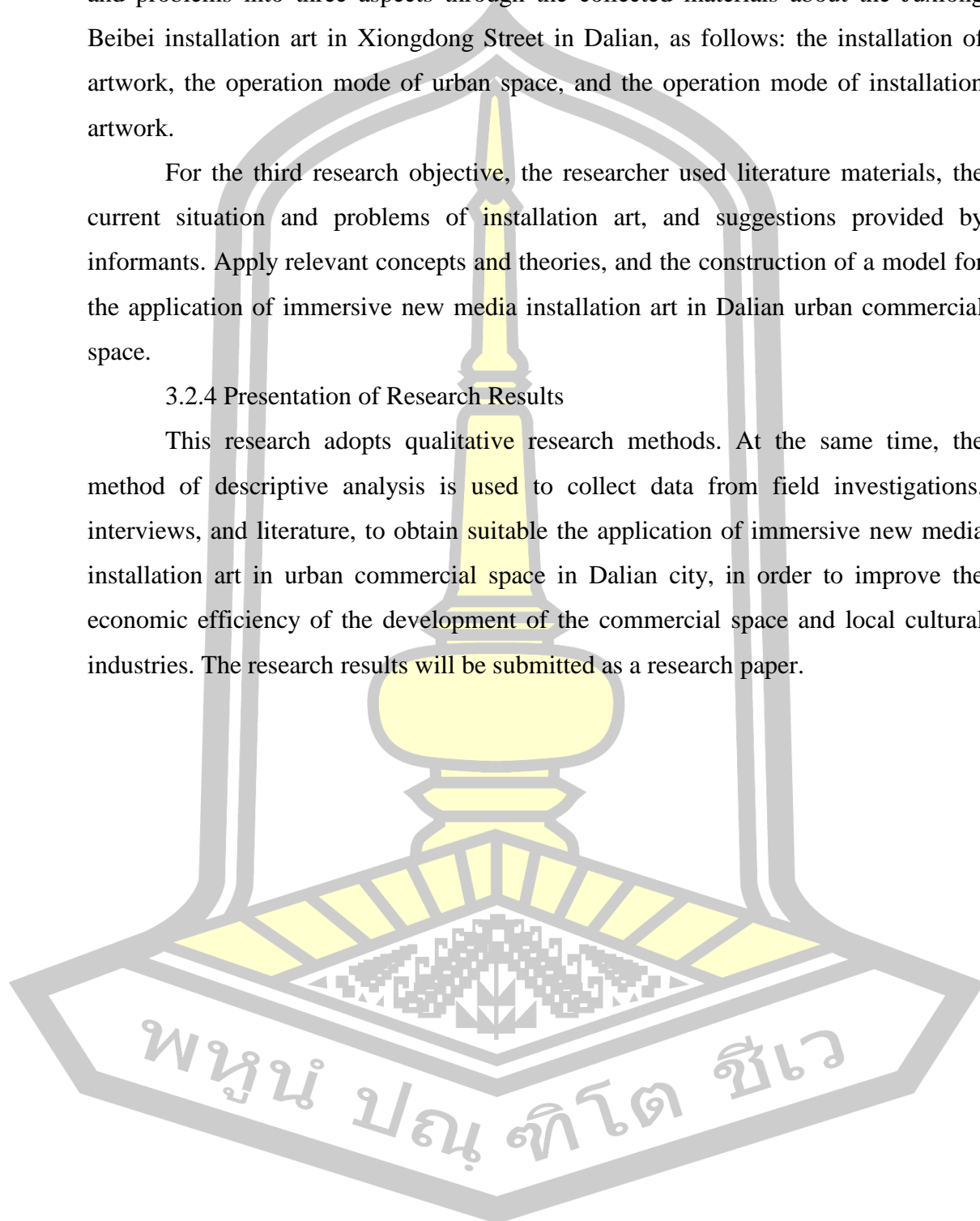
For the first research objective, the researcher analyzed and sorted out the historical development background of installation art in urban commercial space in Dalian, and divided it into four stages, as follows: the initial stage, the prosperous stage, the diversified stage and the contemporary stage.

For the second research objective, the researcher divided the current situation and problems into three aspects through the collected materials about the Juxiong Beibei installation art in Xiongdong Street in Dalian, as follows: the installation of artwork, the operation mode of urban space, and the operation mode of installation artwork.

For the third research objective, the researcher used literature materials, the current situation and problems of installation art, and suggestions provided by informants. Apply relevant concepts and theories, and the construction of a model for the application of immersive new media installation art in Dalian urban commercial space.

3.2.4 Presentation of Research Results

This research adopts qualitative research methods. At the same time, the method of descriptive analysis is used to collect data from field investigations, interviews, and literature, to obtain suitable the application of immersive new media installation art in urban commercial space in Dalian city, in order to improve the economic efficiency of the development of the commercial space and local cultural industries. The research results will be submitted as a research paper.



CHAPTER IV

RESEARCH RESULTS

This chapter will describe the historical background, current situation and problems of new media installation art in Dalian's urban commercial space, and present a theoretical model of immersive new media installation art in Dalian's commercial space. Data came from literature reviews, interviews, observations and focus group discussions. The theoretical model consists of seven groups of variables: Language of art; Description of the model; Analysis: elements and principles of art; Interpretation: to judge whether or not the artwork succeeds or fail; The proposed cost and time needed for the construction of the mode ; The accessibility of the model; Comments of authority Therefore, the next chapter reports a summary of the study, a discussion of the findings, and recommendations for future research.

4.1 Historical background of the origin of immersive new media installation art in urban commercial space in Dalian

4.1.1 The historical background of the initial stage of immersive new media installation art in Dalian

4.1.2 The historical background of the prosperous stage of immersive new media installation art in Dalian

4.1.3 The historical background of the diversified stages of immersive new media installation art in Dalian

4.1.4 The historical background of the contemporary stage of immersive new media installation art in urban commercial space in Dalian

4.2 Current situation and problems of immersive new media installation art in urban commercial space in Dalian

4.2.1 Current situation of immersive new media installation art in urban commercial spaces in Dalian

4.2.1.1 Current situation of the installation art

4.2.1.2 Current situation of urban space operation mode

4.2.1.3 Current situation of the operation mode of installation art

4.2.2 Problems of immersive new media installation art in urban commercial space in Dalian

4.2.2.1 Problems with Installation Art

4.2.2.2 Problems of urban space operation mode

4.2.2.3 Problems with the operation mode of installation art

4.3 Present construction model of design application of immersive new media installation art in urban commercial space in Dalian

4.3.1 Language of art

4.3.2 Description of the model

4.3.3 Analysis: elements and principles of art

4.3.4 Interpretation: to judge whether or not the artwork succeeds or fail

4.3.5 The proposed cost and time needed for the construction of the model

4.3.6 The accessibility of the model

4.3.7 Comments of authority

This chapter is divided into three parts. The first part introduces the historical background of new media installation art in Dalian's urban commercial space. The second part introduces the current situation and problems of new media installation art in Dalian's urban commercial space. The third part is a model for the construction of immersive new media installation art in Dalian's urban commercial space. The research results were proposed through the descriptive analysis. The results are as follows.

4.1 Historical Background of the Origin of Immersive New Media Installation Art in Urban Commercial Space in Dalian

This part is explained in four stages as follows: the initial stage, the prosperous stage, the diversified stage, and the contemporary stage.

4.1.1 The Historical Background of the Initial Stage of Immersive New Media Installation Art in Dalian

The end of the Chinese Cultural Revolution, a large-scale political movement in Chinese history, which began in 1966 and lasted for nearly a decade, had a great impact on Chinese society and culture. During this period, traditional culture and art were severely restricted and criticized, many cultural heritages were destroyed, artists

were persecuted, and creation was strictly restricted. However, with the death of Chairman Mao Zedong in 1976, the Cultural Revolution gradually came to an end, the political situation in China gradually stabilized, and the reform and opening up policy was implemented, which allowed artists to start creating and thinking again. After the end of the Cultural Revolution in China, the country gradually implemented the policy of reform and opening up. During this period, artists gradually emancipated their minds and began to come into contact with international art trends and concepts. Emerging art forms such as Western avant-garde art and installation art began to be introduced into China, arousing Chinese artists' interest in new forms of expression.

As early as the late 1980s, the installation art in Dalian's urban commercial space was presented in the form of pure installation art. Installation art, also known as environmental art or ready-made art, is a form of artistic expression that focuses on space and environment. Often presented in three dimensions, the period conveys the artist's creativity and ideas through the combination of found objects or materials. (Wu, 2021)

The initial stage is the early development stage of Dalian installation art, which spans from the late 1980s to the early 1990s. At this stage, Chinese contemporary art gradually moved from closed to open, and Dalian artists began to get in touch with the internationally popular trend of installation art, and tried to introduce it into local creations. The trend of installation art was introduced into China. In the early 1980s, with the improvement of China's opening to the outside world, international contemporary art and avant-garde art were gradually introduced into China. Some artists in Dalian came into contact with installation art and were attracted by its unique expression. Through art magazines, books, correspondence between artists, participation in lectures and exchanges with international artists, they learned about the trend of international popular installation art as well as the concept and creation techniques of installation art. The works of some of these international artists were introduced to Dalian and other places through pictures and text introductions, which aroused the interest and curiosity of Chinese artists. Artists' enlightenment and self-exploration, some artists in Dalian began to conduct in-depth study and research on installation art. They became exposed to installation art and were inspired by international artists such as Marcel Duchamp and Joseph Beuys. By

reading foreign art magazines, attending lectures and exchange meetings, they strive to understand the concept and creative techniques of installation art. They communicate with domestic and foreign artists by participating in activities such as art lectures, seminars and exhibitions held at home and abroad. Some artists use rare foreign art books and magazines at that time to learn more about the concepts and techniques of installation art. These learning and enlightenment processes have broadened their horizons, allowing them to understand the uniqueness of installation art, while attempting to combine installation art with Dalian's local culture and social issues.

Creative Practice and Exhibition Activities: In its infancy, installation artists present their work through individual or group exhibitions. These exhibitions were held in galleries, art museums or other public places. These exhibitions provided opportunities for the public and critics to learn about installation art, and at the same time promoted the dissemination and acceptance of installation art in the local area, attracting the attention of some audiences and critics.

The transformation of artistic concepts. At the initial stage, Dalian's installation artists gradually changed their artistic concepts. Liberated from the two-dimensional and three-dimensional representations of traditional painting and sculpture, no longer limited to traditional painting and sculpture forms, and began to pay more attention to space, environment and audience participation. Installation art emphasizes the interactive relationship between the artwork and the real environment, making the audience a part of the work, which makes the expression of art more diverse, thus surpassing the boundaries of traditional art.

In the localization practice of installation art, some artists in Dalian began to combine the concepts of installation art they learned with their own creative practice. They use locally available materials and elements to express installation art from their own unique perspectives. The installation art itself emphasizes the relationship with the environment. These artists place the installation works in specific places or public spaces in Dalian to interact with the urban environment and express their thoughts on local cultural and social issues. Through their unique creativity and artistic expression, they set out to try to set off a revolutionary trend in the local art scene. Solo and group exhibitions. At the initial stage, installation artists in Dalian may

display their works through individual or group exhibitions. Co-organize an art exhibition, or attend a local art exhibition salon. These exhibitions provide opportunities for the public and critics to learn about installation art, and also play a role in promoting the dissemination and acceptance of installation art in the local area.

The transformation of artistic concepts. At the initial stage, Dalian's installation artists gradually changed their artistic concepts. The traditional forms of painting and sculpture were gradually unable to meet their needs for artistic expression, and they began to explore the use of different media and materials, focusing on the creation of space and the participation of the audience. Installation art brings them a new artistic language and form of expression, enabling artists to express their creativity and concepts more freely, thus surpassing the boundaries of traditional art.

During this period, there was not much installation art in Dalian. It was mainly urban sculptures, and the installations were mostly displayed at some art exhibitions. (Li, interviewed, 2023)

The specific historical process of the initial stage. The development of Dalian installation art began after the end of the Chinese Cultural Revolution. With the implementation of the reform and opening up policy, Chinese artists began to come into contact with the international trend of installation art. Through self-exploration and practice, Dalian artists have brought installation art into the local area, and gradually combined it with Chinese culture and social issues. With the help of learning and enlightenment, they localized installation art, and let more people understand the unique charm of installation art through individual and collective exhibitions. This period laid the foundation for the subsequent development of Dalian installation art, showing the active exploration and innovative spirit of Chinese contemporary artists on the global art stage. These early attempts laid the foundation for the gradual growth of Dalian installation art, and paved the way for more artists to join and explore later.

4.1.2 The Historical Background of the Prosperous Stage of Immersive New Media Installation Art in Dalian

Dalian's installation art flourished mainly in the 1990s. Based on the initial stage, Dalian installation art has received more attention and development. Artists are

more mature in creation and their works are more in-depth and expressive. The following is a detailed interpretation of the flourishing stage of Dalian installation art.

Gathering and exchange of artists: During the prosperous stage, some famous installation artists in Dalian, such as Zhang Dali, Liu Xiaoguang, Wei Dong, etc. emerged one after another. They have gradually formed a close group in Dalian's art circle, creating and communicating with each other. According to the literature records and the artist's recollection at that time, these artists often discussed artistic ideas together, observed each other's works, and borrowed from each other in their creation. They also actively participated in Dalian's art exchange activities, such as artist symposiums and workshops, which promoted the improvement of their creative level. The formation of this kind of group enables installation artists to jointly discuss artistic concepts, techniques and creative methods, inspire each other, jointly explore the form and connotation of installation art, and improve their artistic level to a certain extent.

Deepening of concepts and creations: During the prosperous period, installation artists in Dalian combined their creations with social and environmental issues. Begin to gradually develop a deeper concern for social and environmental issues. Artists try to explore more complex and profound themes in their creation, making the installation artworks more ideological and artistic. For example, Liu Xiaoguang's work "Green Dome" takes the reflection on environmental destruction and ecological issues as the theme, and shows the relationship between human beings and nature through installations. Zhang Dali's work "Steel City" focuses on the impact of industrialization on cities and people. The appearance of these works shows the sensitivity and depth of thinking of Dalian installation artists on social issues.

Concerns about social and environmental issues: During the prosperous stage, they expressed their concern and thinking about social issues at that time through installation works, for example, reflecting on the impact of urbanization, industrialization, and consumerism. Explore how to combine installation works with social and environmental issues, and express concerns about social conditions and human living conditions at that time through art. Installation art has become a powerful means for them to present social issues and environmental issues, giving artworks a deeper meaning.

The formation of unique styles: Dalian installation artists began to form their own unique creative styles in the prosperous stage. Start exploring new creative styles and techniques to make installation artworks more innovative and individual. They create more diverse and experimental works by merging with other art forms, such as performance art, photography, video, etc. These innovations make the installation unique in the local art scene. For example, Wei Dong's works often involve the exploration of life, nature and human nature. His artwork "Chaoshenghaiyang" shows his personalized creative style by paying attention to and re-expressing the ecological balance in nature. Zhang Dali is good at making use of ready-mades and wastes. This re-use of everyday objects makes his works full of meaning and interest. (Wu, 2021)

Art exhibitions and exchange activities: During the prosperous stage, installation artists in Dalian actively participated in various art exhibitions and exchange activities. Not only holding installation art exhibitions in Dalian, but also participating in national and international art exhibitions, so that more people can understand and understand Dalian's installation art. At the same time, exchanges and cooperation with artists from other regions and countries will bring Dalian's installation art to a broader stage. For example, in 1993, Dalian installation artist Liu Xiaoguang and others participated in the "First Chinese Contemporary Art Exhibition" held in Beijing, which was one of the first major contemporary art exhibitions held in China. In addition, installation artists in Dalian also participated in many international art exhibitions, such as exhibitions in Hong Kong, Japan and other places, which laid the foundation for Dalian's installation art to enter the international stage.

The development of the art market: In the prosperous stage, Dalian installation art has gradually attracted the attention of the art market at home and abroad. Works by installation artists began to appear in auctions and galleries, and were favored by collectors and investors. Some collectors and art institutions began to pay attention to and collect the works of Dalian installation artists, so that they can get some financial support. This also encourages more artists to devote themselves to the creation of installation art. For example, Zhang Dali's installation work "Dance of Time" was sold at a high price at Sotheby's auction in Hong Kong, which provided more development opportunities for installation artists in Dalian. (Wu, 2021)

Improvement of international influence: During the prosperous period, Dalian's installation artists gradually entered the international stage and gained wider recognition and praise. Their works of art have participated in international art exhibitions and conducted in-depth exchanges with international artists. Through the display on the international platform, Dalian's installation art has gradually entered the international stage and has been recognized by the international art circle. For example, in 1998, the works of Dalian installation artist Wei Dong were exhibited at the Art Fair in Dusseldorf, Germany, and received acclaim. Their works have also been exhibited in international art exhibitions many times, which has gained more international attention for Dalian's installation art.

Social influence and promotion of art education: During the prosperous stage, Dalian installation art began to have an impact on the society. The installation works were widely reported by the media, and the artists became representatives of art education and public cultural promotion. The prosperity of installation art has also inspired more young artists to pay attention to and invest in this art form. (Xiao, interviewed, 2023)

In the historical process of the prosperous stage, Dalian installation art has made greater development and progress on the basis of the initial stage. Through communication and innovation, the artists combined installation art with social issues, and the works expressed a deeper meaning. The influence of installation art has gradually expanded, and artists have begun to go to the international stage. Dalian's installation art has gradually become an important force in Chinese contemporary art. The development of this stage also laid a solid foundation for the prosperity of installation art in the subsequent stage.

4.1.3 The Historical Background of the Diversified Stages of Immersive New Media Installation Art in Dalian

The diversified stages of Dalian installation art are gradually developed on the basis of the prosperous stage, and the time spans from the end of the 1990s to the beginning of the 21st century. At this stage, installation artists in Dalian are constantly trying new ways of creation, exploring different themes and techniques of expression, making installation art more diverse. The following is a detailed interpretation of the diversified stages of Dalian installation art.

Artist personality and experimentation: During the stage of diversification, installation artists in Dalian began to pay more attention to individual performance and innovative experiments. They do not stick to traditional art norms, but bravely break through traditional boundaries, expressing installation art through different media and forms. For example, Dalian installation artist Wei Dong is one of the representative artists at this stage. His work "Let's Fall in Love, Us" uses a variety of art forms such as multimedia, installation and video to express his thoughts on life, love and time. Wei Dong dares to break through the boundaries of traditional art. By combining different media, he breaks the shackles of a single art form, making his works more visually impactful and thoughtful. At the same time, some artists will also combine various media such as painting, sculpture, installation and video, and integrate different artistic elements into their works to create more diversified and unique visual effects.

Diversity of themes: Installation artists began to pay attention to a wider range of themes, covering society, human nature, environment, history and other aspects. Their attention to contemporary social issues continues to deepen, such as urbanization, environmental pollution, and the relationship between man and nature. At the same time, some artists explore individual themes such as traditional culture, historical memory, and personal emotions. This makes the installation artworks present more colorful connotations and meanings. The works "Red" and "Black" by artist Zhang Dali are typical representatives of this stage. Through the use of color, he expresses his reflection on social reality and human nature. In the work "Red", he used red to symbolize prosperity and desire in modern society; while in "Black", he used black to express the corruption and dark side of society. This multi-angle exploration of the theme makes the development of installation art in Dalian more diversified and profound.

Interaction and Participation: During the diversification stage, installation artists in Dalian began to place more emphasis on audience interaction and participation. Installation artworks are no longer a one-way static display to the audience, but encourage the audience to participate and interact with the work. There are also some installation artworks that use technological means to allow viewers to touch, move, and perceive the works, making the audience a part of the artistic

creation and increasing the activity and interest of the works. For example, installation artist Zhang Jianming's installation work "Leaping Over" is a typical representative of this stage's emphasis on interaction and participation. The installation is composed of a balance beam suspended in the sky, and the audience needs to cross this high obstacle. This kind of participatory installation art stimulates the audience's desire to participate, making them a part of the work and experiencing the joy and challenge of interacting with the work.

Site Adaptation and Social Participation: Installation artists began to pay more attention to the relationship between the works and the exhibition site, and tried to combine the installation works with a specific space environment. Some installation works will be displayed in public places, urban blocks, natural landscapes, etc., interacting with the real environment and space, emphasizing the integration of art and life. At the same time, installation artists have also begun to participate in social projects, using the diverse forms of expression of installation art to speak out for social issues and participate in social activities. Dalian installation artist Liu Xiaoguang's work "Blue Project" is a representative of this stage's emphasis on field adaptation and social participation. The work combines the blue iron frame with the wheat field to form an installation that harmoniously blends with the natural environment. In addition, Liu Xiaoguang's works also actively participate in environmental protection public welfare activities, such as cleaning up polluted rivers, etc., and appeal to the society to pay attention to environmental issues through the expression of installation art.

Cross-border cooperation and international exchanges: In the stage of diversification, installation artists in Dalian have cross-border cooperation with artists and scholars in other fields. For example, working with musicians, dancers, scientists, etc., to integrate different art forms and disciplines to create cross-border artworks. At the same time, they also actively participate in international art exchanges, cooperate and communicate with international installation artists, and make Dalian's installation art integrate into the trend of international art. Installation artist Wu Zunyuan tried to cooperate with dancers at this stage and created the work "Shards of Dust". The installation work combines installation art and dance performance, and through the interaction between dancers and the installation, a unique visual and physical

experience is formed. In addition, installation artists also actively participate in international art exchange activities, such as cooperating with artists from Japan, South Korea and other countries, bringing Dalian's installation art to the international stage and opening up a broader space for the development of Dalian's installation art.

Art education and promotion: installation artists also began to devote themselves to art education and promotion at the stage of diversification. They hold teaching positions in universities and colleges to train a new generation of installation artists. At the same time, they also actively organize activities such as art lectures, workshops and exhibitions to popularize the knowledge of installation art to the public and increase the society's awareness and understanding of installation art. Dalian installation artists actively participate in art education and promotion activities, and contribute to local art. Education contributes. For example, they participate in organizing lectures and workshops on installation art, communicate with students and young artists, and share artistic experience and creative ideas. At the same time, they also organize installation art exhibitions and public art activities to bring installation art into the public eye and improve public awareness and appreciation of installation art. (Xiao, interviewed, 2023)

The diversified stages of Dalian installation art are manifested in the individuality and experimentation of artists, the diversity of themes of works, the emphasis on interaction and participation, field adaptation and social participation, cross-border cooperation and international exchanges, and art education and promotion. These factors jointly promote the development of Dalian installation art to a wider field, and show a rich and colorful outlook in Chinese contemporary art. Dalian's installation art has continued to explore and innovate on the basis of the prosperous stage. Artists have made remarkable progress in personalized performance, theme diversity, interactive participation, and site adaptation. Cross-border cooperation and international exchanges have integrated installation art into a wider field, while the art education and promotion of artists have also promoted the spread and development of installation art in society. The development of various stages has made Dalian installation art more dynamic and creative, and has become a unique force in Chinese contemporary art.

