

Strategies and Methods for Renewing and Transforming Tianjin Street Commercial District in Dalian

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Abstract

Tianjin Street is the most well-known traditional commercial street in Dalian. Since its establishment in 1909, it has witnessed the development of Dalian for more than a hundred years. In the 1980s, Tianjin Street became the busiest commercial street in Dalian. However, under the influence of factors such as the development of the Internet economy, adjustments to the transportation system and development of surrounding commercial districts, Tianjin Street's prosperity gradually declined. In order to revitalize Tianjin Street and promote the development of its commercial district and restore its prosperity, everyone from government officials to citizens and tourists hopes to see it renewed and transformed once again. Based on a survey of current conditions on Tianjin Street in Dalian City and using Python to analyze issues such as historical context, built environment and commercial layout on Tianjin Street in Dalian City, this study proposes corresponding renewal strategies and methods such as adjusting public spaces and changing business ratios with the aim of making it a vibrant commercial street once again. The results of this study will provide valuable references for urban commercial street development.

Keywords

Dalian Tianjin Street, Commercial Block, Renovation, Strategies and Methods

1. Introduction

Traditional commercial streets are precious heritage of urban culture and history and have an indispensable significance for urban development. As one of the

traditional commercial districts in Dalian, Tianjin Street has experienced nearly a hundred years of history and development and has witnessed the evolution of Dalian City (Xia & Wang, 2003, Chen, He, & Wang, 2014). Although the basic functions and forms of Tianjin Street's commercial district have not changed, its commerce and architecture have been constantly developing and evolving with the times. Especially in the first 20 years of China's reform and opening up in the 1980s, Tianjin Street's commerce developed rapidly, promoting the prosperity of surrounding commercial districts and making it one of the most important components of Dalian City's central business district. However, during this rapid commercial development, problems emerged in Tianjin Street's commercial district that were contradictory to its prosperous development in terms of building scale, usage function, street appearance, landscape environment and traffic flow. With the introduction of foreign investment since 1992, Tianjin Street and its surrounding commercial districts have undergone commercial renovation. However, multi-faceted commercial district renovation and development models did not bring greater development and prosperity to Tianjin Street's commercial district; instead it caused its commerce to gradually decline. Therefore, this study aims to explore in depth issues with current renovation status for Tianjin Street's Commercial District by proposing renovation strategies and methods for application to current commercial district renovations and transformations with hopes that it will provide valuable reference for research on commercial district renewal. As a form of urban renewal, the renewal of a business district aims to improve overall level while protecting and inheriting historical cultural value. This study can also provide important reference value for renewal and transformation for other business districts.

2. Overview of Tianjin Street

2.1. General Situation of Tianjin Street

Tianjin Street is located in Zhongshan District in Dalian, China. It is bordered by Zhongshan Square and Youhao Square to the south, Minzhu Square to the east, and the train station square to the west. The western end is about 1600 meters from Dalian Railway Station and the eastern end is only 700 meters from Dalian Port. The pedestrian street at the western end of Tianjin Street starts from Shengli Square and extends to Xiuzhu Street at its eastern end. It is about 1380 meters long with a main street width of 20 - 40 meters. The pedestrian street shopping district covers an area of about 60 hectares (as shown in **Figure 1**). Within Tianjin Street district there are some modern commercial and cultural buildings such as Tianjin Street Department Store, Dalian Cultural Relics Store, Workers' Theater, Progress Cinema and other old brands as well as new buildings constructed after the 1990s such as New World Department Store Building, Kaisa Plaza, Tianzhi Shopping Mall and Tianhe Plaza which are large commercial centers making it an important commercial district in Dalian.

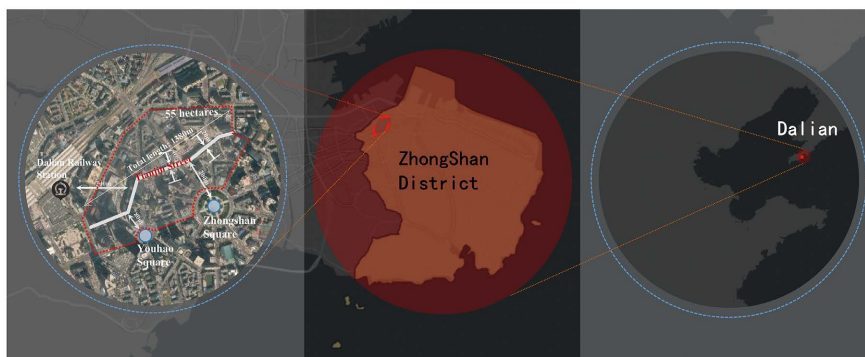










Figure 1. Analysis of the location of the Tianjin district in Dalian.

