

**Local Ecological Modernisation under the Trajectory
of Urban Entrepreneurialism in China:
the Case of Manzhuang Town**

by

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A THESIS SUBMITTED
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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Cardiff University
March 2022

ABSTRACT

Since the reform and opening up since 1978, China's economy has been rising rapidly and made remarkable achievements under the so-called industrialisation of modern society. However, huge environmental costs have also been paid, with the pollution sources increasingly spreading from cities to the vast hinterlands for more than two decades. In recent years, the state of China has recognised this devastating occurrence by the progressive promotion of social eco-transition.

Therefore, the studies on how to reconcile economic development and environmental protection through the practice at local scale are very urgent, especially for the (post)suburban area where the large-scale industrial production units have been (re)located.

By reviewing mainstream studies on ecological modernisation theory (EMT) and urban entrepreneurialism, the research hypocritically proposes a theoretical framework to conceptualise and explore the eco-transition of modern industrial society in China. In this regards, three key research questions have been raised: (1) Under urban entrepreneurialism, to what extent does the urban competition and competitiveness patterns shape the win and lose of local ecological modernisation of circular economy and industrial upgrading? (2) Under urban entrepreneurialism, how does the place making towards image construction fail to deliver the local ecological modernisation through macro-economic restructuring towards tertiary industry such as leisure tourism? (3) How does the complex political-economic situation in the general capitalist trajectory of urban entrepreneurialism relate to the ecological modernisation at local places?

To answer these questions, a multi-method research design has been adopted centring on the case study approach, accompanied by in-depth interview and documentary analysis. Through investigating the transitional development of the case study area - Manzhuang under China's national state policy context of 'ecological civilisation' and the 'environmental protection inspectorate', the events of extending (green) industrial chains by PVC and Pharmaceutical downstream production, and boosting leisure

tourism by the making of Tianyi Lake Resort has been examined.

In this vein, this research has identified and explained the particular political-economic problems that have structurally constrained current ecological modernisation practices at the local scale in China. For theorisation, the overlapped tempo-spatial relationship between ecological modernisation practices and the trajectory of urban entrepreneurial growth has been confirmed in the historical development of capitalism. In the end, five contributions and two limitations of this research are drawn, followed by a specific consideration on policy recommendations.

Acknowledgements

Writing this thesis has been a long experience for me. First of all, I would like to express sincere gratefulness to Dr Li Yu. Your supervision and guidance throughout this research have taught me what to read, how to argue and why to write academically and think critically. Throughout the four years, you helped me to ask and address my research questions, to present my research findings, and to make theoretical connections between ecological modernisation and urban entrepreneurialism step by step. I appreciate each amendment you made to my manuscript. Meanwhile, I also thank to Professor Scott Orford and Professor Andrew Flynn, it has been a great privilege under your guidance through my doctoral degree. Every time, it was an enlightenment for me to discuss with you about my thesis.

Together, I am deeply thankful for the continuous support and understanding you gave me to write the thesis. All your help is of significance, and I will bring it to my future career.

I would also thank all the staffs I met during the fieldwork of the case study in Manzhuang town especially for Mr. Wang Zichao, Mr. Wang Kui, Mr. Guo Haibo, Mr. Zhu youjian, Mr. Zhu Rui, Mr. Si Xiangfeng, Mr. Lu Zijia. I remember all the help you gave me. We got along with each other very well. In the end of my stay, we became friends. Without your generous assistance, it would be impossible for me to collect enough data to fuel my research on local ecological modernisation in China.

Big thanks to all my colleagues and other friends I met in Cardiff, especially Naja, Pascal, Fay, Yani, Xidong, Rui, Dami, Guoqian, Xiaoxiang, Zizheng, Guanqiong, Lucy, Karolina and Krista. Your companionship has made the long research journey cheerful.

I could not thank more to my family. My father and mother are the harbour. I could not finish this study without your silent support and consistent encouragement.

Special thanks to my fiancé Liu Xueli. Your patience is precious for me.

This thesis is dedicated to the memory of my grandmother who passed away peacefully in the early spring of 2022.

Acronyms

EMT	Ecological Modernisation Theory
EPI	Environmental Protection Inspectorate
DIPC	Dawenkou Industrial Park Committee
DIP	Dawenkou Industrial Park
JNHZ	Jinan High-tech Zone
TAHZ	Tai'an High-tech Zone
TTLTD	Taishan Tianyi Lake Tourism Development Company