4.1.4 The Historical Background of the Contemporary Stage of Immersive New Media Installation Art in Urban Commercial Space in Dalian

With the rise of Chinese contemporary art, installation art has also changed, and has evolved into a creative method and expression method that integrates multimedia technology. Relying on the increasingly powerful information technology, many interdisciplinary and interprofessional fusion media art categories have emerged as the times require, bringing infinite possibilities for innovation to the development of Chinese new media installations in art. Artists have also gradually begun to explore the application status and future development prospects of new media installation art in urban commercial space. Based on the different sizes of urban commercial spaces, artists adopt different design techniques to adapt to spaces with different attributes. With the continuous innovation and development of Dalian's urban commercial space, the immersive new media installation art is also constantly evolving and improving.

The immersive industry is not rising rapidly, and its development in my country can be attributed to three stages. 2005-2011 is the frontier exploration period, which is during the "Eleventh Five-Year Plan" period. It mainly conducts exploratory research and tracking on immersive new display technologies and applications for human-computer interaction. 2011-2015 is the budding period, during the "Twelfth Five-Year Plan" period. During this period, the national science and technology support plan focused on supporting core technologies such as interactive art, immersive interactive experience, and immersive performance space design. In virtual museums, immersive online games, etc. The rudimentary form of my country's immersive industry has taken shape and promoted the birth of a number of new immersive models. 2015-2019 is a period of rapid growth. During the "Thirteenth Five-Year Plan" period, the development of immersive related technologies and equipment is included in the national strategic emerging industry development plan, and vigorously developing the immersive industry has become my country's national strategy in the new era. (Li, 2021)

The artistic origin of new media art in Dalian's urban commercial space can be traced back to the beginning of the 21st century, which is the contemporary stage. It is an emerging artistic expression form in Dalian's urban commercial space. At that time, the Dalian Municipal Government proposed the development strategy of

"culture + technology", encouraging the combination of culture and technology, and promoting the development of the city's cultural and creative industries. As part of this strategy, immersive new media installation art began to appear in commercial spaces in Dalian, becoming a new commercial experience. These works often combine digital media, lighting, music, and other art forms to create a highly immersive experience for the audience. In the contemporary stage, Dalian's installation art continues to develop and integrate with contemporary art trends. Artists began to use technology and digital art elements to create digital installation artworks.

Concerns about contemporary social issues: In the contemporary stage, installation artists in Dalian show more profound concerns about contemporary social issues, such as urbanization, environmental pollution, and technological development. They express their thoughts and reflections on these issues through installation artworks, trying to draw the audience's attention to the status quo of contemporary society. For example, artist Jiang Tiejun's work "The Far Edge of the City" presents the living conditions of migrant workers in the process of urbanization, explores the social problems brought about by the process of urbanization and the plight of individual living conditions, and conveys the concept of urbanization. The torture of individual survival status in the process. Such works make the audience more deeply aware of the impact of urbanization on individual life and social structure.

Diversification of art forms: Dalian's installation artists pay more attention to the diversification of art forms in the contemporary stage. In addition to traditional installation works, they have begun to get involved in modern technological fields such as new media art, digital art, and virtual reality, combining technological elements with installation art to create more modern and technological installation works. For example, artist Zhao Hongmei's work "Resonance Return to Zero" uses digital technology and lighting to create a dynamic installation work, which arouses the audience's thinking about the integration of technology and art. In August 2015, "Midsummer in Dalian' Contemporary Chinese Students' Art Observation in California, USA: How Many Hamlets?" was exhibited at the Dalian Art Museum. Artists include Wang Dazhen, Wang Zhiyuan, Song Santu, Zhang Haoxiang and Zhao Qian. The five young artists all studied art in the American Academy, and their

artistic expressions include video installations and sculpture installations. Artist Sun Yichao completed an interactive installation project "Xi/Sunflower by the Sea" in cooperation with the audience at Yehai-Chishan Seaview Homestay in April 2020.

Combination of technology and handwork: In the contemporary stage, installation artists in Dalian have begun to try to combine traditional handicraft skills with modern technology to create more unique works of art. For example, the work "City Watcher" by artist Jia Zhangang combines iron sculptures with mechanical dynamic elements to form an installation work that combines traditional craftsmanship and modern technology. Visual impact of mechanical dynamics.

Artist's personal experience and emotional expression: Installation artists in the contemporary stage are more inclined to integrate personal experience and emotion into their creations. They transform their life experiences, thinking and perceptions into works of art, expressing the individual's sense of existence and emotion in reality experience, making the work more personal and emotionally resonant. For example, artist Miao Guoqiang's work "Wait for you until my heart aches" is a typical example. Through the performance of time and waiting, this work conveys the author's emotional experience of the passage of time and precious moments, implying the persistence and persistence of individuals in life, and triggering the audience's thinking about life and time. Artist Sun Dazhi's experimental video installation series "Box" attempts to present his recent creations and thinking in the form of situational installations in June 2020. Artists complete fairy tales between their works through the appropriation of ready-made products in a way of combination and reconstruction, while also building a spiritual field for communication between viewers and artists in terms of reality and surrealism.

International vision and communication: Installation artists in Dalian pay more attention to international vision and communication in the contemporary stage. They actively participate in international art exhibitions, art festivals and exchange activities, and cooperate and interact with international artists to push Dalian's installation art to the international stage. At the same time, they also draw on international art trends and innovative concepts to keep Dalian New Media Installation Art in close contact with the international art world. For example, they have cooperated with artists from Japan, South Korea, Europe and other countries, so

that Dalian's installation art has gained more recognition and attention on the international stage. In May 2015, "Local Time: A Local Practice of Contemporary Art" was exhibited at Dansheng Space in Zhongshan District, Dalian. The participating artists are Bram Vrateedge, Han Yeliang, Qu Ruining, Jiang Hao, Liu Junye, Liu Zhengxin, Shoko Tsuruta, Shen Dapeng, Sun Wei, Yang Yi, Zhao Yimeng, Li Xianyang. The exhibition is not limited to installation, video and performance art. The curator Li Gengkun pointed out in the front of the exhibition: "Contemporary travel or contemporary thinking refers to the artist's understanding of the situation and thinking structure; locality refers to the interaction between the artist and the field. The experience and experience generated under the influence of art. The two complement each other and are indispensable. These artists come from different countries and regions, have different cultural backgrounds, and have different artistic experiences, but they are all living in the same city now and have experienced In the same time and space, thinking about the same problem.

Social participation and public art: In the contemporary stage, artists pay more attention to the significance of social participation and public art. They choose to exhibit their work in public spaces to create a more direct connection with their audience. For example, artist Wang Fang's work "I'm Here" transformed discarded TV sets into installation works and placed them in urban public spaces, triggering public reflection on consumerism and waste. Such works enable closer interaction and dialogue between the artist and the audience.

Environmental protection and sustainable development: contemporary Dalian installation artists have begun to pay more attention to the themes of environmental protection and sustainable development. They use recycled materials, recycled items, etc. to create, emphasizing the conservation and protection of natural resources. For example, artist Liu Xiaoguang's work "Recycled Home" expresses concern for environmental protection and sustainable development through the use of waste materials and plants. (Wu, 2021)

To sum up, the contemporary stage of Dalian installation art presents a focus on contemporary social issues, diversified art forms, a combination of technology and craftsmanship, personal experience and emotional expression, international vision and communication, social participation and public art, and environmental protection. and

sustainable development. These factors jointly promote the continuous development and innovation of Dalian's installation art in the field of contemporary art, making Dalian's installation art show a richer and more diverse appearance and connotation in the field of contemporary art.

New media installation art can actually be regarded as an upgrade of interactive installation art, or a new branch of new media art. The two complement each other, and there is no distinction between them. New media installation art is constantly developing and experimenting in their respective art fields, and the works are gradually tending to two development directions: one is to continuously update technical means with the development of new media art, and to use experimental attempts as the basis. Mainly, the purpose is to integrate the most cutting-edge scientific information technology into the works of art, and explore new paths for the development of new media installation art; the second is to focus on meeting the interactive needs of the audience, and the means are mainly relatively mature sound and light machinery. Pass the core idea of the work to the audience, stimulate the audience to participate in the immersive interaction and give feedback, so as to convey new concepts and ideas to the audience. Immersive new media installation art has gradually emerged in space design. The addition of cutting-edge technology will continuously update the theoretical background of new media installation art, and the attention of various disciplines will also open up more possibilities for it. The collision of high technology and art will greatly enhance the aesthetic level of new media installation art, and the improvement of public consumption level will also increase the audience of new media installation art. The two-way feedback between the two will eventually form a sustainable virtuous circle, paving the way for more new media installation art to be placed in commercial spaces, and laying a good foundation for improving the experience of urban public spaces.

With the development of computer technology and the Internet, digital media technology has gradually matured. Artists began to explore the possibility of applying new media technology to artistic creation. New media art is no longer limited to traditional painting, sculpture and other media, but integrates modern technologies such as digital technology, computer programming, and virtual reality into artistic creation, making artistic expressions more diverse and avant-garde. Immersive

installation art is an important form of artistic expression during this period. It emphasizes the close interaction between the audience and the artwork, allowing the audience to become a part of the artwork and fully integrate into the artistic creation. Through virtual reality technology, holographic projection, interactive installations and other means, the audience can feel the immersive feeling in the works, creating an immersive art experience that surpasses traditional art forms. Trying to let the audience experience the dream world created by the artist immersive through virtual reality technology.

As an important port city, economic center and science and technology industry base in China, Dalian has a well-developed information technology industry and superior technological advantages. Dalian's technological enterprises and research institutions provide artists with advanced technological means and resource support, enabling them to explore the possibility of new media art creation more freely. At the same time, Dalian also has a rich artistic atmosphere, with many artists and cultural institutions, providing a solid technical foundation for the development of immersive new media installation art. Established in 2003, the Institute of Digital Media Art of Dalian University of Technology is committed to promoting the development and innovation of digital media art. The institute cooperates with local installation artists in Dalian to jointly explore the cutting-edge technology and application of new media installation art, which promotes the prosperity of immersive new media installation art in Dalian.

At the same time, the audience's demand for artistic experience is also one of the important reasons for promoting the development of immersive new media installation art. In today's society, the audience's demand for artistic experience is gradually diversified and personalized. They are eager for works of art with a strong sense of participation and pursue a more participatory and interactive art experience. Immersive new media installation art is an art form that meets this demand, allowing the audience to obtain a deeper and richer experience in the works, and enhancing the emotional resonance between the audience and the art. Artists in Dalian are known for their innovative spirit, and they have the courage to try new forms of artistic expression and creative techniques. On the road of exploring new media art, they are constantly trying to combine technology and art, seeking new artistic experiences and

ways of expression. Their pursuit of immersive art experience makes Dalian immersive new media installation art unique and charming. Dalian artist Yang Yu used virtual reality technology and interactive installations to create a mysterious underwater world in his work "You". The audience wears a VR helmet, as if they are in the depths of the seabed and can personally experience the wonder and fragility of the marine ecology.

The installation artists in Dalian were influenced by the international art trend when exploring the immersive new media installation art. On a global scale, immersive new media art has become a form of art that has attracted much attention, and many international artists have also begun to try to use technologies such as virtual acquaintance, augmented reality, and digital art to create. Artists in Dalian actively pay attention to the dynamics of the international art world, draw inspiration and creative inspiration from them, and keep Dalian's immersive new media installation art in line with international art. The international artist group Marshmallow Laser Feast (MLF) once held an exhibition in Dalian. Their work "In the Eyes of the Animal" uses virtual reality technology to allow viewers to experience the wonders of the forest from the perspective of animals. Such international exchanges have inspired installation artists in Dalian and deepened their exploration of immersive new media installation art.

The origin of Dalian immersive new media installation art is closely connected with the historical background. The rise of new media art and the pursuit of immersive art experience, coupled with Dalian's technological advantages, the innovative spirit of artists and the influence of international art trends, have enabled Dalian's immersive new media installation art to flourish. The audience's demand for immersive art experience has also prompted artists to continue to explore and innovate in their creations, making Dalian's immersive new media installation art a unique status and influence in Chinese contemporary art. (Xiao, interviewed, 2023)

Summarize

The origin of installation art in Dalian's urban commercial space has gone through four stages: the initial stage from the late 1980s to the early 1990s, the prosperous stage from the 1990s, the diversified stage from the late 1990s to the early

21st century, and the contemporary era from the early 21st century to the present stage. In the initial stage, inspired by the reform and opening up policy, artists began to come into contact with international art trends, laying the foundation for installation art in Dalian. In the prosperous stage, artists explored a variety of materials and elements, and used installation art more to focus on social and environmental issues. Art can trigger current social changes and awakening of consciousness, and promote communication and exchanges. The diversification stage witnessed the maturity of installation art. Artists continued to innovate, combined with other art forms, collaborated across borders, and used technological means to create richer works. At the same time, on the basis of social and environmental issues, more attention is paid to the artist's personal emotional expression, which is not only a medium for social reflection, but also a way to express and connect the individual's inner world. In the contemporary stage, immersive new media installation art has emerged. As the public's demand for artistic experience gradually becomes diversified and personalized, they are eager to participate in art works. By making the public a part of the interactive experience, contemporary artists have the courage to try new media forms, bringing a variety of artistic expressions to Dalian's urban commercial space. At the same time, we actively pay attention to international art trends and maintain parallel integration with international art.

4.2 Current Situation and Problems of Immersive New Media Installation Art in Urban Commercial Space in Dalian

4.2.1 Current Situation of Immersive New Media Installation Art in Urban Commercial Spaces in Dalian.

This part will be explained as follows: Current situation of installation art, current situation of urban space operation mode, and current situation of the operation mode of installation art.

4.2.1.1 Current Situation of the Installation Art

Xiao (interviewed, 2023) said that currently some urban commercial spaces in Dalian often hold immersive new media installation art exhibitions in their atriums or entrances. These exhibitions usually use large screens, virtual reality technology, projections, etc. to present works of art in front of the audience. For

example, Dalian Times Square held an immersive snow installation art exhibition during the Christmas period. Through virtual reality technology, the audience felt as if they were in a snowy winter world, adding a festive atmosphere and attracting a large number of customers to visit. Dalian's commercial districts often set up interactive installation art, attracting passers-by to stop and watch and participate. For example, in the Dalian Hang Lung commercial space, the artist created a huge virtual piano installation. Pedestrians can step on different photoelectric sensors to play the wonderful piano sound, creating an interactive and entertaining art space. Some themed restaurants and cafes in Dalian also use immersive new media installation art to provide a unique dining experience. For example, a space-themed restaurant in Xinghai Square uses holographic projection technology to display colorful starry sky and planetary scenes on the ceiling, making customers feel as if they are dining in space, creating a dreamy atmosphere. Dalian's city square is also a popular place for immersive new media installation art activities. For example, on a holiday, Dalian Zhongshan Square presents waves, sand and sunshine through holographic projection technology, allowing people to experience the feeling of a beach vacation in the city, attracting a large number of citizens to come for leisure and entertainment. There are also some large shopping malls that use virtual reality technology to provide a virtual shopping experience. Customers wearing VR helmets can go shopping in the virtual space, try on clothes, and experience products, thereby enhancing the fun and convenience of shopping. This virtual shopping experience not only attracts more customers, but also enhances the brand image and competitiveness of the mall.

At present, the presentation of immersive new media installation art in Dalian's urban commercial space is still very rare. According to actual research and interviews, the art installation located in Dalian Zhongshan Plaza Shopping Center has set up an Immersive virtual reality art installation. The installation art uses virtual reality technology to allow customers to wear VR helmets and enter a gorgeous art world. The audience interacts with the artworks and can freely shuttle in the virtual space to experience the immersive visual and auditory impact. Through the virtual landscape and fantasy scenes carefully designed by the artist, the audience seems to have entered a dreamy world and gained a new artistic experience. Such an

installation art attracts a large number of customers to visit and experience, which enhances the attractiveness and popularity of the shopping center.

There is also an immersive interactive installation art at the entrance of Dalian Xinghai Square. The art installation is called "Dance of Light and Shadow". This installation is composed of a large-scale photoelectric interactive installation art, allowing pedestrians to step on different bright areas to trigger different light and shadow changes and sound effects, forming an interesting and interactive artistic dance. Such installations have attracted many passers-by to stop and participate, adding to the vibrancy and appeal of the square.

There is also an art installation located in Dalian Yingbin Shopping Center. In the indoor corridor area of Dalian Yingbin Shopping Center, the artist created a group of immersive virtual reality installation art "Journey to Illusion". Through holographic projection technology, a fantastic virtual world is created, allowing customers to feel as if they are in dreamlike scenes, such as forests, deserts, snow mountains, etc., to interact with virtual objects and get an immersive experience. Such installations add a unique visual experience to the mall, attracting many customers to watch and take photos.

The art installation Dream Beach located in Dalian Heping Square, in the open-air area of Dalian Heping Square, the artist created a huge virtual beach installation art. Through holographic projection technology, delicate sandy beaches, rough waves and bright sunshine are presented, making people feel like they are in a resort. Such installations are especially popular during holidays, attracting a large number of citizens to come for leisure and entertainment, creating a joyful atmosphere for the square.

Finally, there is an art installation located in Dalian CITIC Commercial Space. In the indoor space of Dalian CITIC Plaza, temporary immersive interactive installation art is often set up. "Light, Shadow and Piano Rhythm" is an installation work of this period. It is a huge virtual piano installation composed of multiple photoelectric sensors. The audience can trigger different notes by stepping on different photoelectric sensors, and play a wonderful piano sound. Create an art space full of music and interaction. Such installations add music and an interactive artistic

atmosphere to the mall, attracting many customers to stop and watch and participate, adding interest and interactivity to the commercial space. (Xiao, interviewed, 2023)

Xiao (interviewed, 2023) said that the application status of Dalian's immersive new media installation art in urban commercial space can be roughly divided into two categories. One is temporary immersive new media installation artworks with a very frequent change period. The application in commercial space is more common. Because urban commercial space is a space with strong mobility. It is mainly manifested in the people who make up the urban commercial space; the different types of blocks in the commercial space; the creation of the space atmosphere in the commercial space changes according to different festivals or seasons. Some new media installation art, as an artistic expression to create an interactive experience atmosphere in urban commercial spaces, usually has a theme and changes according to different needs in urban commercial spaces. The placement and replacement of temporary interactive installation artworks in the urban commercial space has enhanced the new vitality of the development of commercial space, and it is the urban commercial space that keeps pace with the times and leads the aesthetic level of urban people. Flexible changes bring consumers more artistic experience in different cultural contexts, and at the same time present the development and changes of new media installation art to the public in keeping with the times.

The second category is permanent new media installation artworks, which have relatively few applications, and there are very few application cases in urban commercial spaces in China, and the same is true in urban commercial spaces in Dalian. For example, Juxiong Beibei installation art on Xiongdong Street in Bingshanhuigu, Dalian. This kind of permanent new media installation artworks requires a fixed place in commercial space applications with the main purpose of profit, which also greatly increases the difficulty of installation artworks in commercial spaces. Permanent new media installation art is not only an existence to enhance the atmosphere of urban commercial space, but also has the connotation of inheriting urban cultural context and spreading and carrying forward urban spirit.

"The Central Committee of the Communist Party of China's Proposals on Formulating the 14th Five-Year Plan for National Economic and Social Development

and the Long-term Goals for 2035" clearly pointed out that "implementing urban renewal actions" and "promoting people-oriented new urbanization" have been upgraded to national strategies. The combination of industrial sites and commercial upgrades just meets the unique needs of the business. On the one hand, it will no longer be a burden on urban environment construction after renovation. On the other hand, it can not only meet the needs of urban expansion and renewal, but also create considerable economic benefits. Inject diversity and uniqueness into the urban economy.

BoTop Culture has been deeply involved in the cultural tourism industry for 17 years. Dalian Xiongdong Street is its first exploration and practice project in the direction of urban renewal and industrial relic transformation. With "strong IP + strong creativity", it integrates the flow thinking of cultural tourism and the business operation thinking. Combining with new media marketing, a new model of urban renewal has been explored - "mechanical behemoth + cultural, business and tourism complex". But it can indeed provide some reference value for cultural tourism and business transformation. At least in the current uncertain environment, this kind of courage to explore and practice is worthy of encouragement and affirmation. Therefore, the Xiongdong Street project located on the edge of Dalian's municipal commercial center was chosen as the main research target for the study of new media installation art in Dalian's urban commercial space. Dalian Xiongdong Street project building is an innovative urban renewal direction developed by a well-known domestic high-tech cultural and tourism project creative design company - "BoTop Culture", with the new media installation art Juxiong Beibei as the core IP. (Figure 13) As a cultural, business and tourism complex, BoTop Culture is committed to creating a screaming landmark for China's cultural, commercial and travel industry. It is a strategic investment company of CYTS, the first cultural and technological enterprise listed on the New Third Board, and a leading enterprise in China's high-tech cultural and travel industry. Dalian Xiongdong Street Project is an innovative practice of BoTop Culture based on a single mechanical giant and based on the future trend of cultural tourism consumption. Let Dalian Bingshan Huigu glow with new vitality.



Figure 13. Dalian Xiongdong Street Juxiong Beibei Installation Art

Source: Liu (2023)

The Dalian Xiongdong Street project is mainly composed of a core IP "Big Bear Beibei" and 3 streets - Beibei Street, Screaming Street, and Chaowan Tianjie. Including giant beast parade, themed amusement, fashion cultural creation, science and technology research, special food, fun night market, theme activities and other elements, it uses the combination of culture, technology and art to create a screaming landmark, and through the Juxiong Beibei installation art this super IP organically integrates cultural tourism and commercial formats. The architectural form retains the original form to the greatest extent, adopts LOFT structure and punk design style, and integrates giant animal parade, gourmet entertainment, trendy art, technology research, trendy peripherals and night economy. Combining steampunk with industrial style and cyberpunk with futuristic style, it uses high technology and creativity to carry the "fireworks" in the world. On the one hand, it has extended the core brand concept of BoTop Culture "combining culture, technology and art to create

a screaming landmark in China's cultural tourism". Bring an unprecedented immersive five-sense experience.