2.2. History of Tianjin Street

After the 19th century, the Qing Dynasty government closed its doors to foreign influence. In 1840, after the Opium War, Russia began to forcefully push forward its plan to occupy China's Heilongjiang River Basin. In 1895, China and Japan signed the Treaty of Shimonoseki after the Qing government was defeated in the Sino-Japanese War. The Qing government was forced to cede Liaodong Peninsula and Dalian was occupied by Japan. In 1898, Russia used military threats to force Japan to withdraw from Liaodong Peninsula. Russia then signed a treaty with the Qing government to lease Lushun Port and Dalian Bay area. From then on, Russia began its five-year rule over Liaodong Peninsula. In 1899, Tsar Nicholas II ordered the construction of Dalian Port and Dalian opened for business (as shown in **Table 1**). During this period, Russia established various official institutions and built European-style buildings. Tianjin Street was within Zhongshan Square's radiation circle at this time. It was called "Nauorosiskaya Street" and "Baruziskaya Street". In 1904, war broke out between Japan and Russia. Japanese troops captured Lushun Port and Dalian where they were stationed for 40 years. In 1909, the Japanese renamed Tianjin Street's district "Naniwa-cho". They established several Japanese-style buildings such as the Kyu-Kyu-Ya Store. In 1945, the Soviet Red Army entered Dalian and renamed Tianjin Street "Stalin Road". In 1955, China and the USSR signed a Friendship Treaty. This restored Tianjin Street's original name (**Jiang, 2013**). By the 1980s, with reform and opening up, Tianjin Street's commerce became increasingly prosperous. The surrounding district rapidly developed forming clothing street, snack street, electronics street, etc. Commerce within the district was thriving (as shown in **Table 1**). By the 21st century, increasingly vigorous commercial demand attracted investors seeing business opportunities. Small storefront commerce on Tianjin Street could no longer meet needs as a commercial center. Thus at the beginning of the century, Dalian City began comprehensive development, renovation and governance work for Tianjin Street and surrounding areas. The Kyushu Hotel, Jinzuo Building, Guomao Center Building etc underwent demolition and reconstruction (**Wang, 2003**).

Table 1. Tianjin Street historical planning.

Item	Russian occupation (1897-1905)	Japanese occupation (1926-1945)	Before the reform and opening up (1945-1978)	After the reform and opening up (1978-2023)
Map Name	Full map of Qingniwa City Street	Dalian City Street Map	Dalian City Street Map	Dalian business map
Overview				
Tianjin Street area				
Description	In 1899, Dalian was opened as a city, and in 1909, Naniwa-cho was established.	The Japanese colonial authorities planned the construction of Dalian, but Naniwa-cho remained unchanged.	Naniwa-cho was renamed Tianjin Street in 1949, and Dalian City made the “58 Plan” in 1958.	In 1990, the city of Dalian proposed the “90 Plan”, and Tianjin Street remained in its original state without major changes.










3. The Renovation and Enlightenment of Tianjin Street in Dalian at the End of the 20th Century

At the end of the 20th century, Tianjin Street’s commercial district underwent large-scale upgrading and renovation (as shown in **Table 2**), but ultimately failed to achieve its expected prosperity. This failed renovation process has brought enlightenment to a new round of renovations today.

3.1. The Content of Tianjin Street Transformation at the End of the 20th Century

At the end of the 20th century, the Dalian government initiated a renovation project for Tianjin Street. The project was completed and reopened in 2004. The renovation was carried out in three phases. The first phase covered an area of 30 hectares. The second phase covered an area of 15.4 hectares. The third phase covered an area of 15.6 hectares. The total planned area reached 70 hectares and the total building area reached 200,000 square meters. In 1989, construction began on the Jiuzhou Hotel at the entrance to Tianjin Street. In 1992, construction began on the Jinzuo Building on the other side. However, after thirty years it is still not completed. This has had a far-reaching adverse impact on the entrance image to Tianjin Street. In 1990, the historical building on Tianjin Street Department Store underwent renovations. This integrated the building with the district. Shengli Square at the western entrance to Tianjin Street was launched in

Table 2. Tianjin street renewal history.

Item	Phase I Renovation (1989–2005)	Phase II Renovation (2005–2010)	After Phase II Renovation (2010–2020)	Before 2022 renovation (2020–2022)	Current (2023)
Year	2000	2005	2011	2020	2023
Satellite Map Overview					
Tianjin Street Area					
Details	Construction: ① Shingli Square ② Jinzuo Building ③ Jiuzhou Hotel ⑧ New W ord Department Store et al.	Construction: ⑨ Guotai Building ⑬ Xiuzhu Building et al. Rotten: ② Jinzuo Building ⑪ Tianbai Renewal: ③ Jiuzhou Hotel	Construction: ⑥ Kaisa Plaza et al. Close: ⑫ Tianzhi Manufacture Renewal: ⑦ Gateway Center	Close: ⑧ New Word Department Store Renewal: ① Shingli Square ② Jinzuo Building ④ Honglin Building et al.	Renewal: ① Shingli Square ② Jinzuo Building ⑧ New Word Department Store ⑪ Tianbai ⑫ Tianzhi Manufacture et al.

1992 and completed in use by 1998. It is located between Qingniwaqiao and Tianjin Street, two business districts. It is also adjacent to the south square train station with huge initial flow and thriving commerce.

3.2. The Results of Tianjin Street Transformation at the End of the 20th Century

The renovation work that began at the end of the 20th century lasted for more than 10 years. However, it did not bring prosperity to Tianjin Street as expected. Instead, it declined even further. Today, buildings such as New World Department Store and Tianzhi Shopping Mall are idle. Most shops are closed or deserted. Many have moved away. Once bustling streets have become desolate and unfamiliar. Empty rooms and dusty windows fill the district. The past Tianjin Street no longer exists. It urgently needs revitalization to regain its past prosperity.

3.3. The Enlightenment of Tianjin Street Transformation in the 21st Century

There are many reasons for the failure of Tianjin Street's renovation at the end of the 20th century (Liu, Huang, & Wang, 2017). Firstly, there was a problem with unreasonable development timing during the renovation process. There

was no unified planning and the development process was chaotic. This caused a loss of vitality. Meanwhile, the Qingniwa business district and other business districts in Dalian developed prosperously. Tianjin Street gradually lost its core commercial position. Moreover, in recent years, the internet has changed the flow of capital and consumption patterns. The Internet has changed people's behavioral needs. The function of buildings is too single, large department stores lack experience. Tianjin street commercial district no longer meet new market demands. These are undoubtedly the main reasons for its decline. In the new round of renovations today, learning from the failed renovation is important. Rationally planning the renovation process and fully considering market demand is key to its revival.