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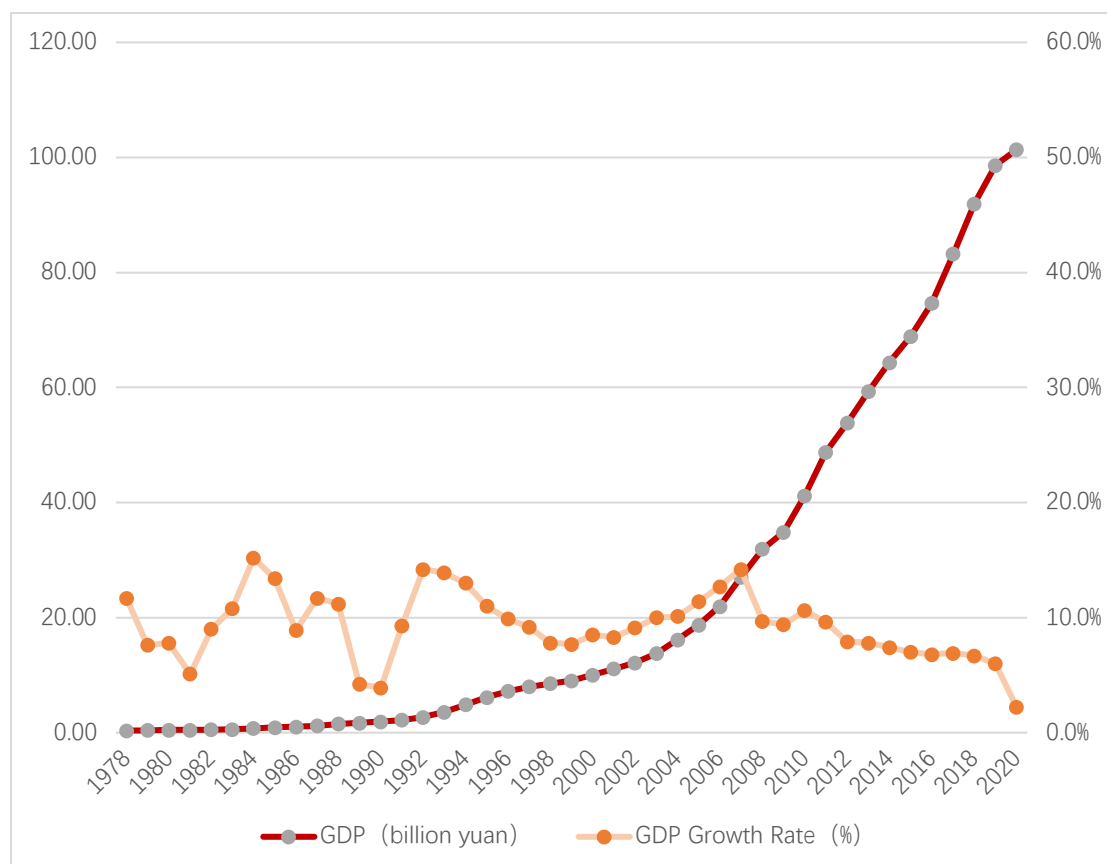
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Chapter 1. Introduction

1.1 Research Background - The Economic Boom and Concurrent Environmental Pollution in China Since the Late-1970s

Since the reform and opening up of China in 1978, the prosperity of the Chinese economy has been rising rapidly. It has made remarkable achievements in the context of the industrialisation of modern society. From 1978 to 2020, the GDP of China grew 275.5 times with an annual average growth rate of 9.5% (Figure 1.1). After 2010, China was ranked among the ‘middle-income’ countries and entered the middle stage of industrialisation.

Figure 1.1: GDP growth from 1978 to 2020



(Source: Adopted from official website of the Chinese National Bureau of Statistics, 2021)

However, behind this economic growth, China has incurred a huge environmental debt. The discharge of wastewater, smoke, dust, and solid waste has increased in a fluctuating manner. In 2005, China accounted for 16 of the 20 most air polluted cities in the world (Watts, 2005). In 2007, China became the world's largest carbon emitter. Since the 1990s, less than 1% of China's top 500 largest cities have met the Class I air quality standards recommended by the state (He et al., 2002). In 2017, among the 338 prefecture and above-level cities, 239 cities failed to reach the required environmental air quality standard, accounting for 70.7% (Ma et al., 2022). According to the bulletin on China's ecological environment published by the Ministry of Ecology and Environment, among the 1,940 surface waters in China, 462 were classified as Class IV and V-1, accounting for 23.8%. In addition, 161 of their qualities were classified as inferior V-2, accounting for 8.3% (MEE, 2017). For groundwater quality, the 5,100 monitoring points in 223 prefecture-level cities across China showed that 51.8% and 14.8% of them were of poor quality and extreme poor quality respectively, with the seriously exceeded pollution index in reference to the content levels of manganese, iron, nitrite nitrogen, ammonia nitrogen, nitrate nitrogen, sulphate, fluoride, and chloride (ibid). A report combined by World Bank and SEPA stated that up to 760,000 people have died prematurely each year in China due to air and water pollution (BBC, 2007).