Dalian Xiongdong Street has been in trial operation since June 18, 2022. Despite the impact of the epidemic and fewer tourists from other places, it still created a miracle that the number of passengers exceeded 600,000 within five months of opening. Short video platforms such as Douyin and Station B have been exposed more than 500 million times, attracting the attention of nearly 2 million fans across the country. During the National Day holiday of the 11th National Day, it was full of people, ranking first in the check-in list of Dalian's scenic spots, and the first place in the tourist collection list of Northeast tourist attractions. The update of Dalian Xiongdong Street's innovative practice has quickly created a super city attraction for Dalian, and continues to create hot topics in Dalian's cultural tourism business. The deep integration and development of Dalian's cultural tourism and commercial shipping industry provides a new practical idea.

As an old tourist city in China, Dalian has always had the title of "Romantic City", but in fact, the core IP that represents the city of Dalian is not very clear. During these years of the rise of coastal tourism, the tourism resources such as coastal features and themed aquariums that Dalian once had are no longer the unique IP of a single city, so the importance of a tourism IP that can represent the city has gradually become prominent. In particular, the impact of the post-epidemic era on the cultural and tourism industry will push the creation of IP to the forefront. The previous construction mode of heavy investment and extensive development of cultural tourism projects has gradually been eliminated, and the intensive and refined construction mode has gradually entered the market stage. How to tell a good story, optimize services, and improve project experience has become the core test of the project. (Jiang, interviewed, 2023)

Dalian Xiongdong Street is an urban renewal project combining "mechanical monster + cultural, business and tourism complex". Within 2 months of trial operation of this project, the passenger flow has exceeded 250,000. The exposure of the project on the short video platform exceeded 230 million, and it was featured on CCTV news three times in a row. It became the most popular urban entertainment project in the country during the summer vacation. It is located in Huigu, Bingshan,

Dalian. Among them, a mechanical "white bear" with a height of 6 meters and a weight of 25 tons was officially unveiled on Xiongdong Street in Dalian, named "Juxiong Beibei". Its designer is member of the All-China Youth Federation, founder of Dalian BoTop Culture, and mechanical installation artist Xiao Di. The operation mode of its commercial space is also an innovative attempt of a new theme block, which brings a new feeling to the experience of different customer groups. This mechanical bear has become the focus of Dalian's fashion circle, and it has become a greeting for Dalian people when they meet, showing its popularity in the local area. Juxiong Beibei installation art has gained widespread attention on Xiongdong Street and quickly became a city-level IP, making Xiongdong Street the hottest new urban landmark in Dalian. This mechanical giant bear has attracted a large number of fans because of its steampunk and slightly cute image. (Figure 14) (Liu, interviewed, 2023)



Figure 14. Juxiong Beibei Installation Art Performance Video

Source: Sui Guanglong (2023)

Xiongdong Street has formed a unique brand IP culture around the core IP "Big Bear Beibei". Juxiong Beibei is a city IP customized exclusively for Dalian, which realizes high-tech intelligent bionic interactive effects. The Juxiong Beibei installation art is the eighth giant beast of BoTop Culture Technology Co., Ltd., and previously created the golden giant horse, Jinling evil spirits (Pixiu), golden armored unicorn, super mammoth, phoenix and so on. Xiao Di, the founder of BoTop Culture, explored the creative story behind the IP of the immersive new media installation artwork Juxiong Beibei on Xiongdong Street through field investigation.

The giant mechanical bear Juxiong Beibei is a city IP customized exclusively for Dalian, which can realize high-tech intelligent bionic interactive effects. The creation of Juxiong Beibei was inspired by the Chinese mythology "Shan Hai Jing". Juxiong Beibei is a work created exclusively for the city of Dalian, and it is also a creation based on the characteristics of northern China. The Juxiong Beibei installation artwork has blue eyes, the color of the northern sea. The first "Bei" in "Beibei" represents the north, which is the bear in the north, and the second "Bei" represents the "Big Dipper", which is the most famous constellation in the northern sky - the constellation of the Ursa Major. "With the rough and heroic personality of the northerners, he is full of courage and at the same time warm and pure. Artist Xiao Di hopes to use technology to depict the "sacred beasts" of Chinese stories.

Juxiong Beibei installation art has an overall length of 14 meters, a walking height of 5.62 meters, a jumping height of 9.9 meters, and an overall weight of 25 tons. Integrating high-tech special effects, digital content, and a number of integrated mechanical structure designs, it took one year from design to final completion. The whole is composed of more than 1,880 drawings. The entire monster winch is pulled and tracked to realize forward and reverse movements. Blinking, tongue rolling, eyebrow raising, and other rich movements form angry, cute and sad expressions, standing, jumping up, shaking the head left and right to achieve vivid interaction with the audience. This giant bionic installation art contains a cockpit inside. The cockpit is 3000mm long, 1600mm wide, and 2100mm high, with a total area of 4.8m². The interior of the cab still maintains the texture of cyberpunk, with the style of Memphis color, which is full of cool and artistic sense. (Figure 15)



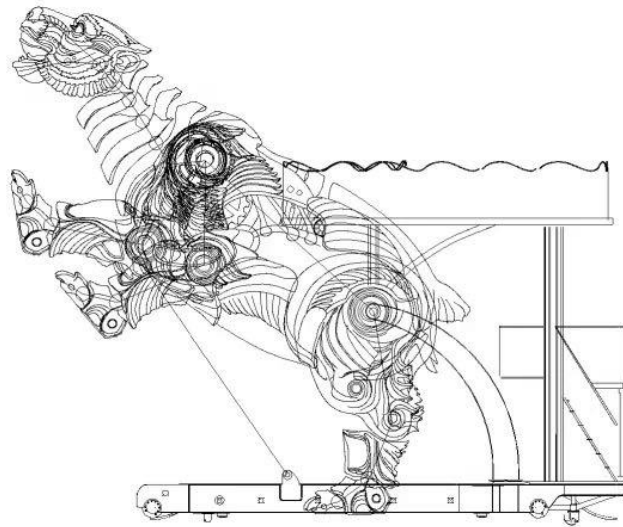


Figure 15. Design Drawings of Juxiong Beibei Installation Art

Source: Liu (2023)

The creation of Juxiong Beibei installation art can be said to be a cultural self-confidence and cultural awakening, and it is a refinement and re-creation of oriental elements. The original intention of the creation is also to convey the unique simplicity and honesty of northerners through the interaction between "Beibei" and people, kindness, enthusiasm, and warmth can bring more strength and sunshine to the people and tourists in their hometown who are still working hard no matter what the situation is. (Xiao, interviewed, 2023)

The Juxiong Beibei installation art on Xiongdong Street uses the animal bear as the main visual image. The reason is that the bear itself is a relatively large creature, which is more in line with the honest, rough and pragmatic personality characteristics of the people in Northeast China. At first, before creating the giant mecha installation, the BoTop culture team visited the model of the giant mech in the Ile de Nantes Park in Nantes, France, learned from its successful cases, and created a giant mecha that is second to none in China. Of course, this kind of project can also be said to be a double-edged sword. Innovation has to pay a price. The disadvantage of this kind of mech-like installation art is that the threshold is also high. If you want to try to create such a huge installation art, it will take a lot of money. The cost of capital investment, but also need to overcome many technical problems. Therefore,

most of the installation art team of BoTop Culture Co., Ltd. are from science and engineering. The technicians of science and engineering are stubborn and have a strong determination to succeed in their first attempt. Many factors add up.

The mother body and incubator of Juxiong Beibei - BoTop Culture Technology Co., Ltd. This is a 17-year-old Dalian Local Cultural Tourism Technology Co., Ltd. Due to its continuous innovation and the personal influence of Xiao Di, the founder of Chinese installation artist, it has a high reputation in the domestic cultural tourism industry, and it has served many cultural tourism companies. The group and well-known theme parks have projects all over the country. From theme park entertainment projects to scientific and technological product development, to post-production of game film and television special effects, to the current high-tech immersive bionic mechanical art installations, the company's unrestrained innovation has brought a new kind of innovation to the Chinese cultural and tourism industry. A new way of cultural expression, the theory of "screaming aesthetics". (Xiao, 2021) The theoretical source that promotes Xiao Di's giant installations is the practical aesthetic theory that he has refined in the process of creating giant installation landmarks many times.

Scream aesthetics is an emerging discipline that studies the attention economy and experience aesthetics with vision as the main focus. It is a new aesthetic system that triggers a series of screams in psychology and culture. It is also based on shocking visual design, bringing transactions, processing A set of social interaction modes of circulation and consumption. Scream Aesthetics For the artist Xiao Di, Xiao Di has his own understanding of the future of the "scream aesthetics" theory. Firstly, scream aesthetics is a belief in creation. Screaming means the explosion of potential, and it is the highest level that your artistic level and knowledge can reach. Only a down-to-earth, serious and persistent craftsman spirit can create a screaming experience for consumers and produce a screaming effect. Secondly, scream aesthetics is a cultural spirit. Xiao (interviewed, 2023) said that scream aesthetics will eventually become a mainstream culture, the core of life, and a fundamental cultural texture. This new way of life is the value thinking of small design moving towards big life. At the same time, screaming aesthetics is also a business model. Screaming emphasizes that the business model is style, and screaming products have a strong

eyeball economy. In dialogue and communication, the strangeness produced by the unexpected collision of new and old, Chinese and foreign, it just screams aesthetics. According to Xiao Di, "screaming aesthetics" mainly includes three characteristics: a sense of miracle, a sense of life and a sense of beauty. The giant bionic mechanical art installation is one of the successful practices of "screaming aesthetics". (Xiao, interviewed, 2023) Tourists will be amazed when they suddenly see a giant mechanical beast as big as the Juxiong Beibei installation art, and feel that it does not seem to come from the real world. When it interacts, you can't help feeling that it is a living thing, which is a sense of life; the mechanical giant has a unique shape, which is an organic combination of machinery and culture, which is a sense of beauty.

With the advancement of technology and the constant change of new media, public art appreciation and art experience are also changing accordingly. People are no longer constrained by traditional forms of art, and the demand for spiritual life has also increased significantly. For example, traditional urban sculpture is known as "solidified melody". However, with the integration of technology and culture, in the era of media integration, the upgrading of urban commercial space and the implantation of new media installation art make the installation works in the space present a dynamic and vital existence. This brand-new experience is completely different from before, that is, its interaction with viewers will be greatly improved. For example, when Juxiong Beibei meets the viewer's eyes, they will not simply think that there is a simple installation art in front of them. The eyes of Juxiong Beibei installation art use controllable and adjustable high-definition LED screens, which are flexible. His eyes seem to have opened the entrance of a different space, and the scene is full of sense of technology and future, so it is alive and symbolized by a living body. This is not available in any traditional sculpture. (Xiao, interviewed, 2023)

For artist Xiao Di, this kind of interactivity has greatly enhanced the experience of the participants, and it is also the power brought by innovation. Entering the era of information civilization, time and space are closely connected, and the emergence of mobile Internet technology tools will break the circle-level pyramid structure with the characteristics of the era of industrial civilization into multi-center nodes. The establishment of a new community requires a certain period of growth,

just like when Xiao Di was established on Xiongdong Street, "I have already prepared for three years of no revenue." (Xiao, interviewed, 2023)

Xiao Di is good at finding ways and means to solve problems and problems in China's local knowledge pedigree and cultural meridians. He takes oriental philosophy and cultural and tourism ecological development as the foundation of his work concept, and uses contemporary responsibility, artistic power and powerful works to constantly Breaking through the limitations of public cognition, he drew his years of practical experience into a book. In 2021, he published the theory of screaming aesthetics "Sketch", which was successively collected by the Capital Library and the National Library of China. He has repeatedly expressed the hope that works like Juxiong Beibei can give people an exclusive experience of immersive appreciating the charm of Chinese traditional culture and Chinese elements.

4.2.1.2 Current Situation of Urban Space Operation Mode

In the early days, Xiongdong Street used to be a factory with 46 old factory buildings and a total area of 180,000 square meters. Later, after transformation, it became a relatively conventional creative industry park, submerged in the prosperity of Dalian. In order to re-upgrade and create new commercial vitality, after entering this traditional commercial space, BoTop Culture Co., Ltd. abandoned the stereotyped business planning and investment promotion model, rooted the core idea of cultural tourism in a new position, and created a new generation of urban business A gathering place for micro vacations. Xiongdong Street has received 700,000 people since its soft opening, and the number of fans on the new media network has exceeded 1 million, which is enough to show people's love for Juxiong Beibei installation art. It quickly created a phenomenon-level city highlight for Dalian, so it was reported by CCTV three times in a row. It can be said that Xiongdong Street is the most friendly, free, joyful, innovative and wonderful commercial space for young people. (Jiang, interviewed, 2023)

The commercial space model of Xiongdong Street was born from some ideas of BoTop Culture. The core of the thinking of Wenlv is "realization of flow economy", that is, it must first have popularity, then have commercial atmosphere, and finally form commercial value. Similar to Disneyland, Chimelong Paradise,

including many theme parks in Overseas Chinese Town, this kind of overall supplier from design to development to operation. The difference from the traditional commercial space is that the commercial space environment of Xiongdong Street is embedded with the advantages of theme parks. This kind of operation mode is actually different from large shopping malls such as Hang Lung, Jinhui or McKayle within their respective fields. With the innovation and development of urban commercial space, the advantage of embedding theme parks in commercial space is to use this new media installation art to attract a large number of tourists. When tourists arrive in a certain tourist city, they usually use software search to reach a certain tourist attraction, such as Mount Tai in Shandong, Huangshan in Anhui and other natural landscapes, or they may go to Disney when they travel to Shanghai, or Universal Studios when they go to Beijing. The commercial space of Xiongdong Street has this kind of attraction model. Because it creates high-level IP and creates an immersive story universe. The "miracle" of giant beast installation artworks appearing in the real world, as well as the agility and interaction of giant beasts, produce a "sense of life". In addition, giant beasts have a unique shape, which is an organic combination of new media installation art and culture. This kind of "beauty of science and technology literature and art" will make people sigh in amazement. And Juxiong Beibei installation art is not only an attempt of "technical art", but also a new practice of "screaming economy".

The advantageous format of Xiongdong Street is based on a crossover. The exposure of Juxiong Beibei Mecha mechanical installation art has exceeded 200 million, which not only has the ability to attract tourists in scenic spots, but also has some supporting functions of traditional shopping malls, such supporting industries as theme catering and corresponding entertainment facilities. So Xiongdong Street has made such a cross-border attempt. More public comes from the public in the urban area, and also includes a large number of domestic and foreign tourists. In addition to the attractiveness of mechanical installation arts, it also includes the most basic functional needs of the public, food and entertainment. The Xiongdong Street commercial space has a sense of freshness and trendiness. This cross-border model can be said to be a new innovation. The Juxiong Beibei mechanical installation art has been located in the center of the Xiongdong Street commercial space for a long time,

and there are fixed time slots every day. Performances that interact with tourists, and some cross-media fusion commercial activities will also be carried out in some festivals. This cross-border model not only achieves the purpose of attracting tourists, but also promotes the development of Xiongdong Street's commercial space economy. (Jiang & Liu, interviewed, 2023)

At the same time, the Juxiong Beibei installation art is immersed in the commercial center of Xiongdong Street, as the first step to attract the engine of passenger flow. As time goes by, because people pay attention to the development of Xiongdong Street for a long time, it is necessary to implant Dalian's local cultural technology into it, and at the same time implant it into Juxiong Beibei derivatives. This is the second step of the long-term development strategy of Xiongdong Street. In the early stage, Juxiong Beibei was used as the drainage, and it gradually became a fixed habitual consumption. In the mid-term, functional consumption was used as a guide to promote the sustainable development of Xiongdong Street. Functional consumption mainly focuses on catering, and implants Dalian's characteristic food culture into Xiongdong Street, such as Dalian stewed meat, Mingji grilled fish, seafood, etc. At the same time, functional consumption also includes indoor entertainment. At present, most young people prefer entertainment such as secret room escape and script killing. Xiongdong Street integrates it with Juxiong Beibei culture for young people, children, and families to gather for entertainment Activity.

The output of these behemoths created by BoTop Culture was first based on parade performances in theme parks. Although they did play a role in attracting tourists, whenever the parade performances started, a large number of tourists would observe, interact and take pictures. However, the effect of this new media installation art has not been fully utilized, and there is no other economic income due to this. The scenic spot is just a ticket, and the installation parade can only be used as an added value of this ticket, adding an installation performance, and there is no further extension on this basis. While Xiongdong Street is absorbing the advantages of scenic spots and normalized commercial spaces, and at the same time giving full play to the maximum effect of giant beast installations. After using traffic thinking to attract a large number of tourists, the more important task is how to convert traffic into economic profits to drive Xiongdong. Street commercial space development. When

the traffic of Xiongdong Street commercial space increases, the industrial chain will be formed. More industrial issues will be tested whether the operators in the commercial space can be as attractive as the Juxiong Beibei installation.

The Juxiong Beibei installation itself has the characteristics of immersion, which can attract people to immerse themselves in this space. At the same time, Juxiong Beibei also brings another added value and long line. This development trend is that Juxiong Beibei installation art itself has urban IP attributes. A derivative of the image of Space Bear Beibei. In the future, new products will be developed based on the current operating status, such as animation, movies, development of blind boxes, cards and other derivatives. In this way, the stickiness of the commercial space of Xiongdong Street will be greater. Under the application method of integrating the immersive new media installation art of Juxiong Beibei into the commercial space of Xiongdong Street, according to the integration of tourism industry and shopping mall industry, Under the innovation of this business model, we will analyze the customer group and target the audience more accurately.

Xiongdong Street focuses more on young people. The first young people are now a very large group. The overall interior of Xiongdong Street has created a cyberpunk-style commercial space environment, attracting a large number of young people to come here to check in, and at the same time take care of themselves. It is compatible with the family customer group from the young customer group. The advantage of the young customer group is that it is highly communicative. It can promote Xiongdong Street by taking pictures, punching cards and making videos to increase the popularity of Xiongdong Street. The advantage of the family customer group lies in its strong consumption ability, so the Xiongdong Street commercial space attracts the family customers to Xiongdong Street for entertainment and consumption through the publicity ability of the young customer group. These are the two major market groups targeted by the Xiongdong Street business model. (Jiang, interviewed, 2023)

In fact, Dalian Xiongdong Street has done a lot of work around IP planning. The core IP Juxiong Beibei installation art has its own "Origin" comics, connecting its background stories, and even a dedicated Douyin account. Through emotional links, Interactive activities and growth stories build an online Juxiong

Beibei image IP; in addition, cultural IP featuring trendy art and youth communities, environmental IP featuring steampunk and cyberpunk, and featuring check-in and retail Together with the main IP, the commercial IP will form the IP galaxy of Xiongdong Street, which will carry the long-term development of the metaverse space of the entire block of Xiongdong Street in Dalian. In order to maintain the freshness of tourists, Xiongdong Street has also planned many activities, including the performance show of the mech monster Juxiong Beibei installation art in a fixed period of time, animation festival, electronic music festival, hip-hop festival, drum set, Dalian's first Hanfu Flower Tide Festival, Intangible Cultural Heritage Exhibition, Xiong YOUNG Fluorescent Music Festival and night show and more than ten themed and special activities. Xiongdong Street will invite the inheritors of Dalian's local intangible cultural heritage during the Chinese Traditional Culture Week, such as the snuff bottle inner painting of Dalian's intangible cultural heritage, Jinzhou leather art, saccharification art, Zhongshan paper-cut art, Zhongshan paper cylinder art, Zhongshan farmers and so on. The performances in the block brought many exquisite intangible cultural heritages works, and also prepared a rich interactive experience for the public, so that more people can pay attention to Dalian's intangible cultural heritage culture and inherit it.

Of course, the night show of Juxiong Beibei installation art is also a special activity of immersive installation art in Dalian's urban commercial space. (Figure 16) The Juxiong Beibei installation art night show is mainly aimed at the night scene of Bingshan Huigu, because the night view of Dalian city is not particularly attractive, and most young customers have limited activities at night, so the Juxiong Beibei installation art night scene performance was developed for this purpose. Due to the popularity of Juxiong Beibei installation art among Dalian residents, Xiongdong Street plans to cover the third and fourth floors of the commercial space with a cloth screen at night, using holographic imaging technology to project animation onto the screen, and using lighting to interpret the origin of Juxiong Beibei installation art. The animation interpretation has Juxiong Beibei's own story, coupled with Juxiong Beibei's own performance, immersing people in the current atmosphere. (Figure 17) At the same time, develop a series of cultural derivatives related to the urban IP Juxiong Beibei installation art, such as hats, T-

shirts, cups, figures, refrigerator magnets, key chains, blind boxes, cards, etc. Dalian Xiongdong Street also has the country's first immersive mechanical technology research hall, which consists of two parts: "magical transmission" and "six-dimensional space". The principle of mechanical power and the story of the birth of the core IP Beibei are deciphered one by one, and the educational extension space of Xiongdong Street is further expanded with digital research experience. These measures are all to increase the stickiness of the commercial space on Xiongdong Street.



Figure 16. Juxiong Beibei Installation Art Night Show

Source: Liu (2023)



Figure 17. Juxiong Beibei Installation Art Night Show Electronic Screen Video

Source: Sui Guanglong (2023)

Juxiong Beibei City IP bears the love of Xiao Di, the founder of BoTop Culture, for Dalian, and also expresses the optimistic and positive life attitude of Dalian people chasing their dreams. In order to further promote the development of cultural tourism, the exposure of Xiongdong Street's commercial space is enhanced. BoTop Culture used the classic IP of Juxiong Beibei installation art to create the classic IP of the mecha doll "Bear Warrior" for a city-wide parade. The mech doll uses a matte effect. The silver streamlined battle armor is designed with gold imitation claw stripes. There are multiple LED light-emitting installation arts on the body and details on the head. Many joints can rotate flexibly. The eye-catching attribute of wit meets the needs of the public for "playing". (Figure 18)



Figure 18. Juxiong Beibei Installation Art Mech Doll - Bear Warrior

Source: Liu (2023)

The operation mode of Dalian Xiongdong Street mainly develops from the following aspects:

Practice of screaming aesthetics: The entry of Xiongdong Street has brought about the successful practice of Dalian BoTop Culture's "screaming aesthetics", empowering the industrial park with culture, tourism, and commerce. With the help of innovative design and art, this model further strengthens the professional and creative functions of the industrial park.

