

Research on Urban Business District Renewal Model under the Guidance of Industrial Ecosystem Cultivation: Paradigm Shift from “Spatial Investment Promotion” to “Ecological Creation”

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Abstract: Based on the current development status of business districts in Liaocheng City, this paper analyzes the phenomena of space overcapacity, homogeneous business formats, insufficient coordination, data lag, and short assessment period. It proposes that the optimization path is guided by an industrial ecosystem that includes spatial structure reconstruction, cultivation of diversified business formats, collaborative operation, digital empowerment, and construction of an ecological evaluation system. With scientific data support and a long-term incentive mechanism, it is conducive to the efficient operation and sustainable development of business districts, providing institutional guarantees and practical references for the transformation and upgrading of urban commerce, and promoting the commercial ecosystem of Liaocheng City to move towards high quality and sustainability.

Keywords: Urban business district; Industrial ecosystem; Business district renewal; Diversified business formats; Digital empowerment

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1. Introduction

As China's economy enters the stage of high-quality development, urban business districts, as carriers of regional consumption and industrial agglomeration, have also undergone profound changes in their development model ^[1]. The traditional methods of spatial expansion and investment promotion can no longer meet the diversified and experiential consumption needs of residents. In the process of developing commercial districts, Liaocheng City must not only complete the task of economic growth, but also ensure the upgrading of the consumption structure. In order to provide support for scientific decision-making, this paper studies the ways to update and optimize commercial districts from the perspective of industrial ecology, so as to achieve the goal of efficient operation and sustainable development ^[2].

2. Research background and significance

In the context of China's economy shifting from a stage of high-speed growth to a stage of high-quality development, consumption plays an increasingly important role in economic growth. As the main spatial carrier of consumption activities, the development model of urban commercial districts is undergoing profound changes. According to data from the National Bureau of Statistics, in 2024, my country's total retail sales of consumer goods reached 48,789.5 billion yuan, an increase of 3.5% year-on-year, showing an overall recovery trend. However, the retail sales of traditional business formats such as department stores are still declining, indicating that the problem of a mismatch between consumption structure upgrading and commercial supply is becoming increasingly serious. Under such circumstances, traditional commercial district development methods such as "spatial expansion" and "project introduction" can no longer meet the new requirements and must be transformed into industrial ecosystem cultivation characterized by factor synergy and scenario innovation^[3]. Liaocheng City, as a regional hub city, needs to leverage its commercial district development to both promote local consumption upgrades and stimulate regional economic vitality. In the process of commercial district renewal, it can rely on consumer data monitoring, business structure analysis, and trend judgment to provide a scientific quantitative basis for decision-making.

3. Major problems in current commercial district development

3.1. Coexistence of oversupply and structural imbalance

As commercial real estate continues to expand, urban commercial districts are caught between oversupply and structural imbalance. According to relevant research data, in 2024, the average vacancy rate of shopping malls in key cities nationwide was 12.6%, an increase from the previous year, with even higher vacancy rates in third-tier cities, indicating that the supply of commercial space far exceeds effective demand. The stock of high-quality retail real estate in 21 cities nationwide has exceeded 140 million square meters, and the per capita shopping mall area in some small and medium-sized cities exceeds 2 square meters, indicating that the expansion of commercial volume has exceeded the affordability of residents' offline consumption. Based on the actual situation in Liaocheng City, although commercial complexes and street projects have been promoted simultaneously in recent years, the functional positioning of business districts is becoming increasingly similar, and the layout of business formats is repetitive, resulting in dispersed customer flow and low resource utilization.