After the 1990s, the urban problems of rising land price, space shortage, traffic congestion, and increased environmental requirements emerged in the cities in the coastal area of China. Therefore, the Chinese local governments turned to focus on the development of the various types of new district in the outer city which normally evolved from industrial zones towards more innovative and mixed functional urban areas (Song, Stead and de Jong, 2020). The statistics show that the number of new built

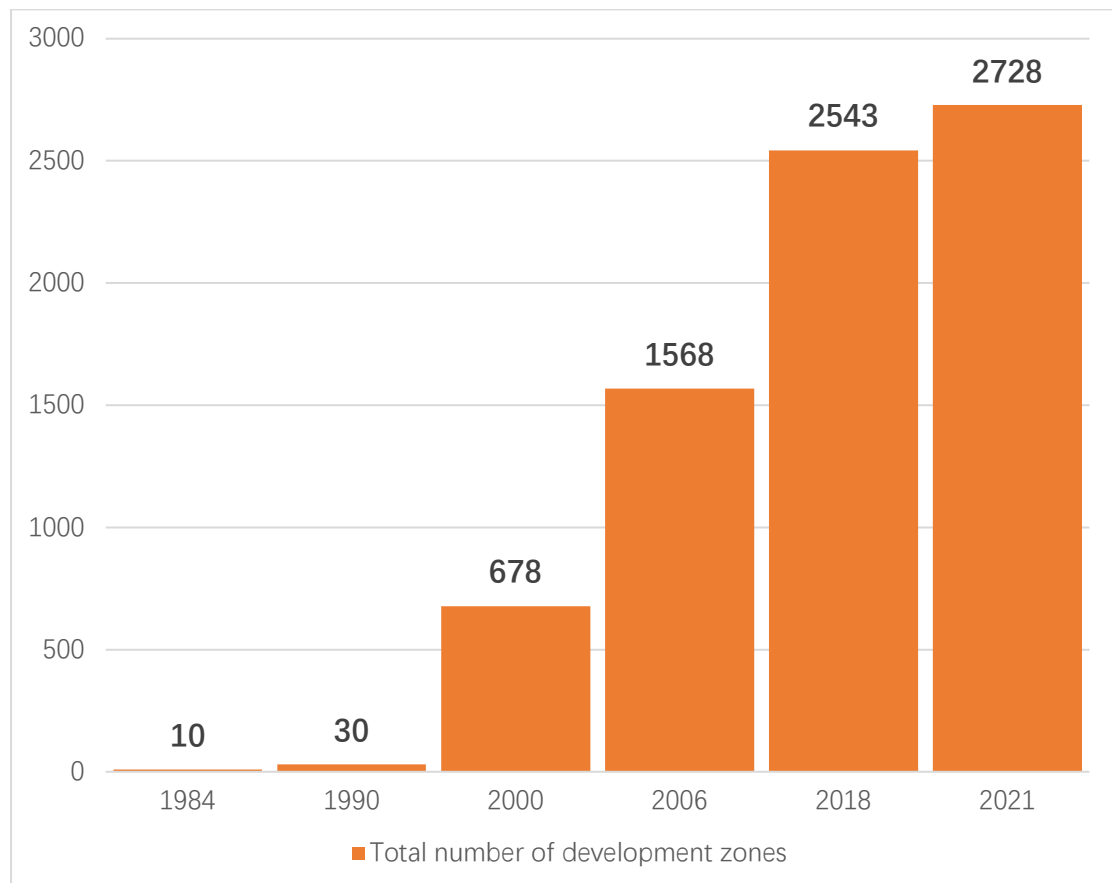
¹ According to the *Environmental Quality Standards for Surface Water of the People's Republic of China* (2002), surface water quality is divided into five categories.

The water quality of Class I is good and can be used for drinking after simple purification treatment (such as filtration) and disinfection. Class II is where the water quality is slightly polluted, and after conventional purification treatment (such as flocculation, sedimentation, filtration, disinfection, etc.), it can be used for drinking. Class III's water quality is more polluted but it can also be used for daily drinking after treatment. The water quality of classes IV and V are poor and cannot be used as a source of drinking water.

² Inferior V refers to severely contaminated water whose quality is below the lowest national standards.