4. The Current Situation of Tianjin Street in Dalian

This study first investigates the current situation of Tianjin Street from three perspectives: commercial district planning, layout surrounding transportation system and basic information of surrounding buildings in order to summarize and generalize existing problems of Tianjin Street.

4.1. Tianjin Street Commercial District Planning and Layout

Commercial space planning: Tianjin Street was originally planned as a chain store street. Buildings such as Kyukyuya Department Store (now Xintianbai Building) and Dalian Market (now Dalian Mall) were constructed. In the 1980s, Tianjin Street reached its peak. The commercial street was changed to a pedestrian street. Functional zoning within the district was refined and the commercial grade scale expanded. In the following decade, Tianjin Street entered a stable period. Old brands moved out to create a multi-level shopping environment. Malls and retail combined with new commercial complexes such as Mackayle were introduced. Comprehensive renovation of building facades, roads, infrastructure, lighting, and greening was carried out. In the early 21st century, original old buildings along the street and residential buildings were demolished. The commercial value of the original street space of Tianjin Street was lost and it entered a decline period. Several new shopping centers and commercial complexes were built, gradually forming today's commercial layout.

Transportation system: Tianjin Street is located near Dalian Railway Station. The main buildings in the district are about 4 - 12 minutes' walk from the station. The furthest building, Xiuzhu Building, is about 1400 meters from the station. The closest building, Shengli Square, is about 400 meters from the station. Near Tianjin Street are Dalian Metro Line 2 stations and three bus stops. These are at Dalian Railway Station, Tianjin Street Station, and Minsheng Street Station (as shown in **Figure 2**). There are 2617 parking spaces within the district. Most node buildings have corresponding parking lots around them. These mostly use underground parking or a combination of above-ground and underground parking. Some use aerial parking lot form. At the same time, the main

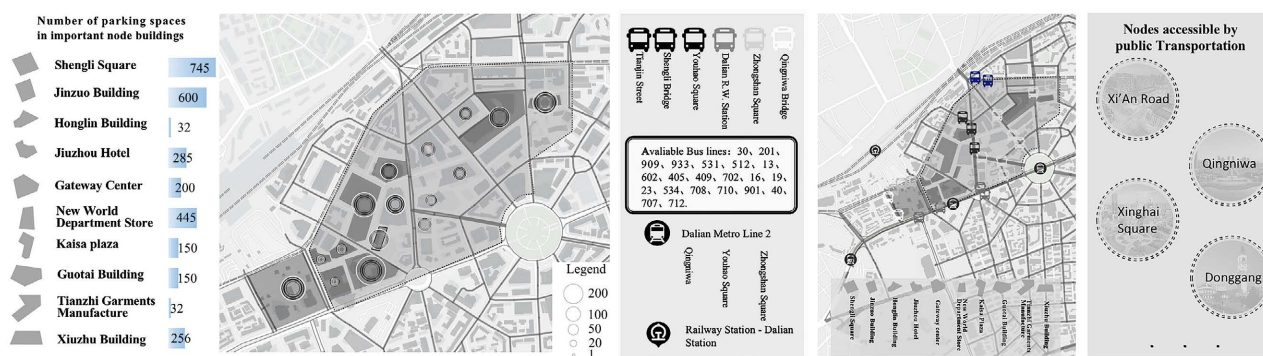


Figure 2. Current traffic condition of Tianjin Street.

route of the pedestrian street on Tianjin Street is blocked by multiple motor vehicle lanes. There are 19 sidewalks on the sides of main roads. However, pedestrian walkways are not continuous.

4.2. Tianjin Street Built Environment

Jan Gehl pointed out that the built environment of buildings is related to six aspects. These are street/building scale, street-facing transition space, street-level features, building facade composition features, building materials and colors, and merchandise display content (Zhang, Xu, & Guo, 2019). This work surveyed the current situation of the built environment along Tianjin Street in these six levels. The survey results show that the scale of Tianjin Street commercial blocks is large. The entrance buildings are high. The spatial facade within the block is relatively monotonous. It lacks interest and richness in the block. The critical transition space in the New World Department Store area is good. However, the critical transition space in other areas is poor. In terms of commodity main formats, New World Department Store area and Xiuzhu Building area are better than others. Kaisa Plaza and Xiuzhu Building have better building facade composition features. **Table 2** shows a statistical table of the current situation around key nodes.

4.3. Basic Information about Tianjin Street and Surrounding Buildings

Most of the buildings in Tianjin Street commercial blocks were built between the 1990s and early 21 century (as shown in **Figure 3(e)**), such as: New World Department Store was built in 2000, Guotai Building was built in 2007 etc. Buildings are mainly 6 - 10 stories high with landmark high-rise buildings such as International Trade Center Building (as shown in **Figure 3(a)** and **Figure 3(b)**). The structure is mainly reinforced concrete with floor area information shown in **Figure 3(c)** and **Figure 3(d)**. The functions of buildings are mainly commercial and hotel with some residential apartments. Except for Jinzuo Building and New World Department Store, other buildings have their own parking lots (as shown in **Figure 2**). The operating status of buildings is shown in **Figure 3(f)**.