3.2. Severe homogenization of business formats and insufficient consumer attractiveness

As the consumption structure continues to upgrade and demand becomes increasingly diversified, the problem of homogenization of business formats in urban business districts is becoming more and more serious, becoming one of the factors affecting consumption agglomeration. In Liaocheng, commercial projects are still dominated by traditional business formats such as clothing and catering. The overall growth pressure of these business formats is relatively high, and the motivation for brand innovation is insufficient, leading to slow updates to commercial content and reduced attractiveness. Meanwhile, data from the National Bureau of Statistics shows that in 2024, the growth rate of service consumption (6.2%) was much higher than the growth rate of retail sales of goods (3.2%), indicating that residents' consumption is shifting from "commodity-oriented" to "experience-oriented." However, judging from the operation of business districts in Liaocheng City, the current commercial supply is still dominated by standardized chain brands, while the proportion of emerging

business formats such as cultural experiences, leisure and entertainment, and digital consumption is relatively low, failing to meet the needs of consumption upgrading. According to the comprehensive analysis of the monitoring data of smart business districts in Liaocheng and the operating data of units above the designated size, the growth of customer flow and sales in some business districts is inconsistent, and the consumption dwell time is short, showing the characteristics of “having customer flow but weak conversion”. In essence, this is due to the lack of attractiveness caused by the single business structure and the lack of consumption scenarios^[4].

3.3. The operation mechanism is fragmented and the degree of collaboration is not high

At present, the operation of urban business districts is characterized by the fragmentation of the main body and the lack of collaboration. There is a lack of a unified operation platform and collaboration mechanism among various commercial carriers, property owners and merchants, resulting in a low level of resource integration. In retail, commercial operations, and many other industries, there is a common phenomenon where each party operates independently, often working in silos. Various systems, such as cashier, membership, inventory, and marketing, operate independently and do not share data, which hinders cross-departmental collaboration and limits improvements in overall operational efficiency. Relevant studies have shown that more than 72% of enterprises have “data silos” and “collaboration gaps” in operation and management, resulting in inconsistent indicator standards and longer decision-making chains. In the practice of developing commercial districts in Liaocheng City, most commercial projects are operated by different entities, and a unified planning and coordination mechanism has not been established. This hinders the formation of synergy in promotional activities, customer flow organization, and brand introduction.

3.4. Insufficient data support and delayed decision-making

Currently, commercial district governance relies increasingly on data, but in practice, insufficient data support and delayed decision-making remain problems. According to the National Bureau of Statistics, most data from designated enterprises is presented in monthly summaries, failing to reflect trends in customer flow and consumption within the commercial district. The data lacks timeliness and granularity. In Liaocheng City, statistical data primarily focuses on aggregate indicators, lacking dynamic observation of the internal business structure, consumption conversion, and customer flow trends. Furthermore, the cross-departmental data sharing mechanism is inadequate, leading to data fragmentation. Simultaneously, investment decisions and operational adjustments are largely based on experience, failing to respond promptly to changing consumption trends, thus affecting the speed of refined management and ecological development of the commercial district.

3.5. The assessment orientation is biased towards short-term performance

At present, the development of business districts is still mainly based on short-term indicators such as investment scale, number of projects and occupancy rate, and lacks the orientation of ecological cultivation and quality improvement. Relevant studies believe that when evaluating local commercial projects, the proportion of fixed asset investment and investment promotion completion rate is generally over 60%, and less attention is paid to the adjustment of business structure and the level of consumption activity^[5].

Currently, the statistical monitoring system has covered the operating data of units above the limit, but the reliance on scale expansion in performance evaluation is still obvious, which leads to some business districts emphasizing construction and neglecting operation, ignoring long-term cultivation and endogenous growth momentum. This orientation weakens the ability of business districts to shape the ecosystem and develop in the

long term, and cannot form a good and sustainable business pattern.

4. The path of business district renewal and optimization under the guidance of industrial ecology

4.1. Spatial structure optimization and composite function reconstruction

In the stock development stage, the spatial optimization of business districts should shift from incremental expansion to structural reshaping, and reorganize the functions of existing commercial carriers to improve overall efficiency. Relevant research by the Ministry of Housing and Urban-Rural Development shows that the utilization rate of commercial facilities in some cities in my country is not high, and the average utilization rate of commercial properties in key cities is about 75%, which still has a lot of room for improvement. In this context, the focus should be on revitalizing existing resources, transforming inefficient commercial spaces into multi-functional spaces. This involves expanding the single function of shopping into a multi-faceted experience, integrating commerce, culture, leisure, and public services, creating a 24/7, multi-tiered consumption environment. Based on the actual situation in Liaocheng City, some traditional commercial districts suffer from low space utilization and limited functionality. Their value can be enhanced through cultural displays, community services, and digital consumption experiences. It is recommended to monitor the operating area, sales per square meter, and customer flow data of units above a certain size to identify and classify inefficient spaces, providing a quantitative basis for precise renovation.