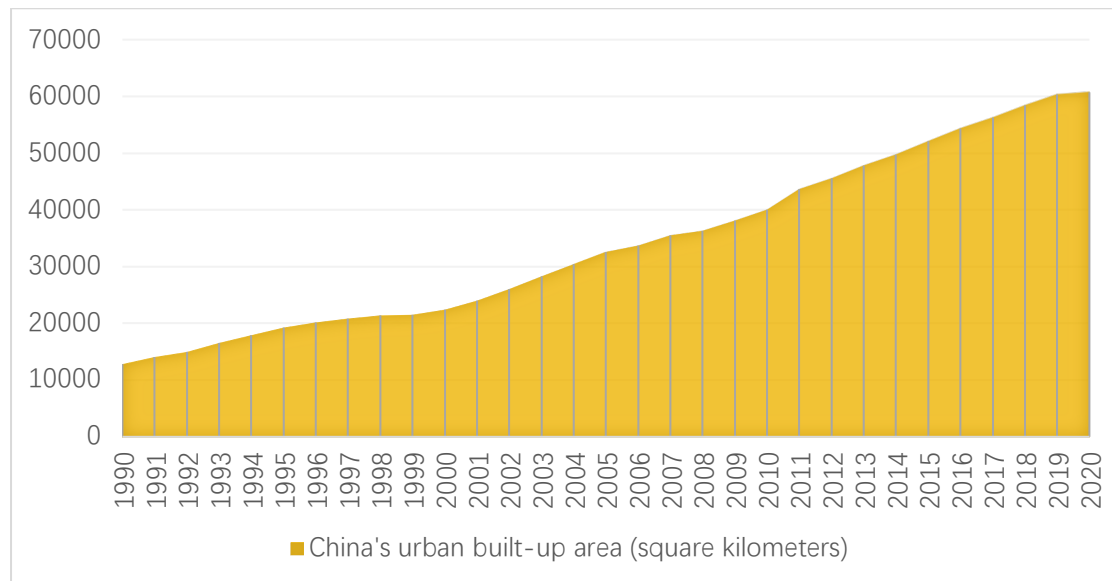
development zones in China increased from 10 in 1984 to 2,728 in 2021 (Figure 1.2). At the same time, the area of urban built-up areas in China has expanded from 12,855.7km² in 1990 to 60,721.3km² in 2021 (Figure 1.3). This phenomenon of enlarged spatial engagement clearly indicates that China is experiencing (post)suburbanisation (Wu and Phelps, 2008; Wu, 2011). It also means that the pollution sources (mainly the mass production units) have started to spread from central cities to the vast hinterlands for more than two decades. Hence, the risk of environmental degradation has the great potential to affect the entire urban-rural continuum as a whole.

Figure 1.2: Total Number of Development Zones in China



(Source: Adopted from the list of audit announcements on China development zones in 2006 and 2018, and the current situation and development trend of the regional market in China's industrial parks, 2021)

Figure 1.3: The increase in China's urban built-up areas from 1990 to 2020



(Source: Adopted from the Chinese Statistical Yearbook from 1990 to 2020)

Confronted with these great perils, the Chinese state has recognised this devastating effect on the natural environment looming behind the rapid urban expansion. The carefully planned national campaign of industrial eco-transition in the forms of the ‘ecological civilisation’ and ‘environmental protection inspectorate’ has been initialised from the top down to the local levels to redirect the socio-economic development into a more environmental harmonious pathway as a result.

Therefore, it becomes necessary to study how local places across China can realise the win-win situation of economic development and environmental protection, especially for the (post)suburban areas where the large-scale industrial production units have been (re)located. This background is the starting point of this research.

1.2 Research Aim, Questions, and Contributions

The overarching aim of this research is to identify the structural problems that constrain ecological modernisation practices in China.

In doing so, a case study of Manzhuang town in the (post)suburb of Tai'an city has been conducted. This is where the local environmental changes have been recently initialised by the surging of the associated national policy campaign. Building upon the survey, a theoretical linkage between local ecological modernisation and urban entrepreneurialism has been made. Accordingly, three critical questions have been raised in this research.

First, triggered by the national policy circumstances of 'ecological civilisation' and 'environmental protection inspectorate' in China, the local entrepreneurial state has been attempting to change the development pathway from resource-intensive based growth towards transitional growth to achieve ecological modernisation. In this regard, the preliminary question has been raised with the initial knowledge of ecological modernisation theory: Under the national policy advocacy of ecological civilisation and environmental protection inspectorate, how does the ecological modernisation of (1) cleaner production (2) circular economy (3) macroeconomic restructuring towards manufacturing upgrading and tertiary industry take place? And what are the problems to realise them?

Then, the preliminary question has been revised in line with a further understanding from urban entrepreneurialism and ecological modernisation theory as well as from empirical inspiration of the specific case (see the process of raising the revised research questions at the Section 3.5 and 4.3.4).

In this sense, research questions 1 and 2 intend to explore the reasons behind the implementing problems in entrepreneurial transitional growth at a local scale.

Research Question 1

Under urban entrepreneurialism, to what extent does the urban competition and competitiveness patterns shape the win and lose of local ecological modernisation of circular economy and industrial upgrading? (i.e., What makes the local attempt to extend the (green) industrial chains simply become impossible?)

Research Question 2

Under urban entrepreneurialism, how does the place making towards image construction fail to deliver the local ecological modernisation through macro-economic restructuring towards tertiary industry such as leisure tourism? (i.e., Why is the boosting of the leisure tourism transition finding it difficult to bring about fruitful outcomes but incurring a financial burden?)

Based on the research outcomes that have been addressed in the previous research questions, research question 3 further interrogates the broader spatio-temporal correlations between the ecological modernisation practice and urban entrepreneurial growth mode at a local scale as a unique historical course that characterises contemporary capitalist development.

Research Question 3

How does the complex political-economic situation in the general capitalist trajectory of urban entrepreneurialism relate to the ecological modernisation at local places? (i.e., How can we understand the macro-political economic coherent relationship between the urban entrepreneurial growth mode and ecological modernisation practice?)

The outcomes of this research have made five contributions to the knowledge on ecological modernisation and urban entrepreneurialism:

(1) This research has tried to re-orient the empirical study of EMT from the national (policy) base, governmental sectoral base, and industrial sector base to the place base.