Technology + art super city IP creation: Xiongdong Street has created a technology + art super city IP, including the Juxiong Beibei installation art parade, Beibei Street theme park, "Big Ursa" tavern, Internet celebrity food street and other fashion elements. This model deeply integrates the virtual world with the real world, providing citizens with an experience of "life technology and life art".

Industrial upgrading: The birth of Xiongdong Street has also driven regional cultural gathering and industrial upgrading, providing a new hotspot for the city's cultural and tourism consumer market, and helping the city's industrial transformation and renewal.

To sum up, the operation mode of Dalian Xiongdong Street mainly relies on innovative design and art, deeply integrates technology and art, provides citizens with a brand-new entertainment experience, and at the same time promotes the industrial upgrading and renewal of the city. (Xiao Di, interviewed, 2023)

Jiang (interviewed, 2023) said that the key to sustainable development of a business module lies in people's cognition and insight. In the current era when new media installation art is prevalent, it is necessary to inject fresh blood into the traditional commercial space model, pay attention to some successful cases and exhibitions abroad, break the inherent inertial thinking, analyze the scope of customer groups, from the perspective of the tourism industry, A series of comprehensive factors such as the cultural tourism industry and the commercial industry to create a new commercial space environment. The Xiongdong Street commercial space integrates the comprehensive model of Dalian tourism and shopping malls, based on the advantages of the cultural tourism industry, to update the traditional commercial space operation model. At present, it is a process of change, and the format of the business still needs to be adjusted. This innovative form still needs to be dug deep, cultivated, and continuously polished. After the business model is stabilized, it will be replicated across the country.

BoTop Culture also summed up three rules to make users scream: first, find the pain points of users; second, create users' screaming points; third, create product explosive points. In addition, special attention should be paid to the spontaneous dissemination of social media. This pursuit of screaming experience can be seen as a return to the essence of cultural tourism. The "screaming aesthetics" of

BoTop Culture can quickly occupy the minds of tourists and enhance the experience of tourists through the creation of giant beast installations, Jiawen business travel industry chain and other supporting combinations. At the same time, this highly interactive, novel and unique immersive scene-based experience It also stimulated the self-media communication of tourists, formed a rapid and continuous communication fission, accumulated a large number of fans online, and greatly promoted the transformation of offline experience.

4.2.1.3 Current Situation of the Operation Mode of Installation Art

Zhang (interviewed, 2023) said that the overall appearance of Juxiong Beibei installation art is made of resin material, and the power technology of the overall bear adopts the program of American Parker. The difference from the power generation mode of other giant installations created by artist Xiaodi is that the overall installation is mainly operated by an electric motor, which is the generator type of the motor. While other installation arts are diesel to control the hydraulic pressure. This is also an aspect of technological progress in making such installation works. Juxiong Beibei installation art's movements and facial expressions are also controlled by electrical appliances and hydraulic pressure. Each joint has a multi-joint motor, as well as servo motors and servo motors. Using the principle of mechanical transmission, equipped with gears, pipes, pressure valves and other elements, it not only retains the thick texture of steampunk, but also ensures the vividness of the work. In terms of function, it cooperates with the functional system to realize intelligent bionics. The Juxiong Beibei installation art mainly relies on the telescopic beam in the middle to complete the standing posture. From the completion of construction to the continuous operation of standing and landing, it has taken off and landed a total of 3,000 times, so the service life of the Juxiong Beibei installation art is about 10 to 15 years.

The movement of the Juxiong Beibei installation art is mainly completed by the screen control of the engineer below. The interface on the screen displays the numerical instructions for the completion of the action. Of course, debugging the device and programming can be completed on this interface. For example, the rotation of the eyeballs of the Juxiong Beibei installation art, the movement of the eyelids up and down, etc. are all done on the screen according to the simulation. Each part has a

rotation angle sensor. After the initial input is confirmed, the rotation angle sensor will record this value, and it will continue to record this value, so that Juxiong Beibei installation art's performances are almost the same every time. But the expression has been set before, so it can be directly operated with one key on the interface. The Juxiong Beibei installation art has probably recorded 8 sets of expressions, such as angry, cute, mischievous and happy. Of course, not all actions are done by numerical values. For example, changes in the direction of the head and neck need to be realized by the engineer himself. The external gear parts of Juxiong Beibei can also follow the rotation, and it also includes some attractive special effects equipment, mainly including the special effects of spraying smoke, spraying water bubbles and spraying water vapor. The water spray bubbles are mainly at the tail of the floats behind the installation, and the smoke and water are sprayed on Juxiong Beibei installation art's nose. The overall dynamic special effects will be very attractive. Of course, another feature of Juxiong Beibei installation art is that its lights are more gorgeous, which are mainly divided into three parts, namely yellow, blue and green light beams. The combination is in line with the characteristics of cyberpunk. At the same time, whenever there are some large-scale events and important festivals, Juxiong Beibei installation art will be equipped with a mask or decoration. For example, during the Chinese New Year, a hat will be added to match the festive atmosphere at that time. The decoration material is the same as the overall material of Juxiong Beibei installation art, which is resin.

Not only that, there is also an operating space for two driving positions inside Juxiong Beibei installation art's body. (Figure 19) The inner space of the body is reached through the aerial cable suspension bridge. The overall atmosphere in the space is full of mechanical sense. The shape of the overall space creates a cyberpunk style. The cockpit is divided into two control spaces, and there is a screen showing the external status in front of each control space. The space environment around driving can be observed through the screen. The overall atmosphere of the cockpit is full of technology, and it is easy for people to immerse themselves in the novel experience of mechanical style and punk style. It is not only the absolute visual center of Xiongdong Street commercial space, but also a good visual background. (Figure 20)



Figure 19. Juxiong Beibei Belly Cockpit
Source: Sui Guanglong (2023)



Figure 20. Juxiong Beibei Installation Art Belly Cockpit Video
Source: Sui Guanglong (2023)

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4.2.2 Problems of Immersive New Media Installation Art in Urban Commercial Space in Dalian

This part will be explained as follows: Problems with installation art, Problems of urban space operation mode and Problems with the operation mode of installation artworks.

4.2.2.1 Problems with Installation Art

Xiao (interviewed, 2023) believes that the application status of immersive new media installation art in urban commercial space has the following problems. First of all, on the technical level, although immersive new media art can provide audiences with an immersive experience, it often needs to rely on advanced technology and equipment, such as virtual reality, augmented reality and other technologies. However, the research and development, maintenance and update of these new technologies require a lot of capital investment, and the rapid update of technology often leads to the rapid obsolescence of equipment, which is undoubtedly a huge burden for the technological method of installation art. At the same time, problems at the technical level are also reflected in the audience's operating experience. For example, how to allow the audience to interact more intuitively and naturally in order to provide a better immersive experience is also a problem that needs to be solved at the technical level.

On the issue of content innovation, immersive new media art needs to provide a brand-new participation experience, which puts forward high requirements for content innovation. How to grasp the characteristics of the digital media era and create an art form with the characteristics of the times is an important issue. In particular, how to avoid immersive art from only staying on the surface of technology and ignoring the essence of art is the current challenge.

From the perspective of audience participation, immersive new media art emphasizes audience participation, so audience participation directly affects the quality of experience. However, how to guide the audience to participate deeply, so that the audience can truly become the co-creators of art, not just the viewers, is a problem that Juxiong Beibei installation art needs to solve. The problem of market acceptance. Although immersive new media art has high artistry and innovation, its market acceptance is not obvious. On the one hand, this is due to the audience's

limited awareness and acceptance of this new art form; on the other hand, it is also related to the display and promotion of immersive new media art.

Although the number of experience projects in my country's new media installation immersive industry is relatively large, the number of new media installation artworks in Dalian is relatively small. At the same time, most projects are small in scale and low in technical content, basically in the embryonic stage, and the variance among projects is huge and the degree of concentration is low. In addition, the integration of culture, art and technology is not high, and there is a lack of relevant talents and highly creative high-level immersive experience projects.

Throughout Dalian, the regional distribution of new media installation art immersive experience works, and related experience projects is uneven, and some culturally based interactive immersive experience places, such as museums and historical sites, have not yet developed. At present, most of them focus on entertainment and entertainment, and the projects that reflect the self-confidence and cultural development of Chinese culture have yet to be developed. This also leads to the fact that there has not been a real local hotspot for a long time in my country despite the rapid development of immersive experience of new media installation art. At the same time, the scale of interactive installation art will be larger than that of ordinary art, and it is generally dominated by open spaces. To meet the needs of the audience to participate in it in person. Most of the existing interactive installation art is mainly based on video installations, and some of them use mechanical installation arts to complete the interaction. Most of them are in contact with the public in the form of art exhibitions, and a small amount of artworks are also used in urban public spaces.

4.2.2.2 Problems of Urban Space Operation Mode

Jiang (interviewed, 2023) said that in the current Chinese economy, on the one hand, e-commerce is attacking the city, and JD.com has become the top 100 private enterprises in China. On the other hand, our physical business is collapsing; our tourism industry is also struggling under this constraint. Especially in the era of the new crown epidemic, people's travel radius has been shortened by half in three years. Therefore, in the past two years, a new industry has developed in China, that is, urban micro vacation. The logic behind this industry is to find a place to meet and put

people's inner poetry and ideals under the premise of rapid development of online e-commerce economy without poetry and distance. Under the previous development model of rapid urbanization, most cities have not left deep memories for people. In revitalizing the civilization of big cities and activating our urban life, for example, TX Huaihai in Shanghai, Wenheyong in Changsha, and Youshan in Changchun have become the latest labels for everyone's perception of these cities. In recent years, a new work has emerged in Dalian, adding a new atmosphere to Dalian, a city of fashion and industry. The Dalian Fashion Festival in the early years made the city of Dalian shine in the whole country. After that, Dalian gradually receded from the national view, and the cognition of Dalian city seems to have not been updated much in the past 20 years. But now, Dalian has once again entered the top of the wave of fashion in China, colliding old industrial areas with trendy fashions, developing innovative industrial chains, creating commercial spaces with core IP images, and updating the gradually desolate rust zone of the city into vitality center.

Under the background of the rapid development of China economic level and the continuous improvement of urbanization, urban commercial space has been greatly developed, diversified commercial spaces are emerging, complex commercial complexes are row upon row, and commercial spaces with media attributes have become an important carrier in the process of urban construction. With the advent of the era of experience economy, the commercial needs of consumers have been upgraded from the material level to the spiritual level, that is, the demand for shopping experience and the quality of the space environment, which also brings new opportunities for the development of commercial space. Today, under the trend of multiple forms and multiple functions, a commercial and comprehensive space form has emerged. It is different from traditional commercial streets and department stores, but it still maintains the necessary spatial characteristics of commercial activities, integrates the spatial advantages of cities and buildings, and is a highly shared organic whole. In the process of rapid urbanization in my country, the construction volume of urban commercial space has increased sharply, followed by the problem of mechanized growth of commercial space. This commercial construction model that blindly pursues economic value duplicates the spatial structure and combines functions in similar proportions, resulting in the homogeneity and simplification of a

large number of urban commercial spaces. How to guide the benign evolution of commercial space and regain the space experience has become imminent.

Although the Bear Cave Street project has shown certain innovation and attractiveness, there may also be some disadvantages in marketing.

Overly relying on IP marketing, the success of Xiongdong Street largely depends on its core IP - mechanical white bear Juxiong Beibei installation art. However, if the marketing of a single IP is overly relied on, once the attractiveness of the IP decreases, or consumers become saturated with this IP, the number of tourists on Xiongdong Street may decline. Although Xiongdong Street contains a highly concentrated consumer group, Xiongdong Street has attracted a large number of young consumers with its unique design and metaverse core IP. However, if we rely too much on this part of consumers, other consumer groups may be neglected, which will limit the consumer base and development potential of Xiongdong Street.

From the perspective of the balance between innovation and maintenance, in terms of attracting tourists, Bear Cave Street needs to continue to innovate and provide new experiences and elements to maintain and increase its attractiveness. However, continued innovation requires significant capital and resources, which, if not adequately rewarded, could negatively impact Bear's Cave Street operations.

From the perspective of the sustainability of the business model, the business model that relies on large traffic and high popularity may achieve better economic benefits in the short term, but in the long run, the sustainability of this model may be challenged. If you blindly follow this model without innovation, it may lead to a sudden drop in the number of tourists, which may have a great impact on operations.

In terms of the balance between culture and business, as a project that integrates culture, tourism and business, how to find a balance between cultural protection and commercial profit is a challenge. Excessive pursuit of commercialization may damage cultural values, and conversely, excessive emphasis on cultural connotation may lead to poor commercial benefits.

Through field investigations, interviews with many tourists also gave some suggestions to Xiongdong Street. Although Xiongdong Street can attract a large number of tourists to watch performances and take pictures, most people think that the

overall level of entertainment in Xiongdong Street is not rich enough. Add some functionality. Businesses, such as some sports entertainment, themed dolls related to the characters of Juxiong Beibei installation art, and more online celebrity catering and cultural activities will attract the public more. Some tourists also hope that the Juxiong Beibei installation art on Xiongdong Street in Dalian can be implanted in the hearts of the public like a city landmark. Compared with the commercial space in the business circle, tourist attractions and catering facilities are different in quality and price. For most tourists, food is expensive and tastes relatively poor quality.

Similarly, on the other hand, the advantage of most mid-to-high-end shopping malls in Dalian's commercial district is that the matching model with catering, clothing or commodities is relatively good, but its ability to attract customers is relatively poor. Whether it is tourists or local people, they will not often go to this kind of mall activities, unless it is a holiday or an event is held inside the mall, and this kind of event needs to be interesting to the public and has a certain appeal to itself. Therefore, the ability of traditional commercial spaces to attract tourists is relatively poor, and the geographical location of theme park-style commercial spaces is generally located in the suburbs of cities. If there are no holidays, the public will rarely go to watch and play. Time is short, which is one of the disadvantages. The commercial space in Dalian's downtown business district is basically located in the city center, most of which are at least in the urban area, and its geographical advantages are further reflected.

4.2.2.3 Problems with the Operation Mode of Installation Art

Zhang (interviewed, 2023) said in terms of maintenance costs, mechanical works such as Juxiong Beibei installation art needs to go through a long period of design and manufacture, and repeated debugging to realize their functions. This means that if there is a problem, a professional maintenance team may be required to repair or maintain it, and the maintenance cost is relatively high.

In terms of safety issues, large-scale mechanical installations may have potential safety hazards, such as accidents caused by equipment failures, or safety problems caused by tourists not touching the installations according to regulations.

In terms of updating difficulties, once a large-scale mechanical installation art is built, it is difficult to make major changes to its shape and function. If visitors experience aesthetic fatigue with such installations, updating will be a big problem.

In terms of environmental issues, this large mechanical installation art needs electricity to operate, which will increase power consumption and have an impact on the environment.

Summarize

Dalian Xiongdong Street is a commercial district full of creativity and vitality, representing the trend of combining Chinese cultural creativity with the cultural and tourism virtual industry, with mechanical installation art Juxiong Beibei as the core element. Juxiong Beibei is not only an installation art, but also the core IP of the region, representing the culture and characteristics of Dalian Xiongdong Street. In order to fully leverage this feature, Dalian Xiongdong Street integrates cultural and tourism elements with local industries, implementing a promotion strategy of online and offline complementarity, attracting numerous tourists and consumers, injecting new vitality and vitality into the region. However, combining cultural tourism with the creative industry has also brought some problems. Firstly, excessive reliance on IP marketing for Juxiong Beibei installation art may lead to insufficient interactive experience, while requiring significant funds for technology research and development and maintenance of installation art. Secondly, balancing commercial activities with the display of Juxiong Beibei as the core IP is also a challenge. Finally, it is necessary to find a balance between cultural heritage protection and commercial profitability to address new challenges.

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4.3 Present Construction Model of Design Application of Immersive New Media Installation Art in Urban Commercial Space in Dalian City

The researcher cannot construct a model in art and commercial space due to time limitation and cost. The researcher can only propose it on paper with comments of authority.

The researcher based the constructive a model using the followings: language of art, description of the model, elements and principles of art, interpretation: to judge whether or not the work succeeds or fail and the accessibility of the model, the proposed cost and time needed for the construction of the model, and comments of authority.

4.3.1 Language of Art

Touch and Projection Human-Computer Interaction Art Installation

The installation is named HuaLu. The pronunciation of Hualu in Chinese is same as flower deer, which is a kind of animal called sika deer. It means a beautiful, smooth, flat and a bright road, symbolizing a bright future. It is a blessing for the commercial district and also for Dalian.

Dalian is the only city in China to have a herd of wild sika deer in the city, which is due to the kind and warm character of the local people and the concept and practice of animal protection that is deeply rooted in the local culture. Therefore, the deer is a very representative animal of Dalian. The city of Dalian used to be famous for its convenient railway and sea transport modes, which are very characteristic of Dalian and made Dalian go on a long and flowery road. (Yin, interviewed, 2023)

In China's current policy and the development of the Northeast, the Northeast is not a place where the economy or policy is tilted, but Dalian is still relying on its own unique culture and advantages in China has a significant position, like a flower blooming in the cracks of the stone, the people of Dalian firmly believe that Dalian in the future page will have its own flower road.

Therefore, the installation is named HuaLu. (Figure 21)



Figure 21. New Media Installation Art HuaLu Renderings (Master Vision)

Source: Sui Guanglong (2023)

4.3.2 Description of the Model

The whole installation is placed in the center of the space in a cylindrical shape. 4 meters high and 1.9 meters in diameter. The sea-rail transport and wild sika deer in Dalian culture are selected as the main design elements by accurately imitating the appearance and form of the outside world to convey specific themes and emotions. It is composed of a flexible curved splicing screen. Inside is a projection device and a sika deer shape with antlers growing into simulated branches, which is in close contact with the screen. The design focuses on the formal elements of the artwork, such as lines, colors, shapes, compositions, etc., emphasizing the inherent visual structure and design principles of the work. This antler radiates from bottom to top, like a railway and maritime map. The road map takes Dalian as the center and transports to various places. From the outside, the interior of the installation resembles a deer-shaped tree, with a map of Dalian on the screen, its lines attached to the curved screen like cracks, and branches attached to the cracks. When someone touches the map, the curved screen displays corresponding graphic symbols and projects them onto a nearby blank wall. The base of the screen is made of cylindrical stepped rocks, with a smooth stone slab at the top. The entire screen is projected by a holographic projection from the top along the edge of the base. The deer rises from the stone slab,

displaying the vitality and technology of its branch-like antlers. The core of the immersive new media installation artwork HuaLu is to convey emotions and emotional resonance. The emotions and emotions of the work are expressed, and the audience experiences and creates emotional connections by interacting with the work. (Figure 22) (Figure 23)



Figure 22. New Media Installation Art HuaLu Renderings (Side Vision)

Source: Sui Guanglong (2023)



Figure 23. Video of New Media Installation Art HuaLu

Source: Sui Guanglong (2023)

Description of the construction drawings: The overall shape is cylindrical, and the periphery of the installation art is a curved screen. The screen itself has a touch function and carries countless sensors. It can display the Dalian map and interact with users through different touch points. The built-in installation art is intended to be in the shape of a wild sika deer, the base is about 0.4 meters high, the built-in installation art is about 3.6 meters high, and the antlers are about 2.6 meters high. Three equidistant miniature 360-degree holographic projection devices are set on the top of the installation art, projecting image information according to different touch points touched by the user. The key equipment of the main body of the device is inside the body of the deer. It has a built-in host computer with countless controllers, which can also be said to be the execution brain. The purpose is to connect data, send data, modify data, and decentralized control other devices to allow the equipment to operate normally. (Figure 24) (Figure 25)

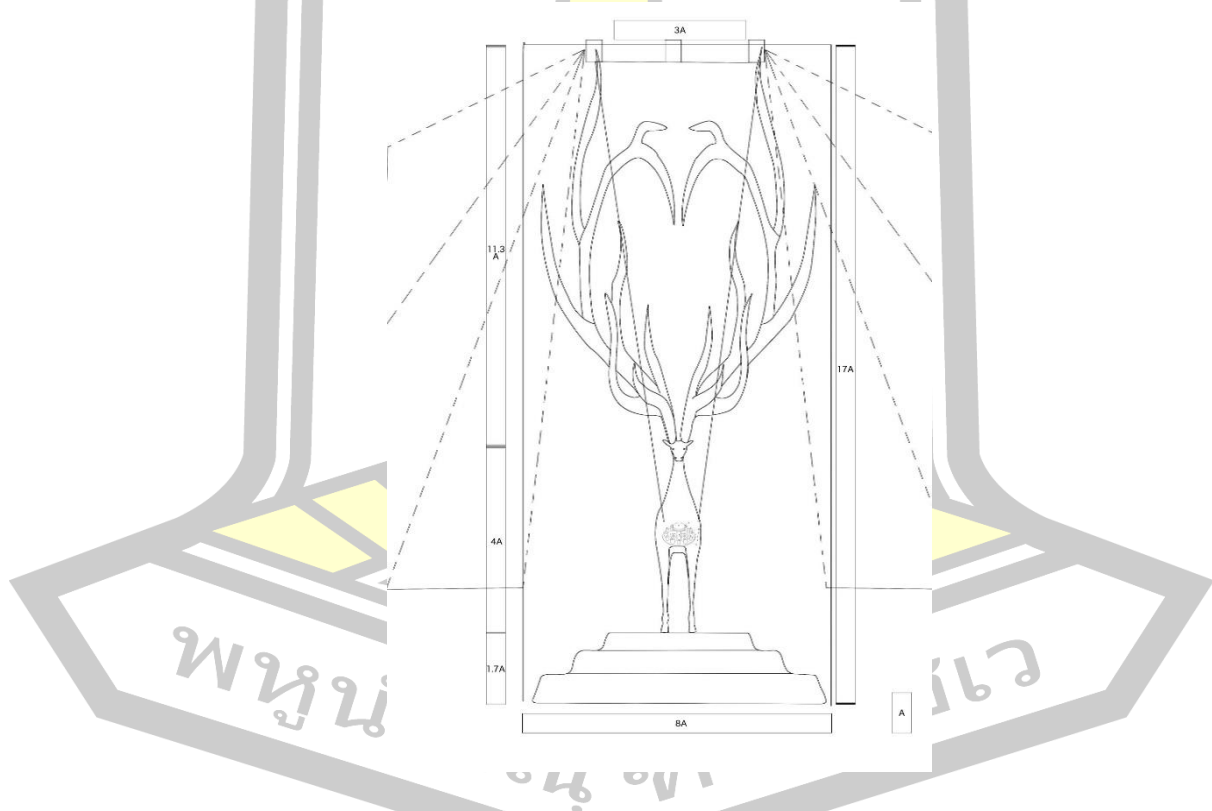


Figure 24. New Media Installation Art HuaLu Construction Drawings (Master Vision)