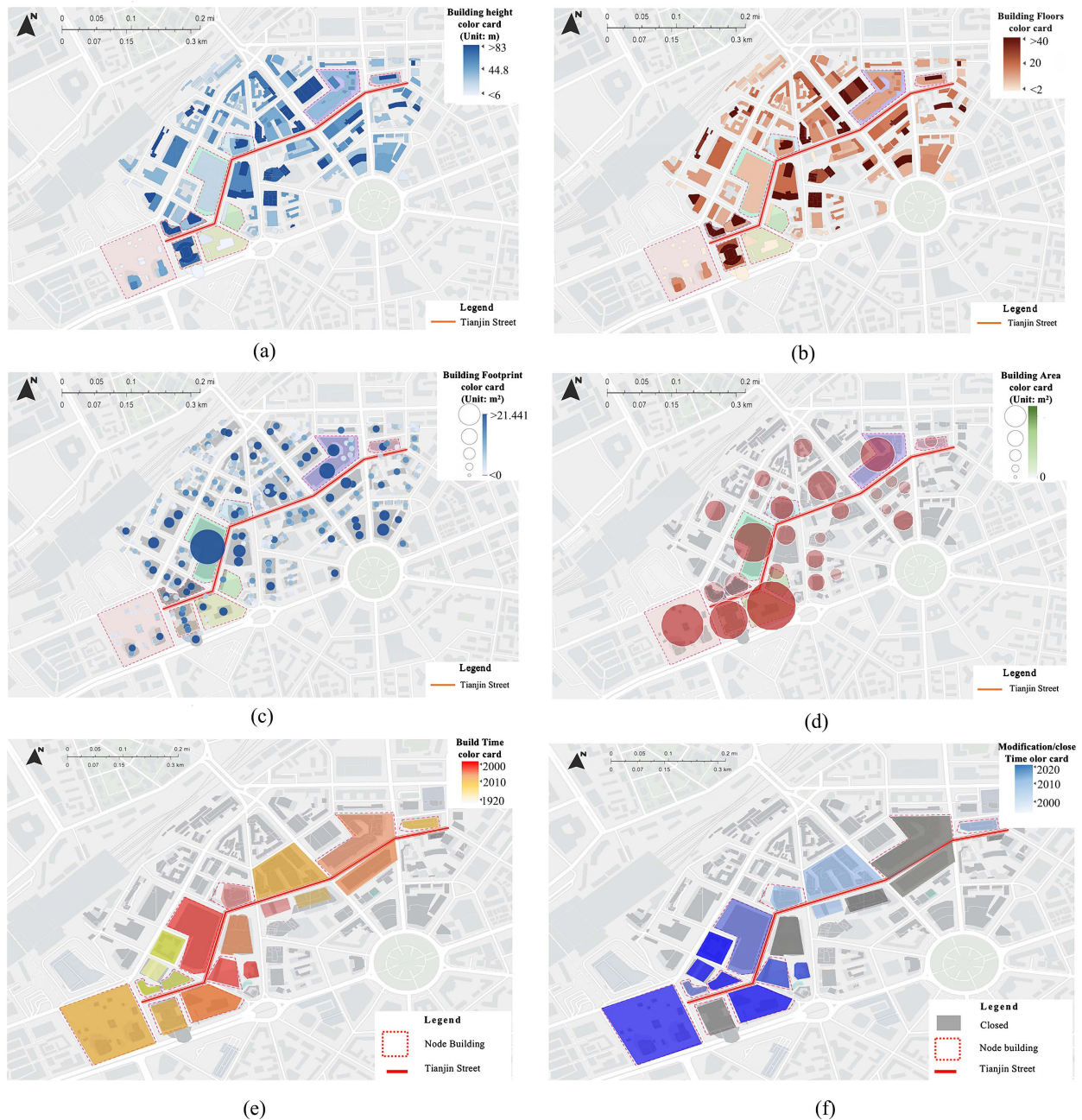


Figure 3. Current status map around key nodes. (a) Height of Building, (b) Floors of Building, (c) Footprint of building, (d) Area of Building, (e) Complete date of Building, (f) Modification/close time.

5. Existing Problems of Tianjin Street

5.1. Decline of Geographical Location Advantage of Tianjin Street

Based on the survey results in 4.1, this study used Python to analyze the correlation between vacancy rate and distance from the train station in Tianjin Street, Dalian. The results show that the further away from the train station, the higher the vacancy rate of buildings in that area. This indicates that passenger flow at the train station has an important impact on the attractiveness of Tianjin Street

in Dalian (as shown in **Figure 4(a)**). However, with the opening of Dalian North Railway Station and the construction of new transportation facilities such as subways, passenger flow at the train station has been greatly affected, resulting in a corresponding decrease in passenger flow on Tianjin Street. The geographical advantage of Tianjin Street in Dalian has weakened and it lacks attractiveness and competitiveness.