During spatial restructuring, it is also crucial to strengthen the differentiated positioning and hierarchical division of labor among commercial districts to prevent resource waste caused by homogeneous competition. Research shows that a reasonable tiered commercial system can increase regional consumption capacity by more than 20%, facilitating a gradient and complementary development pattern. Based on the regional development characteristics of Liaocheng City, core commercial districts can be transformed into comprehensive consumption centers, emphasizing experiential consumption and brand aggregation, while community-based commercial districts can be guided to strengthen their life service attributes, constructing a structural system of “center-led, area-supported, and community-supported.”

4.2. Cultivating diversified business formats and innovating consumption scenarios

With the upgrading of residents' consumption structure and the increase in experiential demand, single retail and catering formats can no longer meet the needs of modern urban commercial district development. According to the National Bureau of Statistics, the national service consumption growth rate in 2024 was 6.2%, 3% higher than the growth rate of retail sales of goods, indicating the rapid development of new business formats such as culture, entertainment, and digital consumption. In Liaocheng's practice, traditional commercial districts are mainly dominated by standardized chain brands and basic catering, lacking new business formats such as cultural experiences, interactive entertainment, and digital consumption, resulting in low consumer appeal.

To address these issues, diversified business formats should be promoted, introducing cultural and creative spaces, themed exhibitions, digital entertainment, the nighttime economy, and online-offline integrated formats to create diverse consumption scenarios, forming a closed loop of “browsing–shopping–entertainment–dining,” thereby extending consumer dwell time and increasing per capita consumption levels. It is recommended to use sales data from units above a certain size, customer flow monitoring data, and questionnaire survey data to quantitatively analyze the attractiveness and conversion effects of various business formats, providing a

scientific basis for the introduction of diversified business formats.

Meanwhile, the cultivation of diversified business formats should be integrated with urban public spaces and community life functions to create multi-functional and experiential consumption scenarios, thereby enhancing the overall ecological vitality of the business district. Research shows that integrated business formats combining culture, entertainment, and lifestyle services can increase customer traffic in core business districts by 15% to 20%, effectively improving commercial efficiency. Based on the locational characteristics of Liaocheng City, core business districts can be developed into centers for cultural experiences and brand aggregation, while community-based business districts can add facilities such as convenient services, leisure and entertainment, and digital experiences, thus forming a hierarchical and differentiated development pattern.

4.3. Construction of collaborative operation mechanism and platform-based governance model

In the current development of business districts, the overall efficiency is difficult to improve due to the dispersed operation entities and inadequate resource integration. National retail industry data shows that approximately 72% of commercial projects suffer from fragmented operational data and a lack of collaborative capabilities, resulting in a lack of systematic planning for marketing activities, customer flow organization, and brand introduction, hindering the formation of synergy. In Liaocheng City, various commercial carriers are operated by different properties and merchants, lacking a unified platform to integrate resources and information, leading to redundant investment and homogenized competition.

To address this challenge, a collaborative operation mechanism should be established, integrating government, businesses, and merchants onto a single operating platform. Through data sharing, unified management, and coordinated scheduling, the integration and optimization of customer flow, marketing, and service resources can be achieved. It is recommended to establish a dynamic monitoring and analysis system using operating data from enterprises above a certain size and key commercial enterprises. This will provide quantitative support and policy references for operational collaboration, thereby improving the overall operational efficiency of the business district.

A platform-based governance model can transform business district management from a single-point operation to systematic and ecological management. It establishes a multi-stakeholder collaborative governance system guided by the government, led by enterprises, and with the participation of merchants. By establishing business district alliances or digital operation platforms, marketing activities, customer flow analysis, property management, and public services can be uniformly scheduled, improving operational transparency and management efficiency.