Source: Sui Guanglong (2023)

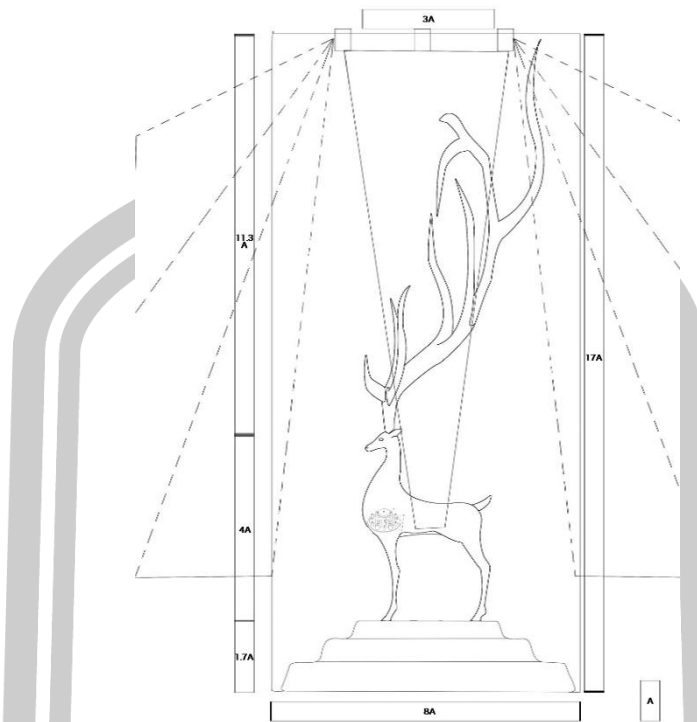


Figure 25. New Media Installation Art HuaLu Construction Drawings (Side Vision)

Source: Sui Guanglong (2023)

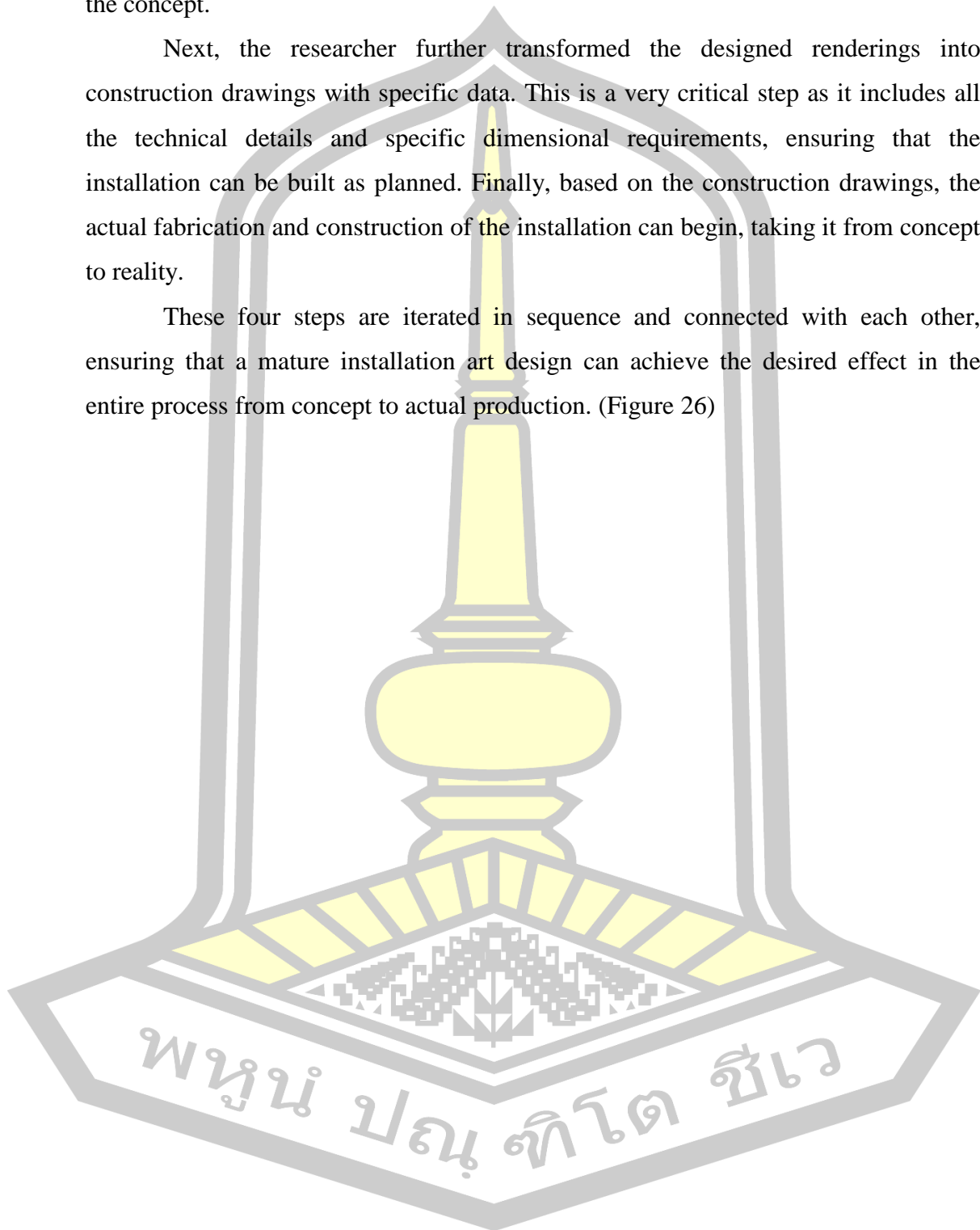
The design of the immersive new media installation art flower path needs to be gradually developed and realized through the following four steps. First, the researcher started with the information collection stage and extracted key information from literature and interviews, which helped to clarify the background and context of the project. Require. Secondly, determine the goal of the installation. The main purpose of the installation is to attract customers, enhance the image of the mall, convey specific information and create an artistic experience. This information is transformed into a concept map based on the actual spatial extent, which expresses the initial idea and direction of the design. Concept maps help ensure that we stay on track during the design process.

Then, the researcher entered the design stage of specific shapes. Convert concepts into preliminary sketches and 3D models to visualize the appearance and structure of the design. The researcher considers the connection and relationship between each part, while determining the required technology, materials and

equipment to ensure the feasibility of the design. This helps prove the feasibility of the concept.

Next, the researcher further transformed the designed renderings into construction drawings with specific data. This is a very critical step as it includes all the technical details and specific dimensional requirements, ensuring that the installation can be built as planned. Finally, based on the construction drawings, the actual fabrication and construction of the installation can begin, taking it from concept to reality.

These four steps are iterated in sequence and connected with each other, ensuring that a mature installation art design can achieve the desired effect in the entire process from concept to actual production. (Figure 26)



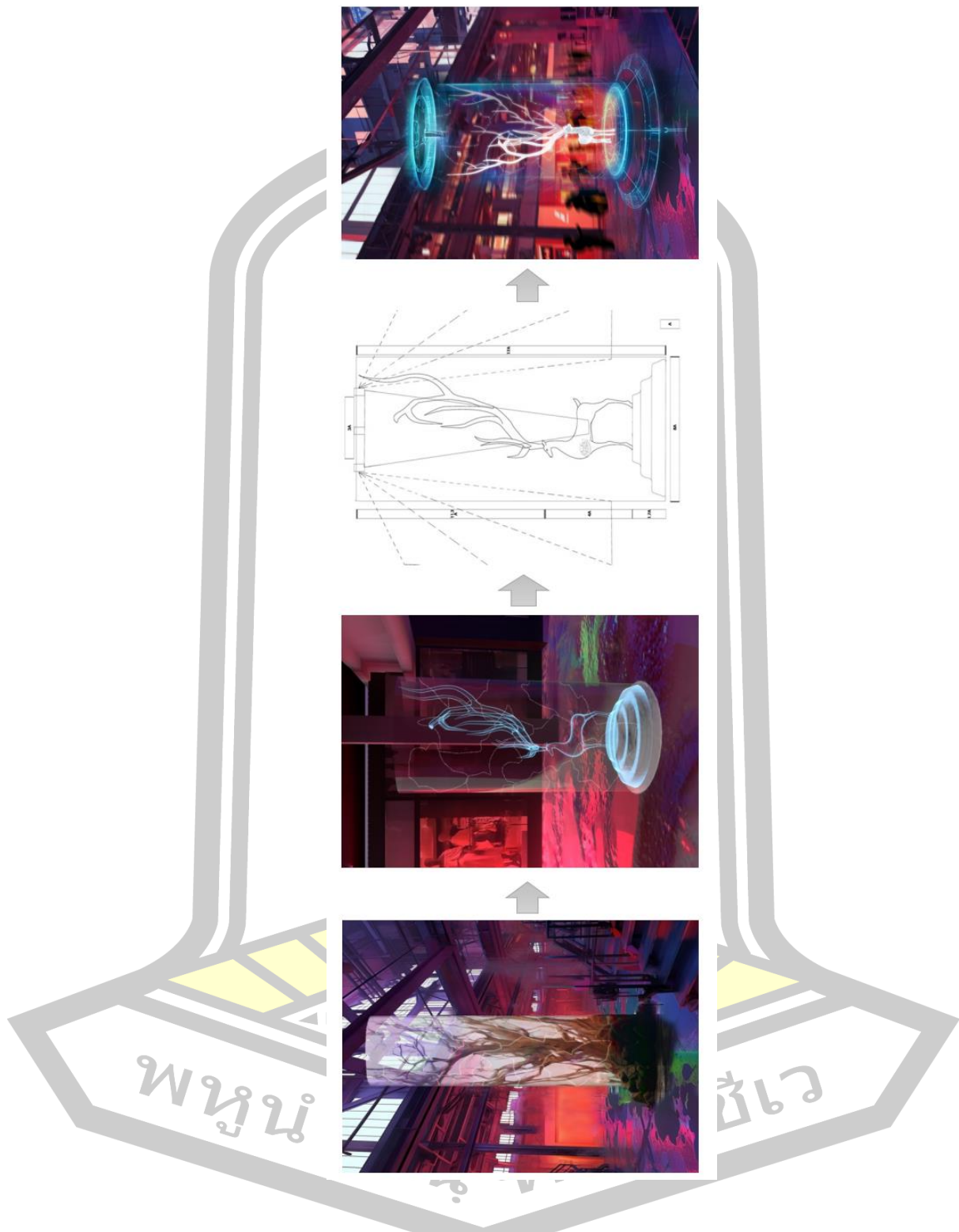


Figure 26. New Media Installation Art HuaLu Design Steps Chart

Source: Sui Guanglong (2023)

The doorway has the usual colors of the HUALU as its main hue, The form of the device as the main image, so as to deduct the title. This is the most critical core essence of the whole front door design, with luminous colors and design to attract more attention of passers-by, so that customers remember this IP, deepen the memory of this IP.

From the passers-by from far to near to come over a process point of view, the whole door header design using color, font, layout, design, successive and reasonable to let passers-by to get to the core of the key points that is the name of the shopping district and the image of the shopping district, and each element is extremely simple and focused, no redundant and wordy components in it, can quickly let passers-by identify and perceive the connotation of the key points.

Secondly, it gives a very strong recognition, has its own uniqueness, visually exaggerated shape, font, color can make the door head full of personality and eye-catching to attract more young customers, but also highlights the brand characteristics, so that that shopping mall audience is more youthful. (Figure 27)



Figure 27. New Media Installation Art HuaLu Door Design Renderings

Source: Sui Guanglong (2023)

4.3.3 Analysis: Elements and Principles of Artwork

Zhou (interviewed, 2023) said that Dalian, as an important port city on the northeast coast of China, has abundant shipping resources and a convenient railway network. Therefore, sea-rail combined transport has been widely used in Dalian.

Wang (interviewed, 2023) said that Dalian is one of the main distribution areas of sika deer in Northeast China. The first traces of sika deer were found in the urban area of Dalian in 2004. It is presumed to belong to the population that escaped during breeding. According to the unified understanding of the biological community, domesticated wild animals can be recognized as wild species after being released into nature or escaping into the wild for three generations. According to this standard, the sika deer in Dalian is a standard wild animal. This point of view has also been recognized by the Forest Resources Protection Division of the Municipal Natural Resources Bureau.

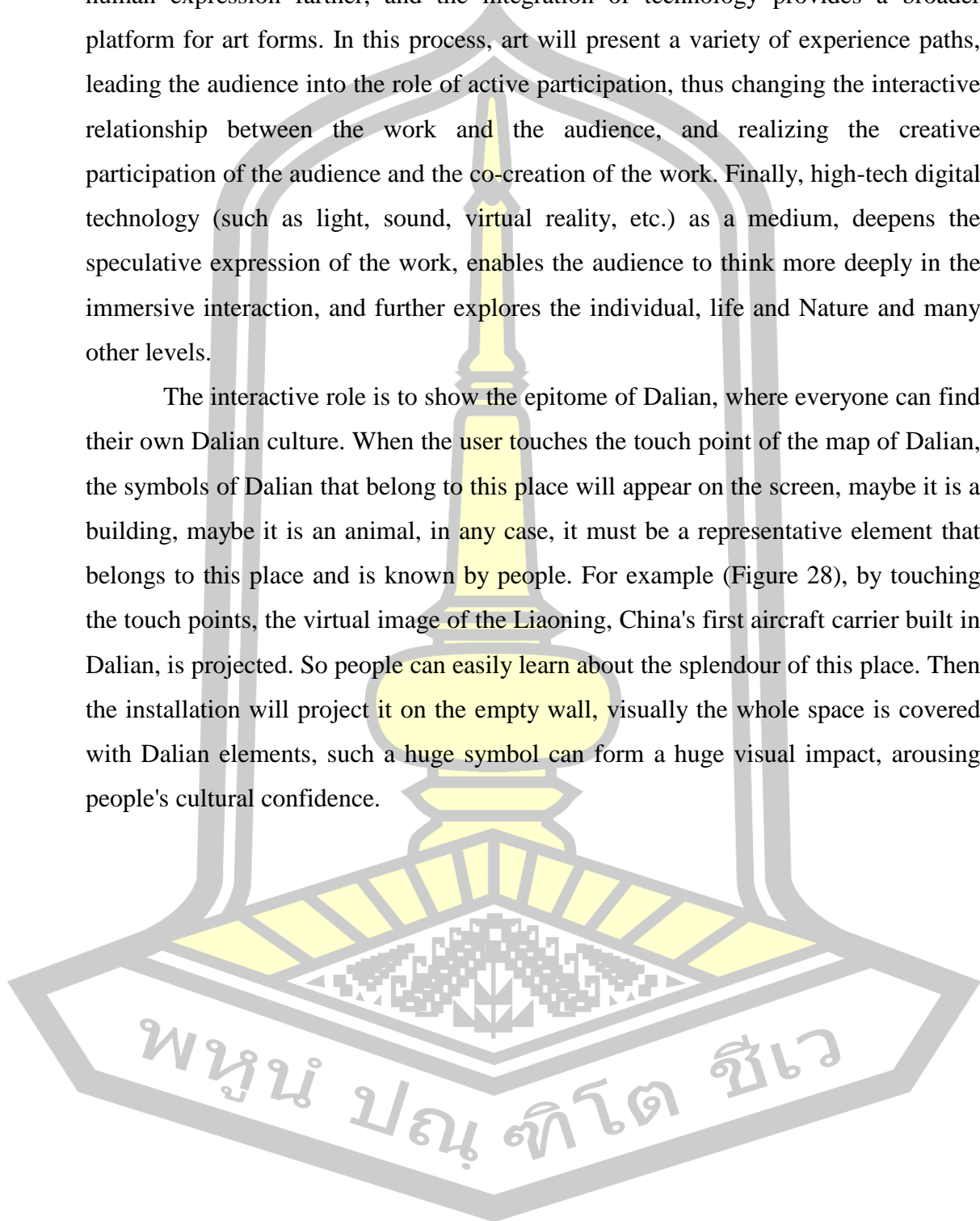
Dong (interviewed, 2023) said that the herd of wild deer formed in Dalian, to some extent, can be a kind of reintroduction to the wild of the original place, just like the rewilding of giant pandas and Siberian tigers, which provides an opportunity to restore the biodiversity of the Liaodong Peninsula. a possibility. Dalian sika deer are popular and very close to humans, which is directly related to Dalian's love for wild animals.

Therefore, according to purpose sampling, the representative sea-rail combined transport of Dalian culture and the image of wild sika deer in the urban area are selected as the main design elements of the installation. This immersive new media installation compares these leafy sea-rail transport lines to branches of a tree, and surrounds the map of Dalian on the outer ring of the screen, fusing the deer as an intention with the tree and turning it into a trunk, which is its basic form. In a static situation we see such a tree standing in the industrial factory style that looks like a deer, while the map of Dalian is displayed on the curved screen as if it is a piece of debris, as if the tree is about to break through it, giving a feeling of wild growth and vitality against the background.

Xiao (interviewed, 2023) said that firstly, digital technology acts as a link between science and art, and its potential not only improves the quality of life, but also opens up new perspectives for artistic innovation. Secondly, technology is an

extension of human ability. The concept of digitization pushes the boundaries of human expression farther, and the integration of technology provides a broader platform for art forms. In this process, art will present a variety of experience paths, leading the audience into the role of active participation, thus changing the interactive relationship between the work and the audience, and realizing the creative participation of the audience and the co-creation of the work. Finally, high-tech digital technology (such as light, sound, virtual reality, etc.) as a medium, deepens the speculative expression of the work, enables the audience to think more deeply in the immersive interaction, and further explores the individual, life and Nature and many other levels.

The interactive role is to show the epitome of Dalian, where everyone can find their own Dalian culture. When the user touches the touch point of the map of Dalian, the symbols of Dalian that belong to this place will appear on the screen, maybe it is a building, maybe it is an animal, in any case, it must be a representative element that belongs to this place and is known by people. For example (Figure 28), by touching the touch points, the virtual image of the Liaoning, China's first aircraft carrier built in Dalian, is projected. So people can easily learn about the splendour of this place. Then the installation will project it on the empty wall, visually the whole space is covered with Dalian elements, such a huge symbol can form a huge visual impact, arousing people's cultural confidence.



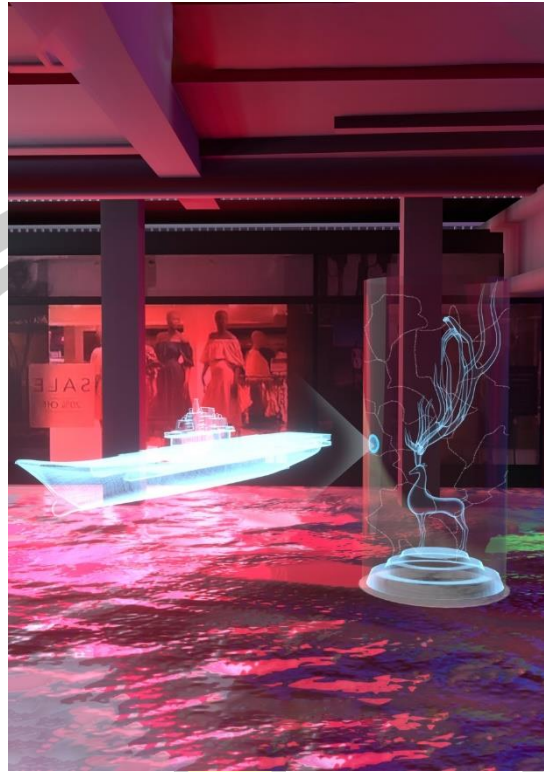


Figure 28. New Media Installation Art Hua Lu Projection Imaging

Source: Sui Guanglong (2023)

Such a process of human-computer interaction provides the user with a more intuitive and natural operating experience, and the installation art uses touch screen technology, which allows the user to interact with the curved screen through gestures such as flicking, sliding and pinching and releasing. It uses a flexible spliced surface, it provides a more appropriate look for the installation art, a more direct method of operation, allows for more sensitive touch control, and quickly pops up and zooms in on information when the user touches a touch point.

On top of this the installation art also incorporates interactive projection technology, which triggers the appearance of graphic symbols when the user touches a sensor point and projects them onto the wall, enabling the user to quickly learn about the cultural information contained therein and receive a greater visual impact. Users learn about the relevant information by virtue of their own actions, for the user is their own discovery, can deepen the user's impression. Only to achieve such an

effect, to ensure that the interactive projection production is successful, the use of interactive projection technology is effective.

A touch projection art installation combines digital projection technology with the human-computer interaction form of interactive touch to create a multi-sensory, immersive art experience. It usually incorporates various artistic elements and principles to engage the viewer.

Touch projection installation art combines digital projection technology with interactive touch human-computer interaction to create a multi-sensory and immersive art experience. It usually incorporates various artistic elements and principles to captivate the audience.

New polymer material bends into cylindrical installation art, such a regular geometry combined with irregular wood, the lines and shapes they form have a great sense of contradiction and conflict, the appearance is like the sharp long straight lines of a curved screen with a glass cover, geometric shapes, meets the irregular lines of a tree branch, irregular shapes, such a collision is very confronting. The map of Dalian is like a crack on the surface of the screen, which is meant to show that Dalian is a city as alive as a deer, even though it is bound by many restrictions and rules, it is still a city with vitality. In the cracks of the stone, in the closed glass cover, it still thrives and tries to break through the limitations.

The whole installation is located in the center of the commercial space, and the projection produced by the effect is reflected on the other shops and the surrounding environment to make a combination, under the effect of projection the whole space seems to be a part of the installation, but the actual space occupied by the installation only occupies the middle position. The conventional architectural style of the factory building in the space is affected by the colors and graphics projected by the installation, which also becomes lively, and the tree in the installation shows more vitality in such an indoor, conventional building.