(2) This research has introduced the political-economic analytical perspective to the study of EMT through which the macro trajectory of urban entrepreneurialism has been

engaged as a growth mode to better articulate the ecological modernisation practices at the local scale.

(3) This research, by forming a coherent approach from literature review to empirical study, has clarified the misuse of EMT in local eco-transition studies in Chinese academia.

(4) The introduction of EMT in this research can be regarded as a theoretical enrichment of the main literature of urban entrepreneurialism studies. To some extent, it opens up a new research area for urban entrepreneurialism studies to examine the process of the ecological modernisation.

(5) In relating to the important role of small towns in urbanisation, this research can be regarded as providing a recent case looking into small towns regarding urban entrepreneurialism studies. This is where transitional growth is taking place, driven by the local entrepreneurial state.

1.3 Structure of the Thesis

The storyline of this research should be understood in a simple way. With the rising pollution caused by the high level of economic development in China, the national state is aware of the problem of environmental degradation and it is trying to put forward a campaign for an eco-transition. For the places in the growth mode of urban entrepreneurialism, some deep-seated political economic problems have made local ecological modernisation difficult to achieve. This thesis can be expanded as follows:

‘Chapter 2. Literature Review I: The Concept of Ecological Modernisation’ examines the academic debate around the conceptualisation of ecological modernisation as a theoretical framework for eco-transition. It first explores the general concept of ecological modernisation in relation to its ideological conviction, theoretical development, and omissions. Then it focuses on the production aspects of ecological modernisation positioned within the existing knowledge. The review concludes by highlighting the gaps surrounding the relevant studies on EMT that this research seeks to fill.

‘Chapter 3. Literature Review II: Urban Entrepreneurialism as a Contemporary Capitalism Development Trend’ exposes the trajectory of urban entrepreneurialism as the overarching growth mode under which the local attempt of ecological modernisation takes place. It revives the political-economic mechanism of urban entrepreneurialism constituting of production and consumption modal change, state rescaling, regime politics, and options for local manoeuvring. The Chinese circumstances in particular are reviewed. In the end, this chapter covers three major analytical axes that the extant literature has put forward, namely severe inter-locale competition, place-making towards image construction, and territorial competitiveness.

‘Chapter 4. Methodology’ considers the ontological and epistemological thoughts of this research and justifies the adoption of the research methods with regards to the case study, in-depth interviews, and documentary analysis. The chapter also explains the reason for the site selection, examines the ethical concerns, and raises the research

questions.

‘Chapter 5. The Context: Manzhuang under Turning Point’ weaves the recent policy context for this research. The two most influential policies are focused on, specifically the ecological civilisation and the environmental protection inspectorate. The chapter lays the national policy ground to expound on why the practices of ecological modernisation have been stimulated by the local entrepreneurial state in Manzhuang.

‘Chapter 6. The Constraints of Ecological Modernisation Practices in Manzhuang’ explores two specific events of ecological modernisation in the case study of Manzhuang. The chapter first examines the difficulties involved in extending the (green) industrial chains. It provides evidence in relation to the adding of PVC and pharmaceuticals. Then the chapter examines the inescapable problems on boosting leisure tourism. The evidence emerging from the making of Tianyi Lake Resort is displayed. In this sense, this chapter provides details on how the local ecological modernisation attempts have been hindered by the particular political economic situation that the local state has to face under the trajectory of the urban entrepreneurial growth mode.

‘Chapter 7. Discussion: The Structural Problems of the Local Ecological Modernisation Practices’ draws on the significance and relevance of this research. It first discusses the causation of the emerging structural problem of local ecological modernisation based on the empirical findings in Chapter 6. This is followed with a special focus on the tension of an authoritarian socialism state to adopt capitalism in the form of urban entrepreneurialism. Afterwards, this chapter makes a brief response to the production aspects of ecological modernisation theory. Then, this chapter continues to respond to the core assumptions that ecological modernisation theory has claimed on its ideological convictions. A modified interpretation has then been proposed in relation to the political economy of the entrepreneurial growth embodied in the historical process of capitalism development.

‘Chapter 8. Conclusion’ summarises the key findings with respect of the major

research questions. The five contributions of this research are highlighted regarding the study of both ecological modernisation and urban entrepreneurialism, followed by the limitations of the research and provides directions for future studies. In the end, this chapter justifies the moral stand of not to propose policy recommendations to the state of China.

Chapter 2. Literature Review I: The Concept of Ecological Modernisation

2.1 Introduction

Since the 1970s, the Western industrialised countries have generally undertaken environmentally-motivated reforms to their social institutions which have resulted in a growing independence of ecological rationales from other rationales, such as economic and political rationalities as they affect modern production and consumption practices. As a result, the socio-economic changes caused by the environmental concerns can no longer be grasped by the traditional political terms, such as socialism, liberalism or conservatism (Cotgrove, 1982; Mol, 1995; Spaargaren, 1997). Academics have, consequently, proposed a new theory to conceptualise this change. Ecological modernisation theory has been suggested as a way of describing this social institutional restructuring as part of the reflectivity on modernity in present society (cf. Giddens, 1991; Beck et al., 1994). It mirrors the increasing awareness and anxiety of the ecological crisis caused by industrial development (Mol, 2003).