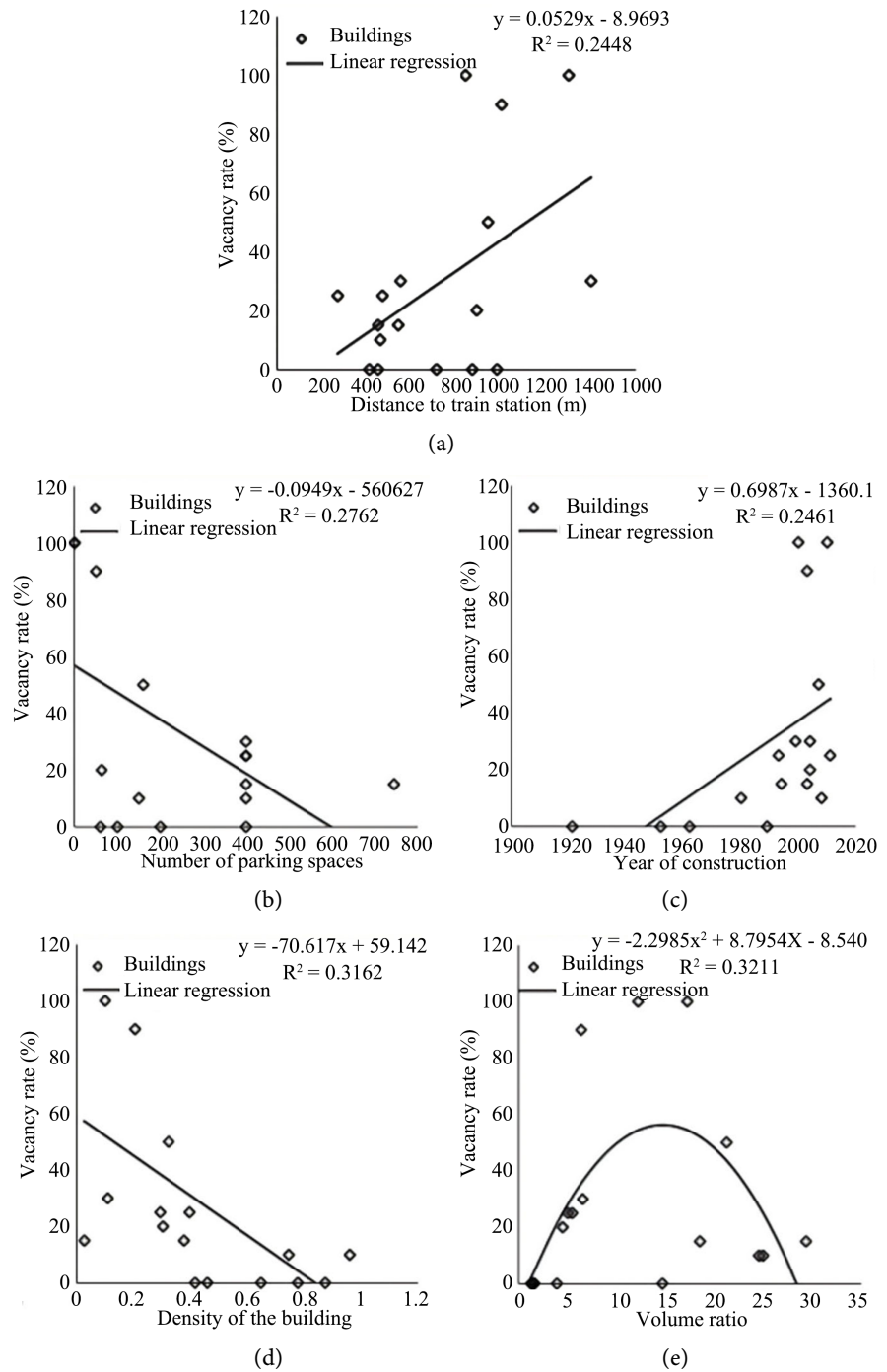


Figure 4. Correlation analysis between various factors and vacancy rate.

5.2. Many Traffic Obstacles in Tianjin Street

According to the survey results 4.1, in some areas, the width of pedestrian walkways is not set reasonably and there is a lack of isolation facilities. The entrances to the underground at Zhongshan Road junction and Shanghai Road passage are very narrow. The roads on the west side of Shengli Square, in front of the main entrance of Tianjin Street, Puzhao Street and Youhao Road are cut off and pedestrian walkways are not continuous. These problems hinder smooth traffic on Tianjin Street. In addition, based on Python correlation analysis between vacancy rate and number of parking spaces on Tianjin Street, a negative correlation was found between them. There is an overall shortage of parking spaces on Tianjin Street. The fewer parking spaces there are, the larger the gap in parking space supply and the more difficult it is to park. This affects dynamic traffic and causes traffic obstruction which affects pedestrian flow in the block resulting in an increase in building vacancy rate (as shown in Figure 4(b)).

5.3. Poor Street Built Environment of Tianjin Street

Based on Python using Analytic Hierarchy Process (AHP) to evaluate the built environment of Tianjin Street through six levels of indicators introduced in 4.2 and calculate built environment scores. As shown in Figure 5, with a score line of 10 points only International Trade Center, Shengli Square, Jinzuo Building, Kaisa Plaza have relatively good built environments while other interfaces have poor quality unable to coordinate overall block style or improve image. There are major problems with street built environment as a whole lacking participation experience interaction lacking diversified interfaces suitable for commercial