The contrast between the cluttered, leafy branches and the regular geometric columns makes the installation look more alive, while the graphic symbols and colors projected by the installation harmonize with the original cyberpunk style of the environment. This allows the installation to harmonize with the environment without being assimilated into it and becoming obsolete.

The technology involves projecting images, animations, or videos onto irregular surfaces such as walls, sculptures or buildings to change their appearance. The projections are precisely aligned with surface contours, creating stunning visual effects. The visual content of the projection is the abstract shape and pattern of the representative information culture of each region in Dalian. Content can be static images, dynamic animations, specific dates or even graphics generated in real time, making each interaction different, adding fun and engaging users. A well-designed color palette can evoke a specific emotion or mood. Vibrant, vibrant cyberpunk-inspired projections match the factory buildings, and there's a sense of the past colliding with the future.

Essentially, the installation combines cutting-edge technology, artistic expression and audience engagement to create an immersive and interactive journey that stimulates the senses and the mind. It is a dynamic fusion of art and technology that invites participants to become active participants in the artistic narrative.

Create unique visual, emotional, and intellectual experiences by combining physical materials and conceptual elements. When designing the installation art flower path, the researcher used the theory of art semiotics to convey deep meaning and inspire the audience to think.

First, the researcher selects symbols and symbolic elements, which are often specific to Dalian's cultural, historical, or social context, so that the audience can understand and interpret the symbols. Representatives of sika deer, sea-rail transport, and cultural elements from various regions in Dalian City convey specific meanings in the work by choosing specific symbols.

Second, the researcher consider how symbols are arranged and combined. One of the key concepts of semiotics is that relationships between symbols can create new meanings and emotions. By adjusting the space, proportion and interplay between symbols, viewers can be guided to different interpretations of the work.

Finally, the environment of the new media installation art HuaLu is also a key factor. The commercial environment includes light, sound, temperature, and the position of the audience, all of which affect the audience's perception and experience. The researcher uses these environmental elements to enhance the effect of symbols to guide the audience's emotions and thinking.

The design of the new media installation artwork HuaLu involves selecting symbols and symbolic elements, adjusting their arrangement and combination, and using environmental elements to create a deep artistic experience. Semiotic theory provides the researcher with a powerful tool to convey ideas, emotions, and meaning while stimulating audience participation and reflection. This interactivity and multi-level communication is one of the important features of installation art.

4.3.4 Interpretation: To Judge Whether or not the Artwork Succeeds or Fail

In order to attract users and make them feel something unexpected, in addition to the use of new modes and technologies such as interactive projection installation arts, it is also necessary to be distinctive enough to be integrated with the environment or culture on a deeper level. Therefore, each thematic event date to make use of the installation art, need to let the user to produce a sense of freshness, which requires personalized customization, can be tailored to each event new visual effects, and the use of curved splicing display and projection technology of the installation art is a good solution to this problem. Compared to the original installation, it is technologically newer, and on different days of the event it is only necessary to change the projected visual symbols to change the atmosphere of the pavilion as a whole, conforming to the theme and bringing more novelty to the user.

However, there are also challenges with new interaction methods, such as accuracy, false triggering, and privacy security. It is easy to see from the history of web development that as the web and web applications evolve, so do our starting points and purposes for designing interaction modes. In the initial stage of network development, our focus is on designing network infrastructure interaction modes, i.e., data sending and receiving modes at the data link layer and the network layer, with the aim of ensuring information accessibility, e.g., packet-switching technology, sliding window technology. With the development of network applications and the prominence of network security issues, our focus shifted to network application interaction patterns with the aim of ensuring secure access, i.e., resources or services coming from desired providers or arriving at recipients authorized to access them, and being transmitted without interception, tampering, and replay, e.g., Virtual Private Networks VPN technology. It is difficult to avoid this problem when such outdoor

devices and projections, which can modify the visual display content, are designed to ensure that they are not intercepted or tampered with in transit or during display.

The holographic projection projects regional representative cultural elements of Dalian, creating an immersive atmosphere for the commercial space. According to the theory of media environment, taking new media as the main object of expression, it aims to fully express the impact and role of the commercial environment of disseminating digital technology and the immersive new media it constructs on people and society. Through the social creativity of the media, we can change people's social behavior and perception, and deeply shape Dalian culture. At the same time, the visual content presented can produce commercial effects with the brand. This form of touch and projection human-computer interaction device can effectively solve the problems of poor interactivity, difficulty in updating, and excessive reliance on IP image in the installation art Giant Bear Beibei, while retaining the theme blocks of Dalian's urban commercial space. The style continues the audience group and expands the scope of the recipients, innovating the brand culture with local characteristics of Dalian.

The immersive new media installation art can more comprehensively display all aspects of Dalian culture, allowing the audience to gain a new cultural experience in the process of interacting with the artwork, so as to deeply feel the unique and diverse cultural charm of Dalian. At the same time, such art exhibitions are also expected to attract more audiences, enhance the attractiveness and influence of cultural tourism, and bring positive impacts on Dalian's cultural promotion and economic development.

4.3.5 The Proposed Cost and Time Needed for the Construction of the Model

The cost and time to produce an immersive new media installation in an urban commercial space can be affected by many factors, including the scale and complexity of the project, design requirements, material selection, technical needs, and location context. Here is a summary of the time and cost this installation took:

Design and concept development: A design and concept development phase is required before renderings and construction drawings are produced. This takes weeks and involves collaborations between artists and designers. The cost here is mainly the designer's design fee, which is about CNY 5,000-8,000.

Video Production: Shooting, editing, and post-production require additional time and cost, as well as 3-5 weeks to hone and interact with the design editor. The fee for this part to the video producer is around CNY 2000-3000.

It took a total of about 3 months to discuss, design, improve the renderings, construction drawings and videos of this device, and cost about CNY 20,000.

Installation implementation spending forecast. Materials and technology: According to design drawings and concepts, select some special materials and equipment to complete the installation. First, a curved flexible screen is installed on the cylindrical screen. The holographic projection effect achieved by the device is equipped with a 360-degree panoramic micro-projector. These materials and equipment are very expensive but can produce unique effects. The cost of a curved flexible screen is CNY 100,000-150,000 per square meter, so the cost of a curved flexible screen for this device is approximately CNY 1.2-1.8 million. The cost of projection equipment is about CNY 20,000-40,000.

After buying the materials comes the assembly part, which again takes about a week. In addition, you need to pay about RMB 1000-3000 to the installer.

Testing and debugging maintenance: testing and debugging the equipment to ensure that it is working properly. This requires multiple inspections and tests, so the personnel cost for on-site debugging and maintenance is around CNY 6,000-10,000.

Therefore, the total cost of such a device from preliminary preparation to on-site installation and production is about CNY 1-1.6 million.

This choice of physical materials and equipment reduces the cost of installation art and the cost of renewal and maintenance to a certain extent. Based on sustainable materials, the new media installation art HuaLu can visually allow people to fully feel the immersive experience. The selection of materials is one of the important factors of the researcher's design at the design drawing stage. Due to the current high cost of installation art in urban commercial spaces in Dalian, in order to solve this problem. The researcher fully compared the price and functionality of various materials and equipment, including later update technology and maintenance.

4.3.6 The Accessibility of the Model

User interface design plays a crucial role in modern technological installation art because it directly affects the user's interactive experience. Here are more details on these key elements:

Icons, Navigation, and Controls: Installation Art's user interface has been carefully designed to ensure that users can easily understand and operate it. Clear icons represent different functions, intuitive navigation allows users to smoothly navigate through various parts of the Dalian map, and easy-to-understand controls make interactions simple and straightforward. For example, if a user wants to view information about a specific area of Dalian, they only need to tap the icon for that area. This design allows users to quickly obtain the information they need without complicated instructions or learning curves.

Touch interaction: Contemporary installation art not only relies on visual effects, but also emphasizes the importance of touch response. The high sensitivity of the installation's curved touchscreen is crucial for the user's natural interaction. Users can freely slide displayed information content on the screen without encountering touch delays or inaccuracies. Therefore, highly sensitive screen materials were chosen for this installation to ensure that every touch of the user receives an immediate response. In addition, slight touch vibration can further enhance the user's tactile experience, making their interaction with the installation art feel more real and pleasant.

User feedback: The installation art provides visual and tactile feedback when the user touches the screen, which is key to ensuring that the user understands whether their operation was successful. For example, when a user taps an icon or performs another interaction, the installation can use a brief animation, color change, or touch vibration to indicate that the action has been accepted. This timely feedback helps users confirm that their intent has been recognized, increasing user confidence and satisfaction.

Compatibility: The installation is designed with compatibility with different operating systems in mind. This ensures that the device can run smoothly on a variety of platforms, regardless of whether the designer is using iOS, Android or other operating systems, and can seamlessly access and upload the real-time patterns or information required.

Support: To ensure that users do not encounter difficulties during their interactions, support and technical assistance are always available from on-site staff. No matter what issue users face, staff are available to provide assistance and guidance to ensure they get the most out of their experience with the installation.

All in all, factors such as well-designed user interface, responsive touch, timely user feedback, compatibility and on-site support jointly ensure the ease of use and interactivity of this immersive new media installation art, allowing users to fully immerse themselves in the art experience, and easily interact with the installation art.

4.3.7 Comments of Authority

Jiang & Xiao (2023) evaluation of the immersive new media installation art HuaLu model is divided into the following aspects:

Artistic evaluation: Immersive new media installation art usually includes sound, image, interaction and other elements, and the installation can create an immersive feeling for the audience. In a commercial space in a city like Dalian, elements such as local culture and natural landscape can be integrated, adding a lot to the artwork. It can be a valuable experience for the masses. This installation art also realizes the combination of space and installation art to convey the expected information and has a strong narrative. The installation is able to accurately depict cultural symbols, stories and aesthetics. It conveys the urban culture of Dalian and condenses it into an image symbol representing the city.

The installation is designed with a clear theme, fashion and fun, with the designer's personal and unique style. First of all, he incorporated some unique elements of the Chinese city of Dalian into the design, such as the intertwined tree roots representing Dalian's city card "Sika Deer", which perfectly blends the tentacles and roots of the sika deer to complement each other; for example, the white The plates on the transparent cylinder represent the urban area map of Dalian, which wraps the urban area with vigorous and upward-growing trees, representing the prosperity of the city. Secondly, the interaction design of new media is really the icing on the cake. Design is not only for viewing, but also for people watching to feel that design makes life better. The immersive interactive design of new media makes the viewers feel as if they have walked into the city personally, understand the unique cultural heritage of the city, feel the nourishment and nourishment of its culture, and become a part of it,

so that Design has entered everyone's heart. It reflects the author's unique design thinking, rich cultural heritage, and love for his country.

The installation adopts new technology with attractive form, which helps to create a unique cultural image compared with static sculptural installations in other commercial spaces, making the commercial space stand out in the crowded market. But the inclusivity of the experience doesn't give much thought to how some people with disabilities, especially the visually impaired, should experience it. Of course, the user group of the installation art is not mainly this group, but more consideration of special groups of people is what we should take into consideration.

The innovation and uniqueness of the immersive new media installation art HuaLu and its degree of integration in local culture and urban atmosphere are unique. The installation's visual appeal, emotional expression, and emotional resonance with the viewer are evident through video.

Evaluation of technology realization: The application of the innovative technology of the immersive new media installation art Hua Lu is relatively simple, and the combination of sensor and projection technology is used to achieve the final effect of this installation. Integrating touch projection technology into commercial space and expressing urban culture is a collision between traditional art practice and new technology. In this way, projection technology can make the installation express alternative information, and to some extent, it can also provide services for cultural activities, exhibitions, and cooperation, creating spaces and atmospheres that can attract different groups of people and promote community building.

A well-designed user interface for an installation is crucial to ease of use. Clear icons, intuitive navigation, and easy-to-understand controls make interaction easy. The responsiveness of new media installation arts to touch is very important. Users should be able to interact naturally without experiencing delays or inaccurate touch recognition. Therefore, a more responsive screen material was chosen for this installation art. At the same time, installation arts that are easily calibrated and aligned with the projection surface ensure accurate interaction.

Space adaptation and layout evaluation: The layout of the commercial space is crucial to the display and viewing of this immersive new media installation. The installation art stands in the atrium of the commercial space, with a cylindrical shape

as the main vision, and the design of the internal elements of the installation art makes the entire commercial space a part of the work. The entire commercial area is no longer just a single consumption place, but has unique artistic value. The installation art has a high degree of integration with the commercial space and is in harmony with the space environment. The size, shape, and placement of the installation art, as well as its impact on the circulation and comfort of the space, are relatively suitable from the observation point of view.

According to the spatial analysis, the size and shape of the immersive new media installation art HuaLu can be integrated into the space without occupying too much space and affecting the circulation of the audience.

In terms of spatial circulation and viewing angles, the audience's circulation paths and viewing angles in the commercial space are considered. Ensure that the placement of the installation art does not hinder the free circulation of the audience, and at the same time enable the audience to interact with the installation art in all aspects and watch the cultural content conveyed by the installation art from different angles.

In terms of environmental integration, the integration of this installation art with the overall atmosphere and design style of the commercial space is very innovative. The cylindrical appearance of the installation, the visual image of deer-like trees, colors and materials are in harmony with the decoration style of the space, creating a unified visual experience.

In the setting of the interactive area, according to the interactive characteristics of the installation art, the area where the audience interacts with the installation art is determined from a full range of angles. Fully consider the possible behaviors of the audience, such as standing, sitting, or moving, and design a suitable interactive space.

Safety considerations ensure that the layout of the installation art does not pose a threat to the safety of the audience. Avoid possible safety hazards such as sharp edges, dangerous projections, etc.

In terms of light control, the visual effect formed after the visual symbols projected on the wall and the actual space structure are fully considered. Make sure the light does not disturb customers in other areas, nor cause glare or reflection issues.

In terms of space constraints and creative realization, the possible constraints of commercial space, such as support structures, wires, pipes, etc., are also considered to ensure that the layout of the installation will not be affected by these constraints. At the same time, ensure that the originality and core concept of the installation can be reflected in the layout.

In terms of multi-dimensional experience, the viewer's viewing and interactive experience at different heights, angles and distances near the installation art is considered. Ensure that the visual and interactive effects of the installation can be fully reflected in different viewing angles.

By fully considering these aspects, it can be seen that the spatial adaptation and layout of the immersive new media installation art HuaLu in urban commercial space in Dalian is reasonable and can create a visual and interactive experience that pleases the audience.

Cultural and Social Factors Assessment: The installation uses projection to integrate the space into it. The barrier is low and does not affect the normal operation of the commercial space. At the same time, it adds interest to Dalian's commercial space, integrates into the culture, and plays a role in promoting citizens' cultural confidence. Well-designed and well-placed art installations can create a more active atmosphere, making customers more likely to stay in the space and potentially increasing their likelihood of making a purchase, but in our pro-life upbringing, our own experiences are usually associated with small communities, would it be more emotionally impactful and relatable to include information about smaller communities. This might be more relatable to the general public.

In terms of local cultural integration, the installation art can integrate local cultural elements, historical background, traditional art, etc. into it. Through visual elements, interaction, etc., the audience can feel the unique charm of local culture in the interaction.

In terms of cultural narrative, the installation conveys a specific cultural narrative through interaction and experience. For example, through projection image technology, the audience can feel as if they are in a historical event or a traditional story, thereby conveying cultural values and historical inheritance.

In terms of reflection on social issues, the installation triggers thinking and discussion of social issues. Through art, it arouses the audience's attention to social issues, such as environmental protection and social inequality, thereby conveying profound social messages.

In terms of respect for cultural diversity, considering that there may be audiences with different cultural backgrounds in Dalian, the installation should respect and accommodate different cultural viewpoints and audience groups. Avoid conflicting or sensitive content and ensure that the installation art does not spark cultural misunderstanding or controversy.

In terms of participation and sharing, the installation can encourage the audience to participate in the creative process, thus embodying the concept of social sharing. For example, set up a touch interaction link to allow the audience to participate in the creation or influence the development of the work, thereby enhancing the sense of social participation.

In terms of social identity and emotional resonance, art installations can arouse the audience's social identity and emotional resonance through emotional and emotional expression. This helps to bring the viewer closer to the work, prompting them to engage more deeply with it.

In terms of social reflection and innovation, art installations can arouse audiences' thinking about social status and future development. Inspiring innovative thinking through reflection on social issues may have beneficial social impact.

Combining these aspects, the immersive new media installation art HuaLu realizes the embodiment of cultural and social factors by creatively integrating cultural elements, social themes, and interactive experiences in this commercial space. However, ensuring that the work embodies these factors also needs to be able to match the expectations and acceptance of the audience.

In terms of interactive participation, the audience's participation and interaction are emphasized. The touch-based human-computer interaction method designed by the installation encourages the audience to actively participate in the creative process, from passively receiving to actively participating.

In terms of emotional added value, art installations can bring emotional added value to commercial spaces, enabling Dalian residents and tourists to have a positive

emotional and emotional experience of the space. Positive emotional experience can make customers more willing to spend time and money in commercial space.

In terms of installation recognition and differentiation, the installation can become a unique sign of the commercial space, bringing differentiation and uniqueness to the installation. Through the interaction with the installation, the audience will remember the experience and brand of the commercial space, thus enhancing the awareness of immersive new media installation art.

When it comes to customer retention and loyalty, by creating memorable experiences and strong visuals, you can increase customer retention and loyalty. Customers will be more willing to revisit the commercial space because of the emotional connection with the installation.

In terms of social sharing and interaction, the installation can become a topic on social media, and the audience will influence each other by sharing their interactive experience with the installation. This social sharing can further amplify the reach and popularity of the installation.

In terms of cross-border cooperation, the installation can attract customers from different fields, such as art lovers, technology fans, and family tourists. Commercial spaces can reach a wider audience by co-launching installations with partners from different fields.

In terms of multi-level experience, the installation art can also consider providing different levels of experience. Viewers can choose to watch at a shallow level, or they can have an in-depth interactive experience, so as to meet the needs of different audiences.

In terms of improving the shopping experience, the installation art can provide additional fun and stimulation for shopping, and enhance customers' interest and satisfaction in shopping. Through the incentive mechanism, interactive games or activities related to the installation art are set to reward consumers. For example, customers can get coupons or gifts through interaction to motivate them to spend.

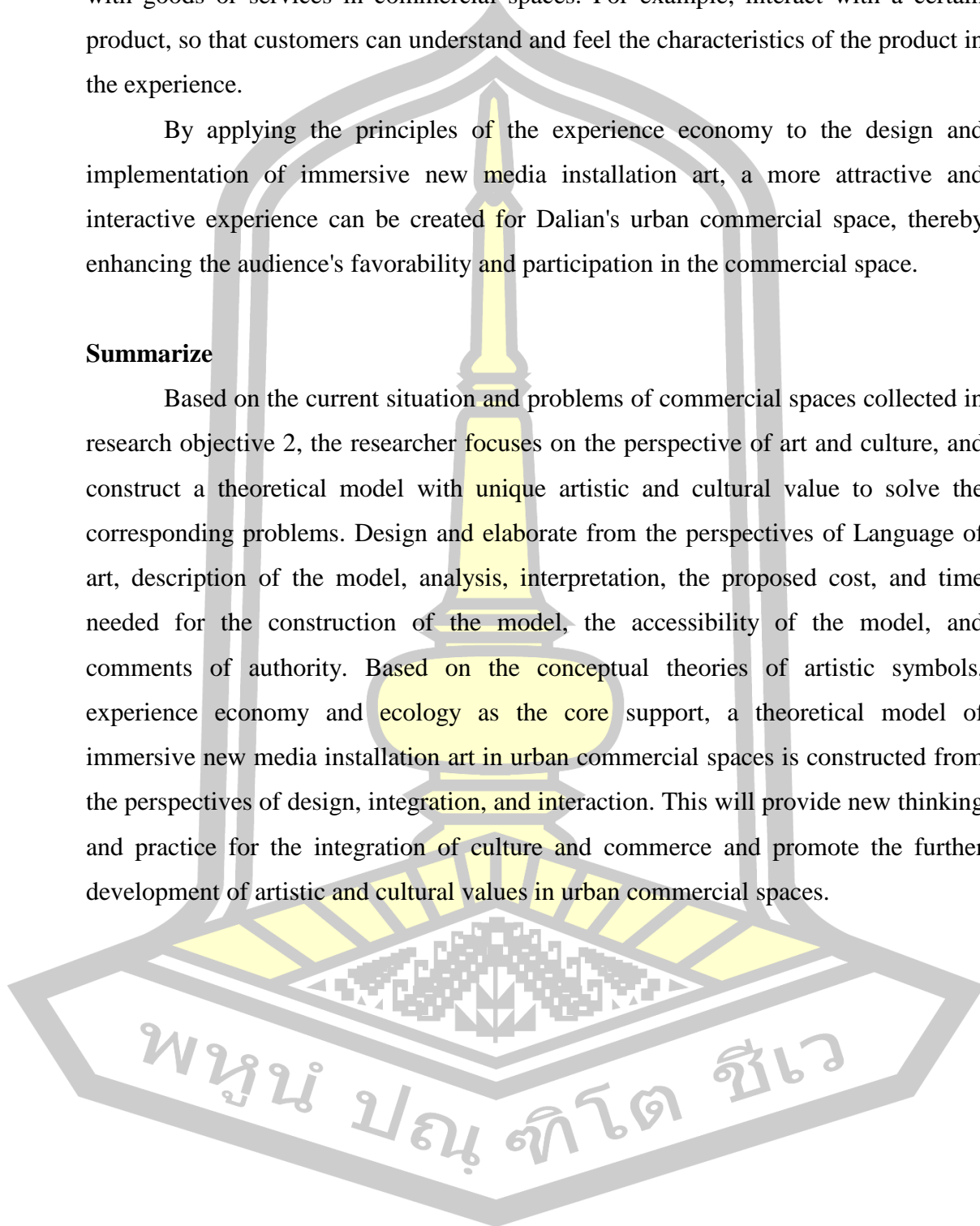
In terms of theme activities, the commercial space can hold relevant theme activities based on the theme of the installation, such as art lectures, creative workshops, etc., to attract customers to participate, thereby enhancing the public's awareness of the field of immersive new media installation art.

In terms of integration with consumption, the installation art can be integrated with goods or services in commercial spaces. For example, interact with a certain product, so that customers can understand and feel the characteristics of the product in the experience.