In keeping with this theoretical background, this chapter first provides a basic and overall understanding of the ecological modernisation concept, its major debates in terms of ideological conviction, theoretical developments and omissions in order to expose both the theoretical advantages and shortcomings of ecological modernisation's ability to conceptualise the grand topic of social sustainable transition.

This chapter then explores the convergent usages of the pragmatic dimensions of the extensive ecological modernisation literature. The purpose of this section is to identify the thematic fields that can be adopted as a heuristic framework to inspire the case study of this research.

By the end of the chapter, conclusions will be drawn concerning the research gaps

which exist in the current literature which constrict its ability to offer the insights required to facilitate the research aims of this dissertation - that is, to understand local efforts at ecological modernisation in China. In this process, the literature will be examined seeking appropriate knowledge on urban entrepreneurialism that can be beneficially applied to this study (see Chapter 3).

2.2 The Ecological Modernisation Theory

The concept of ecological modernisation was first proposed by the German scholar Martin Janicke in 1982 in a study of preventive environmental policy (Xun and Janicke, 2010; Jin, Mol and Bluemling, 2011). Immediately afterwards, Huber (1982; 1985) formally used the term as a social theory of sustainable transition to argue that capitalist modern industrial society should and has been undergoing an ecologically rational institutionalisation of production and consumption on the basis of a changed relationship between the economy and ecology and ultimately will create a win-win situation for economic development and ecological protection. Afterwards, a series of Western studies, mainly in Germany, Netherlands, United Kingdom, and later America have subsequently contributed to provide more contextual definition of ecological modernisation in which technological, socio-economic, political, and cultural aspects transit interdependently.

Ecological modernisation is concerned with more than just physical improvements as it is a social theory or a theory of social change with broader heuristic ideas to perceive sustainable transitions of modern industrialised society (Spaargaren and Mol, 1992) *‘that are induced, motivated or triggered by environmental considerations’* (Castree et al., 2016, pp. 257).

2.2.1 The Ideological Conviction

As an ideological conviction, it is conceptualised that ecological modernisation is a process of environmentally induced institutional change in the technological, social, political and economic structure. Ecological modernisation envisages a process of the reflective modernisation of the socio-institutions. It is based on the two hypotheses: first, that once a modern society has attained a threshold level of material affluence in which marginal economic increases cease to bring commensurate returns, the option of a transition from an acquisitive modernity to an era of ecological modernisation becomes available and second that it is possible that the central institutions of modern society can be transformed and an ecological rationale can be structurally ‘anchored’

in the reproduction of these institutional clusters in which the deep changeover of modern capitalistic society seems unnecessary, that is, through appropriate refinement under the current framework of a capitalistic political economy, a win-win situation between economic development and environmental protection can be achieved, and the later ecological attempt does not have to interrupt the perpetuating economic accumulation inherent from capitalism (Mol and Spaargaren, 1993; Cohen, 1997; Gouldson and Murphy, 1997; Spaargaren, Mol and Buttel, 2000).

This transition has been termed by Huber (Huber, 1982 and 1985, in Gibbs, 2000) as an 'ecological switchover' in the superindustrialisation phase of the historical development of industrial societies after the first phase as the industrial breakthrough from the French Revolution until 1848 and second phase as the construction of industrial society from 1848 to 1980. Huber (1991) explained that this process was more about replacing the earlier modern structure by the latest modern structure at the time when human society progressively enters the phase of superindustrialisation. So, with regard to particular ecological requirements, the greening of production and consumption will come about with institutional transition consisting of new science and technology, advanced marketing, regulations, rules and laws as well as the popular culture, mindset and lifestyle. Huber (1991) rejects ecologically flawless production processes if they fail to be economically sound and therefore are not practically viable for modern society. Huber (1991) claims the whole project is about modernising the modernity in a sustained way rather than a suicided way.

Janike (1993) explained super-industrialization by putting forward the concept of 'forward escape' as he believed that ecological modernisation should be achieved in conjunction with industrial development and that once initiated, there is no turning back.

Based on Dryzek's (1987) social choice mechanisms, Mol (1995) claims that given the potential for very different values and goals within that society, the process of embedding ecological limits into contemporary practice should not reverse the other embedding processes (such as political and economic rationality) that had already been institutionalised historically and had been generally accepted by and integrated into society. A reasonable point-of-view for someone may always be irrational to other ones

with another point-of-view. Compared with other rationalities, the unconditional prevalence of ecological rationality will rebound on itself, which will delay rather than accelerate the process of ecological restructuring. In the modern industrial society, the social foundation - the production and consumption process- is mainly in the economic field which has traditionally been dominated by economic rationality. Although other rationalities (such as ecological rationalities) need to be integrated, economic rationalities should still be regarded as the main ethos in the modern industrial society. One cannot over-investigate the fault of industrialisation because once the overturn of economic rationalities occurred, then the basic elements to run society would be destroyed (Mol, 1995).