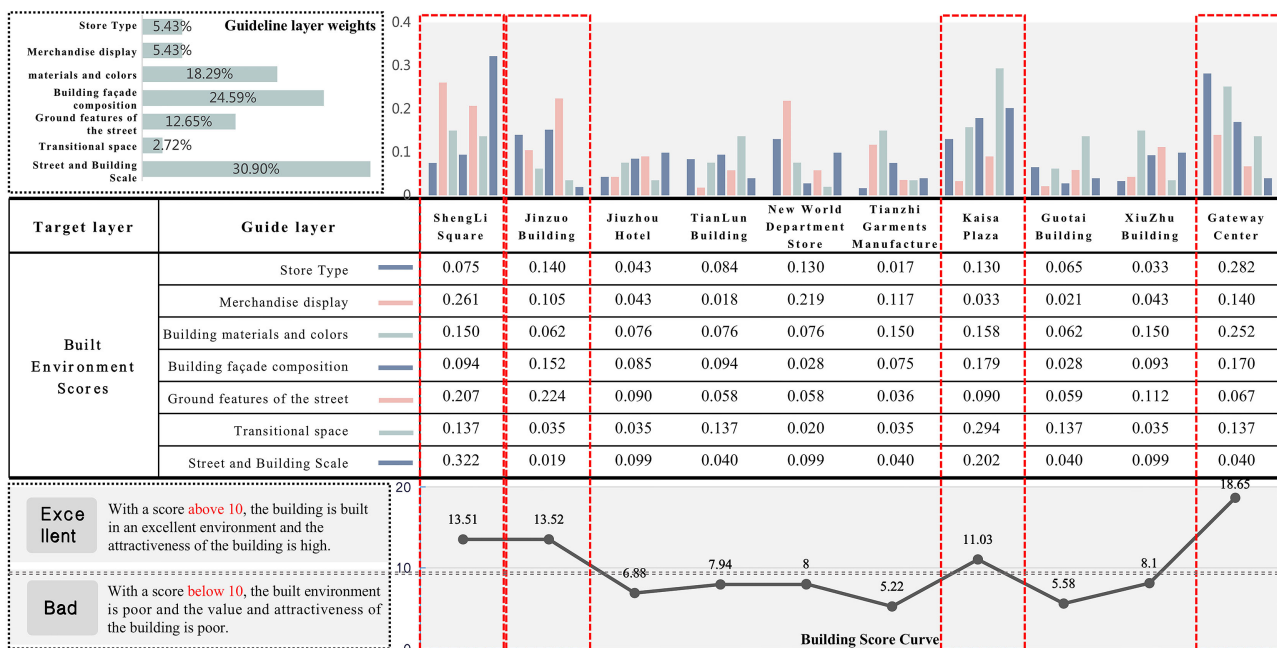


Figure 5. Micro built environment evaluation results.

development with surrounding environment being too old-fashioned. Tianjin Street scale is large with high entrance buildings.

5.4. Unreasonable Commercial Layout of Tianjin Street

Based on Python correlation analysis between vacancy rate building density and floor area ratio on Tianjin Street. The analysis results show that building density on Tianjin Street has a positive correlation with vacancy rate while an increase in floor area ratio will cause vacancy rate to first rise then fall (as shown in **Figure 4(d)** and **Figure 4(e)**). After reconstruction the overall building density and floor area ratio of Tianjin Street are too high causing traffic congestion within the block with environment not open enough lacking good public space and green space causing inconvenience to citizens' lives and seriously affecting block commerce. After reconstruction the street was divided into several sections with commercial layout within sections being unreasonable unable to continue original commercial form; inter-segment connection was separated by high-rise buildings newly built by New Century seriously affecting overall block commerce hindering improvement of block attractiveness. In addition Tianjin Street failed to form good interaction with large commercial complexes making it difficult to attract customers.

5.5. Weak Historical Continuity of Tianjin Street

Based on Python correlation analysis between vacancy rate and building construction year on Tianjin Street in Dalian a significant positive correlation was found between them (as shown in **Figure 4(c)**). The longer the building construction time the stronger the historical inheritance and the lower the vacancy rate. Although with transformation process form of Tianjin Street basically retained street spatial form also basically unchanged remaining historical buildings are relatively scattered such as Tianjin Street Department Store Workers Theater and historical buildings near Shengli Bridge. At same time some important landmark buildings have been lost such as former site of Dalian Public Security Bureau Wanbang Building, etc. In addition local historical cultural elements and local folk cultural elements are scarce on Tianjin Street in Dalian failing to integrate commerce tourism with local characteristic humanistic living atmosphere. Unique humanistic and historical background of block cannot be protected or continued which is regrettable. Overall connection between Tianjin Street and original historical buildings is weak lacking traditional commercial street's historical style as a whole.

5.6. Aging of Building Functions in Tianjin Street

In the Internet age Tianjin Street in Dalian lacks unified commercial planning with building functions aging. The area is mainly dominated by commercial and residential building functions while catering and entertainment functions are relatively scarce. Building types are mainly shopping centers and commercial fa-

cilities. According to statistics overall vacancy rate in the area is 30.5% with highest vacancy rate among shopping centers and other commercial facilities, more details are shown in **Table 3**.

5.7. Weak Development Adaptability of Tianjin Street in Response to the Epidemic Era

With outbreak of new crown epidemic nationwide in 2020 commercial model gradually changed to combination of online and offline forms (Su, Cheng, Wang, & Wang, 2022). However Tianjin Street in Dalian faced unfavorable situation in operation while lacking emerging electronic age content such as smart guidance 5G base stations e-commerce bases internet celebrity formats live broadcast economy etc required for smart blocks ability to adapt to new consumption patterns relatively weak further affecting its business competitiveness.

Table 3. Information of important node buildings.