Related practices show that platform-based governance can increase customer flow in core business districts by 15%–18%, thereby enhancing the attractiveness and sustainable development capabilities of the business district. Liaocheng City can utilize its existing monitoring system to provide dynamic data on customer flow, sales, and business structure, offering a scientific basis for platform-based decision-making, resource allocation, and collaborative operation. This will transform the management of business districts from decentralized to intensive, thereby achieving high-quality renewal guided by the industrial ecosystem.

4.4. Digital empowerment and data-driven decision-making system construction

As urban business districts evolve from extensive to intensive and ecological development, digitalization has become a crucial means to improve management and make scientific decisions. According to the National

Bureau of Statistics, in 2024, 68% of key commercial units in the national retail sector had already adopted digital operation management systems to monitor customer flow, analyze sales, and manage inventory. Although there has been a long-term accumulation of operating data from units above a certain size and key commercial outlets, most of this data consists of periodic reports and total statistics, lacking real-time and refined data, and failing to meet the requirements for rapid adjustments in business district operations. Utilizing big data and intelligent analysis to establish a decision-making system can monitor customer flow, predict sales trends, optimize business formats, and precisely manage targeted investment attraction, providing a scientific basis for business district operations.

Digital empowerment can transform business district governance from experience-driven to data-driven, achieving refined management and efficient operations. Practice has shown that using a digital business district management platform can improve operational efficiency by 15%–20%, while reducing manpower costs and avoiding resource idleness. In Liaocheng City, it is recommended to leverage existing data collection and analysis capabilities to establish a comprehensive business district monitoring and forecasting system. This system would quantitatively analyze customer flow distribution, consumer preferences, business format efficiency, and investment attraction effectiveness across various business districts. A data-driven dynamic adjustment approach can promptly adjust spatial layout, business format structure, and marketing strategies, thereby achieving continuous improvement and high-quality development of the overall business district ecosystem. Digital empowerment enhances the scientific management level of business districts and provides institutional guarantees for the ecological and sustainable development of business districts in Liaocheng City.

4.5. Improvement of the ecological-oriented evaluation system and long-term incentive mechanism

Under the guidance of industrial ecology, commercial district renewal is not merely about spatial improvement, business diversification, and collaborative operation. It also requires the establishment of a scientific ecological evaluation system to quantitatively assess the operational quality and sustainable development capabilities of commercial districts. Related research has found that traditional evaluation systems based on indicators such as investment completion rate, investment scale, and short-term sales are no longer effective in guiding high-quality development. Approximately 68% of urban commercial districts suffer from a disconnect between short-term performance orientation and long-term ecological cultivation. It is recommended to strengthen the monitoring capabilities of full-scale data from units above a certain size and key commercial outlets. A comprehensive evaluation system encompassing economic, social, and ecological benefits can be established using indicators such as sales volume, customer traffic, sales per square meter, business diversity, digital penetration rate, and consumer stickiness. This will provide a quantitative basis for commercial district optimization and reflect policy guidance and development strategy requirements.

The evaluation system should be accompanied by a long-term incentive mechanism to ensure the continuous progress of ecological renewal. Research has shown that simple administrative assessments or financial subsidies cannot sustain the development momentum of commercial districts in the long run. A combination of rewards and penalties, along with diversified incentives, should be adopted to mobilize the enthusiasm of enterprises, properties, and merchants to participate in ecological renewal.

5. Conclusion

This paper begins by analyzing the current state of commercial district development in Liaocheng City, identifying issues such as space overcapacity, homogeneous business formats, insufficient collaboration, lagging data, and short-term performance evaluation. It then proposes an optimization path guided by an industrial ecosystem, namely, spatial restructuring, cultivation of diversified business formats, collaborative operation, digital empowerment, and the construction of an ecological evaluation system. By establishing a scientific data support system and a long-term incentive mechanism, commercial districts can achieve efficient operation and sustained progress, contributing to the transformation of urban commerce. This upgrade provides institutional support and practical reference, helping Liaocheng's business ecosystem move towards a high-quality and sustainable direction.

Disclosure statement

The author declares no conflict of interest.

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