By applying the principles of the experience economy to the design and implementation of immersive new media installation art, a more attractive and interactive experience can be created for Dalian's urban commercial space, thereby enhancing the audience's favorability and participation in the commercial space.

Summarize

Based on the current situation and problems of commercial spaces collected in research objective 2, the researcher focuses on the perspective of art and culture, and construct a theoretical model with unique artistic and cultural value to solve the corresponding problems. Design and elaborate from the perspectives of Language of art, description of the model, analysis, interpretation, the proposed cost, and time needed for the construction of the model, the accessibility of the model, and comments of authority. Based on the conceptual theories of artistic symbols, experience economy and ecology as the core support, a theoretical model of immersive new media installation art in urban commercial spaces is constructed from the perspectives of design, integration, and interaction. This will provide new thinking and practice for the integration of culture and commerce and promote the further development of artistic and cultural values in urban commercial spaces.



CHAPTER V

CONCLUSION DISCUSSION AND SUGGESTIONS

This chapter summarizes the research topic "The Application of Immersive New Media Installation Art in Urban Commercial Space in Dalian City". This chapter details the three objectives of this study. This thesis summarizes the conclusions and discussions on the historical background, current situation, and problems of new media installation art in Dalian urban commercial space, as well as the construction of a theoretical model of immersive new media installation art in Dalian urban commercial space. Finally, suggestions for future research are put forward and introduced in detail through the following aspects:

Objectives of the Research

1. To study historical background of the origin of immersive new media installation art in urban commercial space in Dalian
2. To study the current situation and problems of immersive new media installation art in urban commercial space in Dalian
3. To present construction model of design application of Immersive new media installation art in urban commercial space in Dalian

5.1 Conclusion

5.1.1 Summary of the historical background of the origin of immersive new media installation art in urban commercial space in Dalian

5.1.2 Summary of the current situation and problems of immersive new media installation art in urban commercial space in Dalian

5.1.3 Summary of construction model of design application of Immersive new media installation art in urban commercial space in Dalian

5.2 Discussion

5.2.1 Discussion on the application value of experience economy theory in constructing immersive new media installation art in urban commercial space.

5.2.2 Discussion of the evolution and challenges of new media installation art in urban public spaces

5.2.3 Discussion on Juxiong Beibei installation art in Dalian Xiongdong Street

5.3 Suggestions

5.3.1 Suggestions for applying the research results

5.3.2 Suggestions for the further study

5.1 Conclusion

5.1.1 The Historical Background of the Origin of Immersive New Media Installation Art in Urban Commercial Space in Dalian

Though the study of the historical background of the origin of immersive new media installation art in urban commercial space in Dalian. It can be summarized as follows: Judging from the historical background of the origin of Dalian's urban commercial space installation art, it can be divided into four stages, namely the starting stage from the late 1980s to the early 1990s; the heyday stage from the 1990s; and the late 1990s to the diverse phase of the early 21st century and the current contemporary phase. In the initial stage, due to China's reform and opening up policy, artists had just begun to be exposed to a wider range of international art trends and concepts. The improvement of artistic awareness laid the foundation for the rise of installation art. In the prosperous stage, artists began to explore the use of various materials and elements to express and create unique works of art. In the stage of diversification, Dalian installation art has entered a stage of more diversification and maturity. Artists began to explore new creative techniques and forms of expression, combining installation art with other art forms. In the contemporary stage, immersive new media installation art has begun to be integrated and applied in Dalian's urban commercial space. Dalian's installation art continues to develop and integrate with the development trends of contemporary art. With the development of the cultural market and changes in art and technology, immersive new media installation art has begun to become a commercial form of artistic expression, allowing the public to appreciate the installation no longer simply, and it becomes an integral part of the artwork through interactive experiences.

5.1.2 The Current Situation and Problems of Immersive New Media Installation Art in Urban Commercial Space in Dalian

For the current situation and problems of immersive new media installation art in urban commercial space in Dalian. It can be summarized as follows: Dalian Xiongdong Street is a commercial district full of creativity and vitality, representing the trend of combining Chinese cultural creativity and cultural tourism virtual industry. The area takes the mechanical installation art Juxiong Beibei as the core and builds it into an iconic cultural element. Juxiong Beibei installation art is not only an installation art, but also the core IP of Dalian Xiongdong Street, representing the culture and characteristics of the area. In order to give full play to this feature, Dalian Xiongdong Street integrates cultural tourism elements with local industries, not only displaying them in physical areas, but also promoting them through online platforms, forming a complementary relationship between online and offline. In addition, Juxiong Beibei installation art has attracted many tourists and consumers, representing the successful combination of cultural tourism and local characteristic industries, injecting new vitality and vitality into Dalian Xiongdong Street.

Juxiong Beibei installation art on Xiongdong Street, Dalian is about the installation itself, but this way of combining cultural tourism and creative industries may also bring some problems. Firstly, over-reliance on the IP marketing of Juxiong Beibei installation art's device and lack of engaging interactive experience. This single form can easily lead to the reduction of Juxiong Beibei installation art's appeal. The research and development of technology and the maintenance of installation art also require a lot of capital investment. Secondly, it is also a problem to balance commercial activities and the display of Juxiong Beibei installation art as the core IP. Too commercial display will weaken its artistic value, and too artistic display is not conducive to attracting the public to visit. Finally, how to find a balance between cultural inheritance and protection and commercial profits is also a new challenge for Xiongdong Street.

5.1.3 Construction Model of Design Application of Immersive New Media Installation Art in Urban Commercial Space in Dalian

For the present construction model of design application of immersive new media installation art in urban commercial space in Dalian. It can be summarized as follows: Focusing on the perspective of art and culture, with the conceptual theory of art semiotics, ecology and experiential economics as the core support, we will in-depth build a theoretical model of immersive new media installation art in urban commercial spaces from the perspectives of design, integration and interaction. First, the researcher collected the design elements of Dalian's representative cultural symbols to create the main visual image, structure, and content of the immersive new media installation. It also includes the selection of the shape, color, and material of the installation art, revealing how artistry is expressed through design language. of. Design concept drawing. Secondly, deal with the immersive experience of the new media installation art "Flower Road" and the interactive experience effect of the commercial space environment to create unique cultural value. Create renderings. Finally, design the location and layout of the installation work in the commercial space, design the overall visual form and size of the installation artwork according to the space environment, and coordinate with the surrounding environment and cultural elements. Make construction drawings.

New Knowledge found in this study

5.2 Discussion

5.2.1 The Application Value of Experience Economy Theory in Constructing Immersive New Media Installation Art in Urban Commercial Spaces

Through literature review, Ma Xiaoxiang deeply discussed the development process, conceptual connotation, and formal expression of new media installation art. He emphasized how new media installation art as a medium can trigger audience participation through interactivity and jointly create artistic experiences. At the same time, the paper focuses on the application of digital technology, virtual reality and other tools in creation, emphasizing its innovation. Ma Xiaoxiang also discussed the cross-cultural communication and dialogue of this art form in the context of globalization, highlighting its characteristics of transcending national boundaries. The

thesis provides profound thinking and analysis for new media installation art, highlighting its important position in contemporary art. (Ma, 2012)

Research on the design application of new media installation art in urban commercial space. This paper mainly takes the theory of consumer behavior as the starting point and art design as the starting point. It aims to explore the application of new media installation art in commercial space based on the theory of consumer experience. Design application rules. (Du, 2019)

As far as the artistry of immersive new media installation art is concerned, after reviewing the literature, it was found that Du Chengwei deeply discussed consumer psychology and consumer experience in his research. He conducted research and summary on the current status of interactive installation art intervening in commercial space. According to his research, the design strategy of interactive installation art in commercial space can be clarified. Specifically, interactive installation art can provide a richer consumption experience, thereby enhancing consumers' aesthetic experience, entertainment experience, immersive experience and educational experience. (Du, 2019)

Researcher agrees with the conceptual and formal characteristics of new media installation art, as well as the regionality, functionality, aesthetics, and interaction emphasized in the principles of new media installation art in urban commercial space applications. But in the researcher's opinion, the key points of perception and cognition in consumer experience theory are equally important. Consumption experience is not only an emotional experience, but also the perception and cognition of the device. Strengthen publicity and education to the public, and improve their awareness and understanding of immersive new media art.

In urban commercial space, the application of immersive new media installation art involves two key aspects of perception and cognition. In terms of perception, new media installation art creates a unique sensory experience through visual, auditory, tactile, and other sensory stimulation. These installations can use high-definition screens, sound effects and interactive elements to attract customers' attention, create visual impact and emotional resonance. Through the interactive technology of touch and projection, installation art can create a unique atmosphere

and allow customers to feel a different emotional experience in the commercial environment.

In terms of cognition, the application of new media installation art in urban commercial spaces can convey the information and characteristics of brands, products, or services. By creating engaging and interactive experiences, installation art can help customers gain a deeper understanding of a product's functionality, features, and benefits. This cognitive process is not only rational, but also involves consumers' emotions and feelings. A new media device related to brand values will also trigger consumers' recognition and resonance of the brand, driving the development of commercial space.

Overall, the application of new media installation art in urban commercial spaces makes full use of the interaction of perception and cognition. By creating a compelling visual and emotional experience while conveying information about the brand and product, these new media installations enrich the commercial environment and increase customer engagement while providing consumers with more perception and opportunities for interaction at the cognitive level.

5.2.2 The Evolution and Challenges of New Media Installation Art in Urban Public Space

Thoughts on the development of new media installation art in Chinese urban public space. It conducts an in-depth study of the development of new media installation art in China's urban environment, emphasizing that it enriches public space culture through audience participation, and explores the integration relationship between artworks and the urban environment. Its perspective highlights the role of interactivity in promoting urban social cohesion, and emphasizes new media installation art as an important carrier of urban cultural innovation. At the same time, it points out the development dilemma of new media installation art in urban commercial space from the aspects of limited commercial space and difficulty in technical practice. (Chen, 2014)

The researcher agrees with both issues noted. But according to the researcher's thesis, the development dilemmas that arise do not end there. This part is the new research results obtained by the researcher through literature research, fieldwork research, data analysis, and practical aspects from the aspects of scene integration, the

balance trend of artistic value and commercial value, as well as social participation and cultural inheritance.

Research on immersive new media installation art mainly focuses on the integration of technology and art. These studies emphasize the application of advanced technologies such as virtual reality technology and 3D projection, and how to use these technologies to create immersive experiences for audiences with multiple senses such as vision and hearing. However, these studies tend to focus on the technology itself, ignoring the participation and emotional experience of the audience, and seldom consider the combination with the urban business environment.

The current application of immersive new media installation art in urban commercial spaces emphasizes participation and scene integration. Research shows that audiences increasingly want to be part of art rather than just passive viewers. Therefore, innovative applications focus on providing more interactivity for the audience.

1. Innovation in scene integration

Immersive new media installation art is moving towards integration with the environment, which is a significant difference from previous research. The current trend is to integrate art into the layout, design and atmosphere of urban commercial environments so that it fits with the brand concept. This method is not just a simple art installation placement, but also an integration of artworks and commercial environment. Brand stores can combine their product elements with immersive installations to create unique scenes that are highly relevant to the brand image.

2. Balance between artistic and commercial values

The researcher pays more attention to how to balance artistry and commercial value in immersive installation art. While immersive installations bring innovation and attraction to commercial spaces, commercial goals remain paramount. Therefore, researcher and designers need to think about how to combine immersive experience with commercial goals, which can not only meet the audience's emotional needs, but also promote sales and brand communication.

The innovative application of immersive new media installation art in urban commercial space is not only to attract the attention of the audience, but also to enhance the overall artistry. These installations are no longer simply technological

displays, but are designed and produced as works of art. Creativity and artistry have become important elements in the design, so that the audience can not only get entertainment in the process of participating in the interaction, but also feel a kind of artistic emotion and thinking.

3. Social participation and cultural inheritance

The researcher takes social participation and cultural heritage into consideration. By incorporating local history, traditions and values into the artwork. Immersive new media installation art is not only a pure form of entertainment, but also can become part of the urban community and a medium to convey urban culture and history. Promote citizen interaction and participation, and attract citizens and tourists to have a deeper understanding of the city's history and culture.

Through a more detailed discussion of the innovative application of immersive new media installation art in urban commercial spaces, it can find that the current research trends are emphasizing the audience's participation experience, scene integration, commercial value balance, social participation, and cultural inheritance, etc. There is a difference. This change not only enriches the artistic experience of urban commercial spaces, but also promotes innovation in the field of immersive new media installation art to a certain extent.

5.2.3 Discussion on Juxiong Beibei Installation Art in Dalian Xiongdong Street

Xiao (interviewed, 2023) said that the current representative of Juxiong Beibei installation art in Dalian Xiongdong Street has technical issues. In order to allow the audience to deeply immerse themselves in the immersive experience, the research and development, maintenance, and updating of these advanced technologies and equipment require a large amount of capital investment. At the same time, due to the rapid updating speed of technology, it is easy to lead to the rapid obsolescence of equipment. Regarding this aspect, researcher thinks we can cooperate with technology companies, scientific and technological research institutions, etc. to seek technical support and resource sharing. The installation art team can establish cooperative relationships with technology companies to jointly promote the research and development and application of technology and reduce technology costs. In addition, the rapid update of technology also means that artists and art installation teams need

to maintain a keen sense of touch, pay attention to the development of new technologies in a timely manner, and make timely updates and upgrades. Encourage artists and technology research and development teams to innovate and explore new forms of immersive experiences. For example, combining artificial intelligence technology to achieve more intelligent and personalized art display and interaction.

Of course, there are also devices that require a large amount of energy to operate, which may lead to high energy consumption and carbon emissions, which contradicts the principle of sustainability. In response to this issue, researchers believe that energy-saving technologies can be used to reduce the energy consumption of works. This can include the use of efficient lighting, electronic equipment, and cooling systems. In addition, establishing a strict energy management plan to ensure that works can be effectively closed when not needed is also key to reducing energy waste. Immersive devices typically require electronic devices to present interactive elements or generate audio-visual effects. Artists can choose to use efficient electronic devices, such as energy-efficient computers and monitors. At the same time, they can also consider using intelligent control systems to ensure that the device enters low-power mode when not in use. This can be achieved through automated systems or timing control to reduce unnecessary energy waste.

Establishing a strict energy management plan is crucial for reducing energy consumption. It is possible to monitor the energy usage of the work to identify potential waste and improvement opportunities. The energy management system can provide real-time data to help artists understand the energy needs of their works at different time periods and take corresponding measures to reduce energy costs. This monitoring and feedback cycle can continuously optimize energy use.

Jiang (interviewed, 2023) said that currently, the public's acceptance of immersive new media installation art in Dalian's urban commercial space is not clear enough. The audience's recognition and acceptance of this new art form are limited, and the way art is displayed and promoted is also related to acceptance. I think one of the ways to solve this problem is to strengthen publicity and education to the public and improve their awareness and understanding of immersive new media art. Through media promotion, educational activities, etc., more people can understand and experience this art form. In addition, cooperating with commercial institutions and

brands to integrate immersive new media art into commercial spaces will increase opportunities for audience contact and help increase market acceptance. Bring immersive new media installation art into art exhibitions and cultural activities, allowing more people to feel and experience it personally, and improve their understanding and appreciation of art.

Artists may face limited creative freedom when designing installations, especially if influenced by sponsors or funders. How to work with partners while maintaining an independent creative voice is a complex question. This part is the new knowledge gained by the researcher during the interview phase, solving problems from the aspects of strategic partners, exploring diversified financing channels, and raising awareness and education,

To solve this problem, the researcher thinks addressing the issue of restricted creative freedom for artists is key, especially where sponsors or funders are involved. First, artists can establish clear collaboration agreements with their partners (sponsors or funders). This agreement should clearly state the artist's creative freedom and artistic control over the creative process. Artists can insist on keeping the creative process and decision-making rights to themselves, while ensuring that the partners' expectations and requirements are clearly spelled out in the contract. This reduces potential conflicts and misunderstandings while protecting the artist's creative independence.

When choosing sponsors or funders, artists can look for partners who align with their artistic vision and values. Such a partner is more likely to understand and respect the artist's creative freedom. Regular communication and mutual trust between partners are also key to ensure both parties can build a positive working relationship.

Second, to reduce dependence on a single partner, artists can explore diversified funding channels. This includes applying for arts grants, finding multiple sponsors or funders, and considering ways to raise funds through art sales, among other things. Diversifying funding sources can reduce dependence on one party and thus preserve creative freedom.

Artists can seek support from artists' associations and organizations, which are often dedicated to protecting artists' rights and creative freedom. These organizations can provide legal and contractual advice, as well as support in the event of a dispute.

Membership in these organizations can increase an artist's negotiating power in partnerships.

Finally, education and awareness-raising among artists and partners is also important. Artists can actively introduce their creative processes and values to help partners better understand their work. This helps build empathy and reduces potential conflict while increasing partners' respect for the artist's creative freedom.

In short, solving the problem of restricted creative freedom for artists requires establishing clear cooperation agreements, selecting suitable partners, diversifying funding channels, seeking organizational support, and conducting education and awareness-raising. These strategies help preserve the creative independence of artists and promote positive collaborative relationships.

5.3 Suggestions

5.3.1 Suggestions for Applying the Research Results

Due to time and cost constraints, researcher is unable to construct models in art and commercial spaces and can only present them on paper with authoritative comments.

The application of future research findings can be divided into several key aspects. First, local commercial spaces and related institutions in Dalian can use the research results as a reference to guide their own construction and installation art projects. This includes selecting appropriate locations, partners, and artists, as well as understanding how to integrate artistic elements to increase the appeal of a commercial space.

Secondly, research results can provide strong support for experimental investment. Although the actual model cannot be constructed during the research phase, detailed descriptions and illustrations can help other experimental teams better understand the concept and potential effects of the installation art. This facilitates more efficient experimentation and testing with limited resources.

Third, research results can also provide guidance for practical applications. When commercial spaces or cultural institutions consider incorporating installation art into their designs or events, the perspectives and insights from the research results can

be an important reference. This helps ensure that the artistic elements are consistent with the overall vision and goals of the commercial space.

It is also crucial to pay attention to the application status, sustainable development and social impact of research results. By monitoring the implementation and feedback of the installation art project, the design can be continuously improved and optimized to ensure its long-term sustainability in commercial spaces. At the same time, an in-depth understanding of the project's impact on local communities and cultural life will help evaluate its social value and impact.

Finally, it is an important goal to show the unique charm and artistic value of the research results in Dalian's new era urban commercial space area. By integrating research findings into the urban landscape and business environment, it can add color to the city, attract tourists and residents, and enhance Dalian's reputation as a cultural and artistic destination.

In summary, although the researcher was constrained by time and cost, they can make the most of their creativity and research results through clever presentation, support from authoritative reviews, and a focus on applications, sustainability, and social impact. Maximize the potential of the Juxiong Beibei installation art research project on Xiongdong Street in Dalian, and contribute to the development and cultural richness of the city.

5.3.2 Suggestions for the Further Study

In order to further deepen the understanding of immersive new media installation art in commercial spaces and promote the development of this field, future researchers can adopt the following suggestions:

1. Expand the scope of cross-cultural comparative research: Researchers can choose not only to compare with Dalian, but also with more cities with different geographical and cultural backgrounds. Such comparisons can help researchers gain a more comprehensive understanding of the impact of different cultures on immersive new media installation art. In addition, cross-cultural comparisons can enable researchers to identify the profound impact that various cultural factors, such as religion, history, social structure, etc., have on art forms and audience acceptance.

Future research directions should focus on deepening the exploration of cross-cultural comparative research, paying attention to the cultural inheritance and

practical application of installation art, and promoting cooperation and knowledge sharing. This will help promote the development of immersive new media installation art in commercial spaces and explore its potential in social, cultural and commercial fields. Research in this field can not only enrich our understanding of art and culture, but also help create commercial spaces with more creative and cultural value.

2. Cross-border cooperation and interdisciplinary research: Encourage more cross-border cooperation and interdisciplinary research, integrating art, science, technology and social sciences to create more innovative and in-depth research. This can prompt experts from different fields to discuss various aspects of installation art, thereby providing more new perspectives and solutions for the future development of this field.

3. Sustainability and ecological awareness: Considering the importance of sustainability issues, future research can focus on the ecological impact of immersive new media installation art. Researchers could examine how sustainability concepts can be incorporated into artistic creation and how installation art can educate audiences about the importance of the environment and sustainability.

4. Integration of digital technology and innovation: Future research can delve into how to integrate the latest digital technology and innovative methods into immersive new media installation art. This includes using technologies such as augmented reality (AR), virtual reality (VR), and artificial intelligence (AI) to create more engaging experiences. At the same time, researchers can focus on the sustainability and cultural impact of these technologies.

5. International cooperation and global perspective: Considering the importance of cultural exchanges and global issues, future research can pay more attention to international cooperation and global perspective. This includes collaborating with researchers from other countries to compare immersive new media installations in different countries and regions, as well as exploring global issues such as cultural diversity, globalization and digital culture.

In summary, future research can further deepen the exploration of digital technology integration, sustainability, cross-border cooperation and international cooperation based on cross-cultural comparative research. This will help promote the development of the field of immersive new media installation art and bring more

innovation and inspiration to cultural, artistic and commercial spaces. This will also help educate future researchers and creative practitioners, driving continued progress and development in this field.

This research direction is of great value to researchers in multiple fields:

Art and culture researchers, researchers can deeply explore the performance and significance of immersive new media installation art in different cultural backgrounds, and help analyze the interactive relationship between art and culture.