Index	Building	Construct Time	Open Time	Main Businesses of Building
1	Shengli Square	1993	1998	Shopping Center. The stores are mainly apparel, retail and beauty.
2	Jinzu Building	1994	2006	Unused commercial building. Only stores along the street are open. The stores are mainly clothing and restaurants.
3	Honglin Building	1980	2006	Commercial building. 20 stores on floors 1 - 6, with stores mainly for food and beverage.
4	Jiuzhou Hotel	1989	1989	The main body is Jiuzhou Hotel. Stores along the street are open, mainly restaurants and supermarkets.
5	Gateway Center	1999	2002	High-rise commercial building. 19 stores on the ground floor and commercial on the upper floors.
6	New World Department Store	2000	2002	Unused commercial building. All stores are closed.
7	Kaisa plaza	2011	2012	Shopping center. The stores are mainly apparel, training, entertainment and automobile
9	Guotai Building	2007	2007	Commercial building. A total of 29 stores are open for business.
10	Tianzhi Manufacture	2003	2004	Unused commercial building. No stores in operation.
11	Xiuzhu Building	2004	2006	High-rise commercial residential. 12 stores on the ground floor.

6. Dalian Tianjin Street Renewal and Transformation Strategy and Method

6.1. Dalian Tianjin Street Renewal and Transformation Strategy

6.1.1. Macro Planning Strategy

The goal of the transformation is to implement Dalian's urban development orientation and overall planning, and create a national-level demonstration pedestrian street. The planning scope covers Minsheng Street to Jianhua Street, Xinggai Street to Tongshun Street, and Changjiang Road to Youhao Road, with a total planning area of about 550,000 square meters. The main transformation pedestrian streets are Qingniwa Street, Shengli Cultural Square, and Tianjin Street, with a total length of about 1380 meters and a main street width of 20 to 30 meters.

6.1.2. Block Format Planning Strategy

In addition to enriching the block layout of traditional shopping, catering, and other formats, diversified commercial formats should be introduced to enrich the block format structure of pedestrian streets. By renewing commercial formats and enhancing the continuity of traffic layout, experiential and interactive emerging formats can be better developed while enhancing leisure and entertainment functions.

6.1.3. Block Commercial Interface Planning Strategy

Overall Style Conception: The goal of transforming the Dalian Tianjin Street block is to preserve its historical and cultural district while showcasing urban characteristics, continuing the historical context, and implementing the sponge city construction concept. The aim is to create a "business +" model for the block, making the environment more pleasant, business more developed, attracting more traffic flow, and providing effective support for achieving the online and offline integration of multiple formats and the diversified, three-dimensional development of new business models.

Block Environment Style Conception: In terms of traffic network, building facade and ground, facilities and equipment, greening, lighting, and other elements, efforts will be made to strengthen block environment transformation and rectification (Zhang, Xu, & Guo, 2022). The peripheral road network and traffic facilities will be optimized, the road slow system improved, the old block building style and cultural context continued, and the building facade and ground environmental health standards improved. Green space, leisure space, and equipment facilities will be increased to create a beautiful, comfortable, distinctive, convenient, and safe block environment and walking space (Wu, 2006).

6.1.4. Smart Block Planning Strategy

The Dalian Tianjin Street transformation project aims to enhance the city's competitiveness by focusing on promoting digital transformation and building a smart block. This is achieved through accelerating the adoption and application

of 5G technology, expanding wireless network coverage, establishing a public information service platform, utilizing big data technology to strengthen consumer interaction and operation monitoring, and other measures to improve the level of smart services and promote the integration of online and offline business models. Future efforts should focus on improving digital infrastructure and the digital economy ecosystem, enhancing information security protection capabilities, advancing digital city construction, and providing strong support for sustainable urban development.

6.2. Dalian Tianjin Street Renewal and Transformation Method

6.2.1. Adjust Location Characteristics to Attract People Flow Promote

Promote Dalian Railway Station and reposition function and transformation goals of Tianjin Street. In conjunction with influence of government departments renovate and refurbish railway station adding landscape elements such as water features greenery sculptures etc to improve its aesthetics and comfort enhancing its characteristics and attractiveness. Use landscape design to optimize traffic organization and spatial layout improving functionality and efficiency of Dalian Railway Station. Through above methods fully utilize geographical advantages of Dalian Railway Station attracting more people to visit Tianjin Street commercial block promoting its commercial development.

6.2.2. Reorganize Traffic Layout to Reduce Traffic Obstacles

Renovate main entrance of Tianjin Street improving traffic routes increasing entrance recognition attracting people flow plan. Make corresponding changes for other traffic routes as well. Conduct research and estimation on people flow while ensuring normal passage of people flow transform places with high people flow attraction into parking and some commercial function buildings. Through these transformations achieve pedestrian crossing and parking convenience changing original commerce on Shanghai Road into parking lot adding intelligent parking system.

6.2.3. Enhance Built Environment and Update Surrounding Environment

Tianjin Street area is divided into 5 areas for renewal and transformation, as shown in **Figure 6**. The entrance area will have a LOGO identification sculpture added. This will create unique commercial block identification. Surplus road space on one side of the main entrance will be moved to the original long distance bus station location. This will improve the walking environment from the subway exit to the main entrance. The renovation of the entrance area requires a budget of approximately 16.6 million RMB. The Kaisa area will have new buildings around Kaisa Plaza renovated. This will integrate new and old buildings. The renovation of the Kaisa area requires a budget of approximately 30 million RMB. The Tianzhi area will have greenery added outside shops. This will add landscape space to the block. Smart furniture will be added, creating an ecosystem. The renovation of the Tianzhi area requires a budget of approximately 75