Hence, Mol and Spaargaren (2000a) assert that deep green beliefs, such as deindustrialisation, demodernisation, counterproductivity, eco-centrism, ecologism, or deep ecology, are only 'politically correct' state of being rather than a tentative code of conduct. They suggest that to a major extent, the environmental conditions including the actual social practices, environmental institutionalisation and society-nature interactions have already been transformed within the boundaries set by the current social order, and there is no simple one-to-one relationship between radical environmental goals and radical social transformations as deep green ideas suggest. It seems to suggest that ecological modernisation holds that although modern industrial society is due to change, it should not be overwhelmed by ecological concerns. The correct attitude insists that ecological transformation is a self-delimited social change.

In sum, as an ideological conviction, it is firmly believed that modern industrial society will experience continuous progress and that ecological modernisation is its last phase. After material accumulation reaches a certain level in which marginal growth cannot bring commensurate returns, the core institution of modern society will undergo 'ecological switchover'. Therefore, as long as the continuing material accumulation of the society is ensured, favourable changes for environment will take place in the technological, political, economic and social structures at which time the option of a transition from an acquisitive modernity to an era of ecological modernisation becomes feasible. In this process, ecological modernisation synchronises with material accumulation. In addition, ecological modernisation as ideological conviction does not

give environmental goals an irrefutable priority above other societal rationality. In contrast, it views that social environmental transition should not only be judged on their contribution to improve the environment, but also on its ability not to damage economic dimensions of interest. The unconditional rebound of ecological rationality to economic rationalities will delay rather than accelerate the process of ecological embeddedness. Contemporary economic practice is firmly rooted in modernity. Once the economic foundation of modernity collapses, the premise of embedding ecological rationality will be endangered and the stability of ecological transformational process will be disrupted. Therefore, any extreme measures for eco-transition are undesirable.

2.2.2 Theoretical Development

Like many other social theories, ecological modernisation is a dualistic paradigm, the two sides of which are difficult to separate. It has both descriptive/analytical and prescriptive/normative attributes. The former can be seen as a descriptive model providing the analytical tools and hypotheses for interpreting the real occurring processes that are related to contemporary environment-induced change in late modernity, while the latter is a normative ideology which has gained a prominent place in the social and political debate attempting to establish a widespread appeal by asserting that certain forms of intervention can bring about ecological modernisation (Mol,1995; Murphy, 2000).

Buttel (2000a) has commented that the codification of ecological modernisation has given rise to the widening scope of the studies. In this sense, Murphy (2000) identifies five interrelated dimensions have been discussed in ecological modernisation literature namely (a) technology, entrepreneurs and the transformation of society, (b) gaining the *gratis* effect of macroeconomic restructuring, (c) the new politics of pollution, (d) cultural politics and discourse, and (e) restructuring and environmental institutional reflectivity.

Mol and Sonnenfeld (2000) distinguish at least three stages in the ecological modernisation literature. They argues that the first phase relates to the starting point of ecological modernisation theory in early 1980s, characterised by an affirmative

emphasis on the role of technological innovation in environmental reform, especially in the field of industrial production; the criticism of the government's bureaucracy; an optimistic attitude towards market actors in environmental reform; a system-theoretical perspective with limited notions of human agency and social struggles; and analysis at the scale of nation-state in OECD countries. The second phase occurred from the late 1980s to the middle 1990s which argued for less stress on technological innovation as the key driver of ecological modernisation; more balanced weight between the market and the state; more attention to the institutional and cultural dynamics for ecological modernisation; and continuing studies on the industrial production at nation-state level in OECD countries. The third phase began in the mid-1990s during which ecological modernisation was theoretically and geographically broadened; including an increasing number of studies on the consumption process and green lifestyle³, covering the transformation of patterns of energy and resource consumption that relate to the sustainable construction and maintenance of infrastructure and daily life of residents' behaviour; and attention to non-Western European countries, especially newly industrialised countries in Asia, with a notice of the global dynamics in environmental reform.

Janicke and Jorgen (2006) argue that ecological modernisation centres on the growing tendency towards the so called key new approaches of environmental regulation in policy/decision making and implementation so as to better facilitate the ecological modernisation of production and consumption of the modern society - targeted and result oriented governance, environmental policy integration into sectoral policies, cooperative governance indicating the co-regulation between the government and the industry, and the participation of civil actors which are combined with the traditional multi-level governance. Similarly, Fisher, Fritsch and Andersen (2009) stress that

³ However, Huber (2004) points out that although the Western countries have created a 'consumer society' in which the production linkages account for 70% of the pollution from beginning to end, while the terminal consumption link accounts for less than 30%. Therefore, he calls for attention to production and consumption in modern society to be not equally important, and ecological modernisation should focus on the production links. Given Huber's judgement, this research does not focus on the dimension of the consumption link.

ecological modernisation is the diffusion of new environmental policy instruments capable of promoting a real transition accompanied by public participation, stakeholder inclusion and neo-corporatist arrangements. Janicke (2008) proposes ecological modernisation is an ‘explosion of complexity’ underlying the extended policy process in terms of the constellation with multiple levels (from global, national to local), sectors (e.g., industry, energy, transport, and agriculture) and actors (represented by the government, business, and the civil society), in a ‘smart’ and innovative policy framework of environmental regulation.