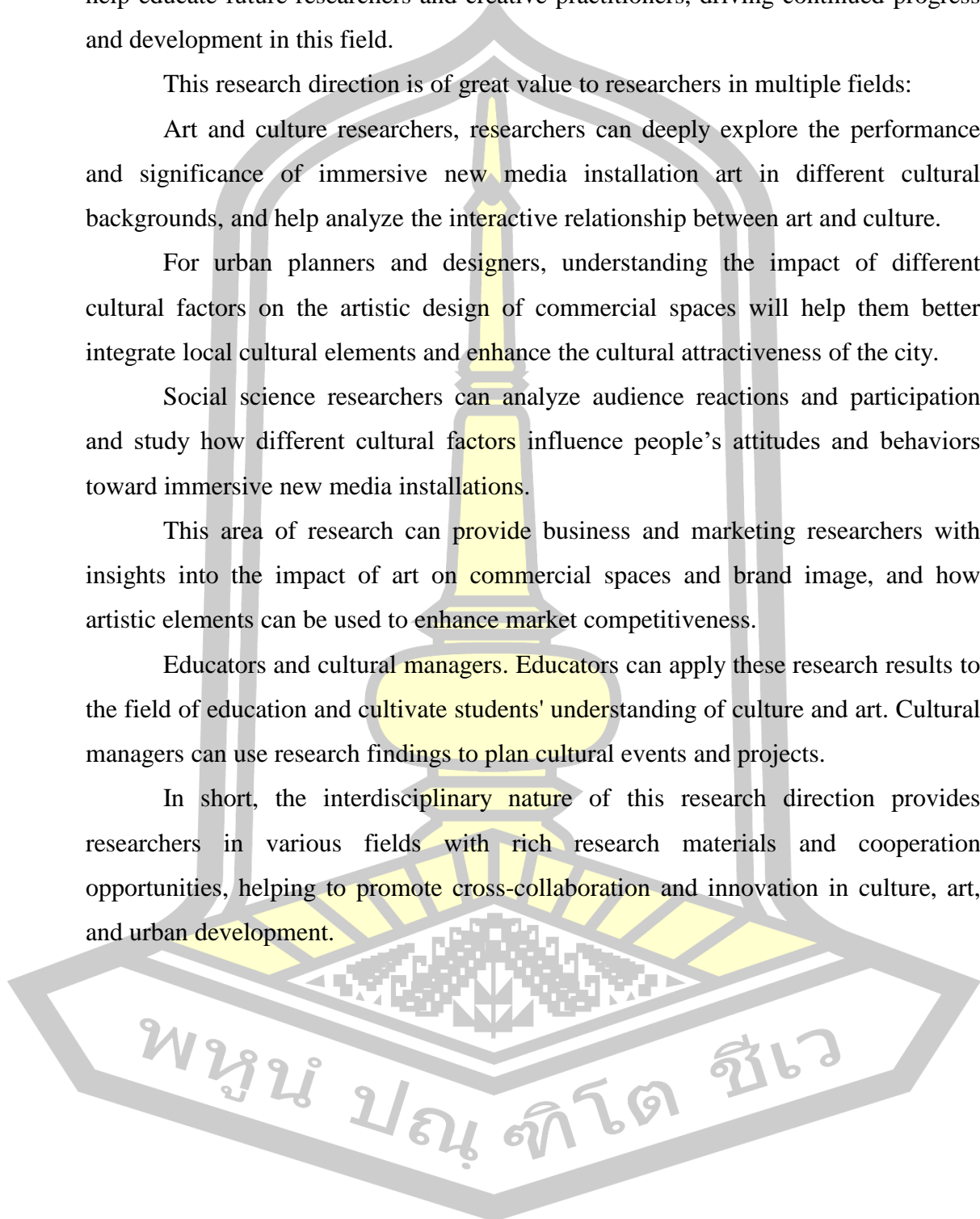
For urban planners and designers, understanding the impact of different cultural factors on the artistic design of commercial spaces will help them better integrate local cultural elements and enhance the cultural attractiveness of the city.

Social science researchers can analyze audience reactions and participation and study how different cultural factors influence people's attitudes and behaviors toward immersive new media installations.

This area of research can provide business and marketing researchers with insights into the impact of art on commercial spaces and brand image, and how artistic elements can be used to enhance market competitiveness.

Educators and cultural managers. Educators can apply these research results to the field of education and cultivate students' understanding of culture and art. Cultural managers can use research findings to plan cultural events and projects.

In short, the interdisciplinary nature of this research direction provides researchers in various fields with rich research materials and cooperation opportunities, helping to promote cross-collaboration and innovation in culture, art, and urban development.



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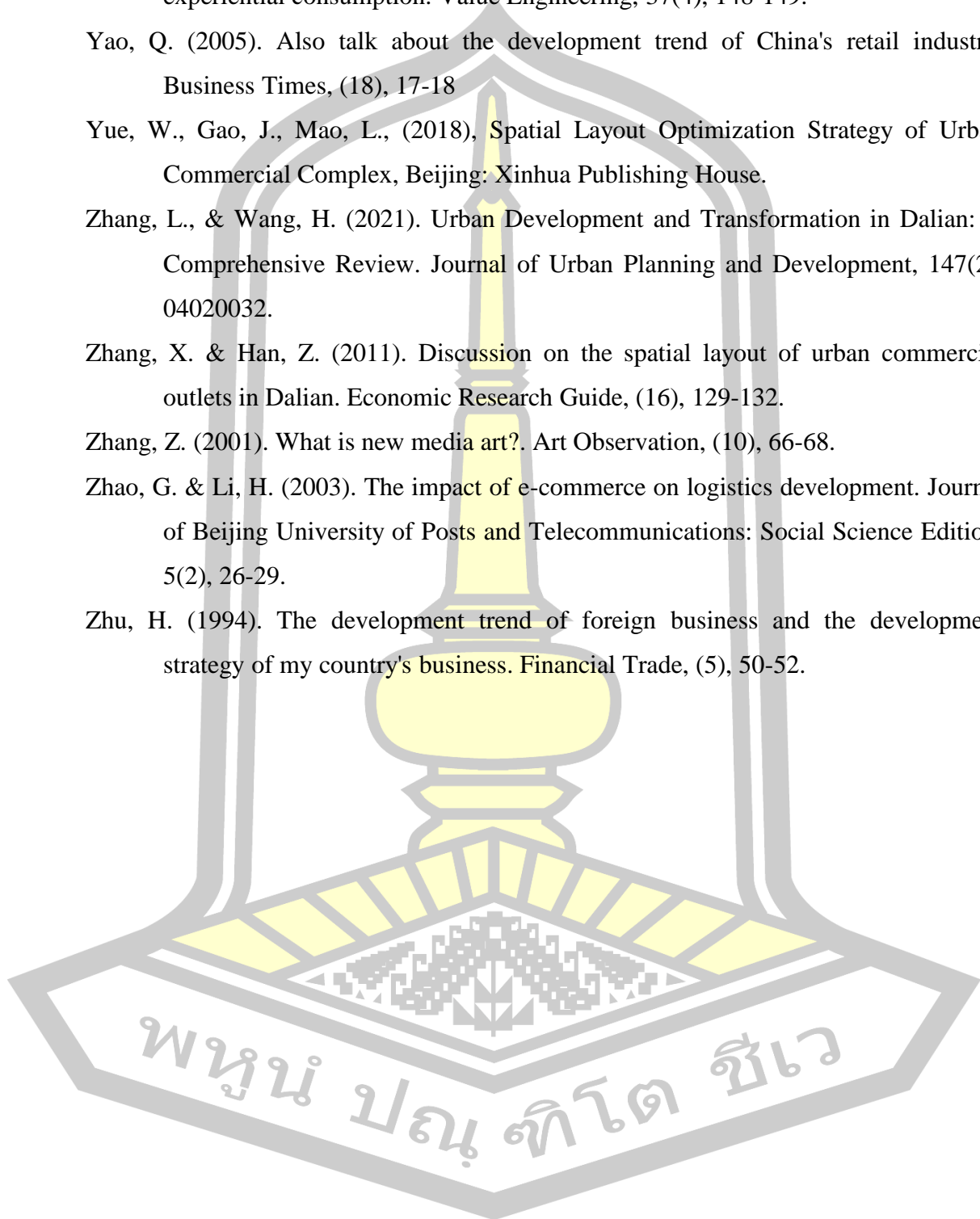
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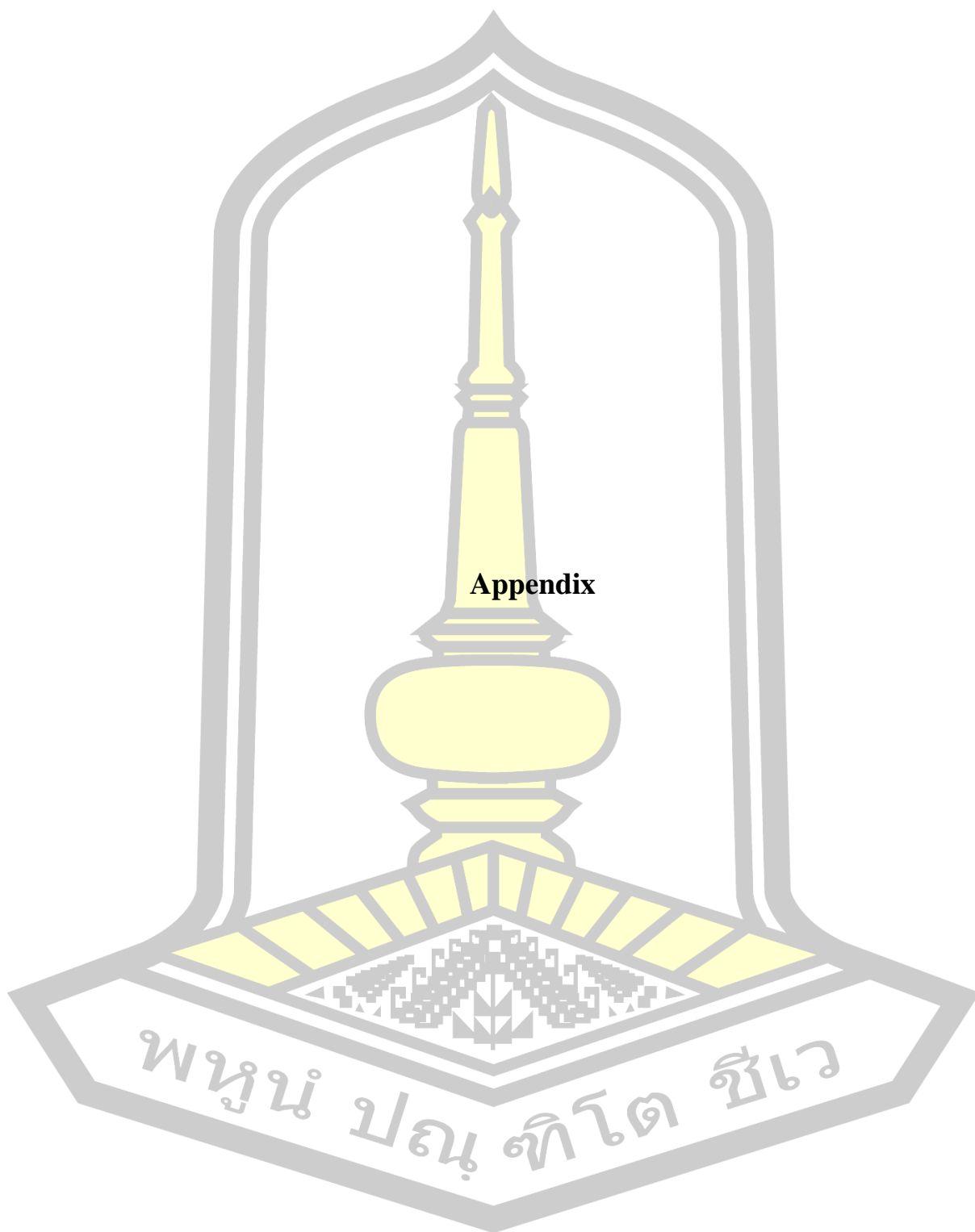
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Appendix

พหุบัณฑิตยาลัย จุฬาลงกรณ์มหาวิทยาลัย

Appendix 1

Urban Commercial Space Management Staff Survey

Site: Xiongdong Street, Dalian City, Liaoning Province, China

City/Town:_____ Date:

Name:_____ Age:_____ Gender:_____ Educational level:

As a manager of Xiongdong Street in Dalian City, would you talk about the process of development in installation art and urban commercial space?

1. What solutions and measures have been taken to solve urban anxiety and activate BoTop Culture among young consumer groups?
2. What is your opinion on the current status of immersive new media installation art in urban commercial space in Dalian City?
3. Do you think installation art is important for the development of commercial activities in Dalian Xiongdong Street?
4. Does the government have any policies toward developing installation art in urban commercial space in Dalian City? If so, please describe them.
5. Is the new media installation art in Dalian's urban commercial space influenced by other cities or countries? If so, which places?
6. What is the current area of Xiongdong Street, what is the flow of people, and what kind of commercial activities can reach the peak of consumer groups. Is this closely related to the Juxiong Beibei installation art?
7. Is this art form associated with a specific commercial or cultural center?
8. What advantages do you think Xiongdong Street has in developing commercial survives compared with other urban commercial space?
9. Do you have a general direction for the future development plan of Xiongdong Street and its installation art?
10. According to the real situation what are major challenges or potential weaknesses in the development and marketing of installation art in Xiongdong Street?

Appendix 2

Installation Art Designers Interview

Site: Xiongdong Street, Dalian City, Liaoning Province, China

City/Town: ____ **Date:** ____

Name: ____ **Age:** ____ **Gender:** ____ **Educational level:** ____

1. What is your personal experience and what is your original intention in choosing to create installation art? What is its creative thinking, especially JuXiong Beibei installation art on Xiongdong Street in Dalian.

2. What is the design goal of immersive new media installation art in urban commercial space? How to enhance the attractiveness and user experience of commercial spaces through this art form?

3. What is the difficulty in creating such an interdisciplinary fusion media creation?

4. How will this permanent installation stay fresh in the long run?

5. China's giant horse has appeared in the Spring Festival Gala, Juxiong Beibei installation art is in Dalian, etc. So what kind of cultural connotation do you want to convey by displaying this device?

6. So for you, is Bear Cave Street a success, or is it still in the process of experimentation? What do you think is the best integration between Juxiong Beibei installation art and Xiong Dong Street?

7. What are your views on the advantages and disadvantages of Dalian's new media installation art being embedded in urban commercial spaces?

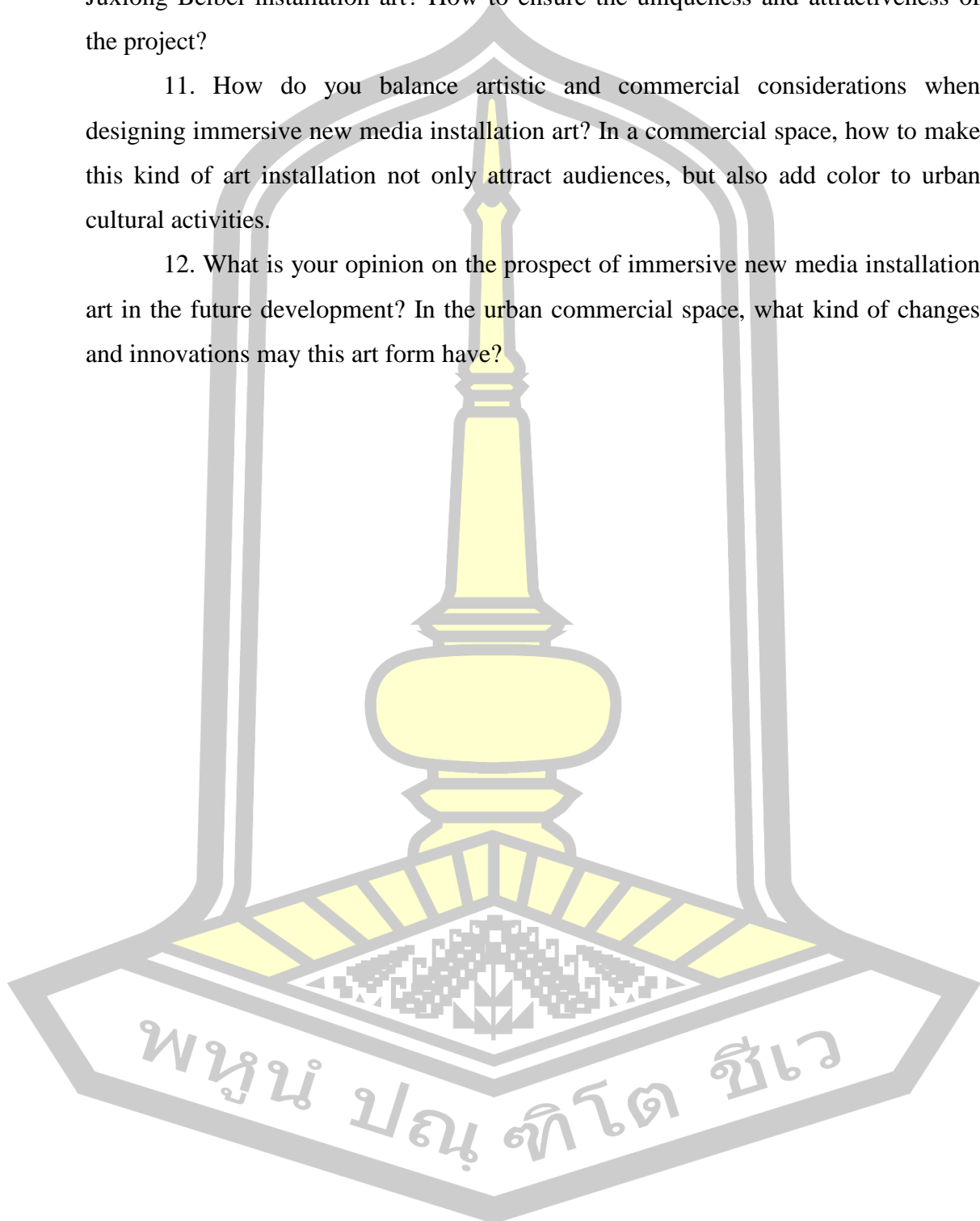
8. How do you think cultural tourism projects and mechanical installation art promote the development of society and culture? What impact do they have on cities and audiences?

9. When designing immersive new media installation art, have you considered the adaptability of space? Are there some general design principles that apply to different types of commercial spaces?

10. What key elements do you pay attention to when designing and developing Juxiong Beibei installation art? How to ensure the uniqueness and attractiveness of the project?

11. How do you balance artistic and commercial considerations when designing immersive new media installation art? In a commercial space, how to make this kind of art installation not only attract audiences, but also add color to urban cultural activities.

12. What is your opinion on the prospect of immersive new media installation art in the future development? In the urban commercial space, what kind of changes and innovations may this art form have?



Appendix 3

Customers Interview

Site: Xiongdong Street, Dalian City, Liaoning Province, China

City/Town: ____ **Date:** ____

Name: ____ **Age:** ____ **Gender:** ____ **Educational level:** ____

1. Your position?
2. Is this your first visit to Xiongdong Street in Dalian City?
3. Are you interested in the installation art in Xiongdong Street?
4. Have you been to Large urban commercial spaces in other Chinese cities?
Compared with Dalian urban commercial space, which one attracts you more?
5. Have you conducted commercial consumption in Xiongdong Street in Dalian City? What kind of business activities would you choose for consumption?
6. Compared with other urban commercial spaces, do you think the new media installation art can satisfy you? If not satisfied, what is the dissatisfaction?
7. Are you satisfied with the prices of consumer activities in Xiongdong Street?
8. How did you find out about Xiongdong Street in Dalian?
9. Do you have any requirements for the design and function of installation art in Xiongdong Street in Dalian City?
10. Can you make some suggestions for the development of urban commercial space in Dalian City?

พหุ ประถมศึกษา

Appendix 4

List of interviewees

Key Informants

Xiao Di is the interviewer, 47, at the Xiongdong Street in Dalian City on 17 May 2023. (Chairman)

Jiang Lianzhang is the interviewer, 46, at the BoTop culture office t in Dalian City on 21 April 2023. (General Manager)

Liu Maoxin is the interviewer, 38, at the Xiongdong Street in Dalian City on 14 March 2023. (Manager)

Zhang Fu is the interviewer, 35, at the Xiongdong Street in Dalian City on 26 April 2023. (Engineer)

Casual Informants

Zhang Ming is the interviewer, 40, at the Hongmei Street in Dalian Development Zone on 14 March 2023. (Director)

Zhou Mo is the interviewer, 35, at No.180 Zhongshan Road, Xigang District in Dalian City on 20 June 2023. (Guide)

Dong Wenqiang is the interviewer, 38, at No.134 Weihua Street, Xigang District, Dalian City on 13 July 2023. (Photographer)

Yin Miaolu is the interviewer, 35, at Lu Xun Academy of Fine Arts in Dalian Jinpu New Area on 21 April 2023 (Teacher)

Wang Zijun is the interviewer, 35, at Rong Media Center in Changping District in Beijing on 2 July 2023. (Director)

Zhou Xinlan is the interviewer, 25, at Politecnico di Milano (online) on 2 July 2023. (Designer)

Wang Dapeng is the interviewer, 45, at No.23 Dagong Street, Zhongshan District in Dalian City on 18 April 2023. (Head)

Li Yang is the interviewer, 35, at Songzhuang Contemporary Art Archives in Beijing (online) on 24 May 2023. (Editor)

Liu Dan is the interviewer, 40, at at the Hongmei Street in *Dalian* economic development zone on 5 March 2023. (Manager)

Wang Zhiyong is the interviewer, 35, at new media art office in Dalian economic development zone on 8 March 2023. (Artist)

General Informants

Yu Zhiqi is the interviewer, 25, at the Xiongdong Street in Dalian City on 20 March 2023. (Student)

Han Xiaotong is the interviewer, 30, at the Xiongdong Street in Dalian City on 21 June 2023. (Designer)

Sun Rongzi is the interviewer, 24, at the Xiongdong Street in Dalian City on 21 June 2023. (Student)

Feng Haoyu is the interviewer, 25, at the Xiongdong Street in Dalian City on 21 April 2023. (Student)

Xiao Shuang is the interviewer, 55, at the Xiongdong Street in Dalian City on 28 April 2023. (Manager)

Ma MIngruo is the interviewer, 25, at the Xiongdong Street in Dalian City on 28 April 2023. (Associate Producer)

Christina Chan is the interviewer, 29, at the Xiongdong Street in Dalian City on 28 July 2023. (Purchaser)

Ma Wenjun is the interviewer, 27, at the Xiongdong Street in Dalian City on 28 April 2023. (Senior Operations Manager)

Wang Linan is the interviewer, 60, at the Xiongdong Street Cafe in Dalian City on 28 April 2023. (Director)

Zhao Yingying is the interviewer, 29, at the Xiongdong Street in Dalian City on 20 May 2023. (HR)

Lv Xiuping is the interviewer, 50, at the the Xiongdong Street in Dalian City on 2 July 2023. (Self-employed)

Zhang Songyun is the interviewer, 25, at the Xiongdong Street Cafe in Dalian City on 13 July 2023. (Director)

BIOGRAPHY

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DATE OF BIRTH	13/09/1990
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