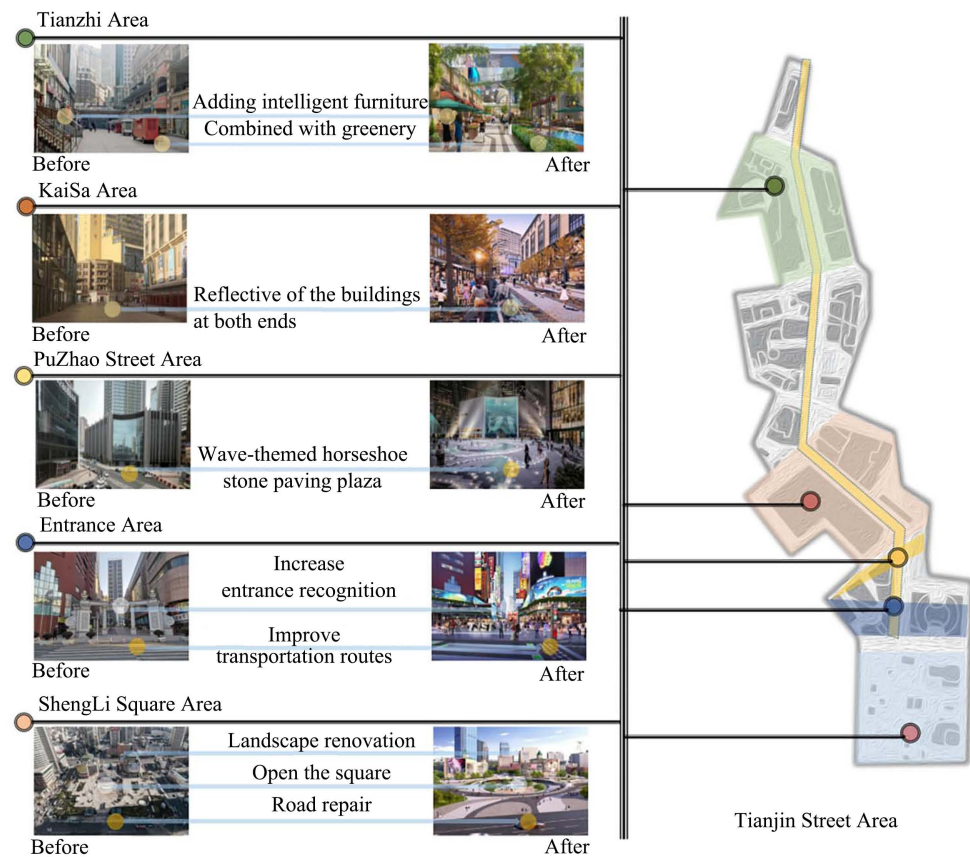


Figure 6. Comparison of before/after transformation of important nodes street centers.

million RMB. The Shengli Square area will have civil engineering and structure reinforced. A sunken square will be opened and the underground part reinforced. This will present an open and embracing space form towards the railway station direction. An LED screen facing the railway station area will be added, enriching night activities. The renovation of the Shengli Square area requires a budget of approximately 100 million RMB. The Along street area will have facilities such as smart lamp posts, seats, trash cans, etc., added. This will improve activity comfort. Landscape elements such as flower boxes and sketches will be added, creating a pleasant commercial street atmosphere. A cobblestone square leading to Changjiang Road Street will be built, enriching public space in the block and urban public space. Public rest space will be added, improving the vitality and attractiveness of the commercial block. The total budget for the built environment renewal approach is about 400 million RMB.

6.2.4. Change Business Format Ratio Improve Commercial Layout

Change commercial layout and business format ratio of Tianjin Street carry out overall planning and design around people's needs including life support system of all formats including commerce making dynamic and static compatible forming pleasant scale livable block making Dalian commercial block form richer trying to form interaction between block and commercial complex.

6.2.5. Update Functional Facilities Enhance Commercial Atmosphere

To enhance commercial atmosphere first need to consider commercial function needs change people flow routes and space reservation scale and use of facilities and equipment (Zhu, Mu, & Liang, 2022). In addition need to unify building body and people's needs through changing length width height and number of floors of buildings along street creating staggered landscape forming complete sequence including from street to alley from public space to semi-private and private space. In addition increase public facilities in block such as benches rest areas and children's play facilities etc further improving commercial atmosphere and attractiveness of block.

6.2.6. Protect Old Buildings Inherit Historical Context

On basis of protecting characteristics of old buildings renovate and internally transform convert original functions making Tianjin Street have certain historical inheritance. With Dalian Tianjin Street as core radiate to surrounding buildings and roads retaining historical planning features expanding its influence range. While protecting historical resources carry out urban renewal increasing interaction between people and Tianjin Street block from time space etc perspectives retaining people's dependence on place from perspective of people themselves inheriting historical context.

6.2.7. Use Smart Furniture Add Era Characteristics

Under premise of protecting urban culture and historical style can use smart furniture such as smart lamp posts smart seats etc for intelligent design achieving intelligence integration of infrastructure. In addition combining fashion design concept low-carbon environmental protection concept further enhancing era characteristics of block. For current situation where Tianjin Street Pedestrian Street is separated by motor vehicles can renovate road surface of Dashang pedestrian street Tianjin Street block such as using cobblestone paving improving walking experience sense continuity of block landscape.

7. Conclusion

This study takes a multifaceted approach to comprehensively uncover the issues facing the Tianjin Street Commercial Block in Dalian City, and puts forth strategies and methods for transforming the area by modifying the built environment and commercial aspects. The study provides valuable insight into improving the block by identifying existing problems, offering solutions to create diverse spaces and optimize business formats, and promoting urban commercial development. Furthermore, this study aims to enhance the daily public activity experience of residents and create a positive image for commercial blocks.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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