Table 2.1 Elements of a ‘smart’ and innovative policy framework of environmental regulation

Instruments are innovation-friendly if they...

- provide economic incentives,
- act in combination,
- are based on strategic planning and goal formulation,
- support innovation as a process and take account of the different phases of innovation/diffusion.

A policy style is innovation-friendly if it is...

- based on dialog and consensus,
- calculable, reliable, and has continuity,
- decisive, proactive, and demanding,
- open and flexible,
- management-oriented.

A configuration of actors is innovation-friendly, if...

- it favours horizontal and vertical policy integration,
- the various objectives of regulation are networked,
- the network between regulator and regulated is a tight one,
- the relevant stakeholders are included in the network.

Source: Janicke, 2008

Mol and Spaargaren (2009) believe that the studies of ecological modernisation on environmental reform can be categorised in five themes. As they propose, first there are studies on the new role of science and technology in environmental reform. Second, it refers to studies focused on the increasing importance and involvement of economic and market dynamics, institutions and actors in environmental reform. A third theme in ecological modernisation studies relates to the changing role, position and performance of the ‘environmental state’ that is intrinsically linked to political modernisation in European context or regulatory reinvention in the US context with the emergence of more decentralised, informal and consensual style of governance. The fourth theme is

the modification of the position, role and ideology of social movements (*vis-à-vis* the 1970s and 1980s) in the process of eco-transition. Finally, the studies concentrate on the emergence of new ideologies in political and societal arenas that counter-positioning of economy and environment are no longer seen as tenable positions.

Christoff (1996) criticises the ecological modernisation process that overemphasizes the technological and techno-corporatist change and calls it a weak form of ecological modernisation. An alternative approach is the adoption of a strong form of ecological modernisation that not only focusing on technological and instrumental levels, but also on mechanical levels that are more systematic and open.

Luck (2003) and Dryzek et al (2003) have commented similarly that weak ecological modernisation confined itself to instant managerial solutions to industrial pollution - that the weak form ecological modernisation merely focuses on niche policies and institutional adjustment aimed at appearances while avoiding touching topics of the state's complicity.

In addition to the strong and weak form, scholars also reckon that when discussing ecological modernisation in different geographical settings, it is necessary to differentiate it into three stages which seems very much time-place dependent (Sonnenfeld, 2000). Stage 1 labels as ecological modification as 'classical modernisation' which is relevant for developing countries that are in the middle of conventional industrialisation and urbanisation processes ('first-time modernisation'), but start to modify these processes according to ecological conditionalities; Stage 2 labels as 'channelled ecological modernisation', which refers to rapidly developing countries where there exists acceleration towards further greening in the industrialisation process through a combination of strategies; Stage 3 labelled as 'comprehensive ecological modernisation' refers to the highly developed world where the institutional crystallisation of ecological rationales has almost been achieved (Zhang et al., 2007).

2.2.3 Major Theoretical Omissions

Ecological modernisation theory has been linked to the sustainable development

paradigm as both are aimed at achieving sustainability. Hajer (1995) indicates that ecological modernisation shared the same root with sustainable development – the formulation of Brundtland Report ‘*Our Common Future*’ - that the core values of them were economic development on the premise of protection of the environment, moderate utilisation of resources and the harmony of society under capitalism. However, ecological modernisation has not been an uncontroversial theory when it comes to conceptualising a socially sustainable transition. Critics have raised three issues focussing on the theoretical shortcomings when using the ecological modernisation perspective to estimate the social sustainable transition.

Langhelle (2000) argues that ecological modernisation should be seen as ‘a necessary, but not sufficient, condition for sustainable development’, this argument would affect not only the scope but also the goals that environmental policy is trying to achieve. In comparison to sustainable development, it is a reduced version which uses more manageable expressions for policymakers to perceive the relationship between development and environmental protection of the society and therefore is more easily accepted by the authorities in the political arena.

But it is because ecological modernisation shows more compatibility with the aims of authorities that underlines the shortcoming. Hajer (1995) has viewed that ecological modernisation as a discourse composed of a set of storylines in portraying that policy making must be based on central tenet that there is no necessary conflict between environmental protection and economic growth and that they may be in fact mutually supportive. It becomes the cultural politics that these storylines concern the link between environment and economy and are mobilised by members of various discourse coalitions to promote specific interests. Yeh (2009) argues that this is because the discourse made ecological modernisation from independent knowledge so that once it has been drawn, it then become an independent field of operation. So, ecological modernisation, in this view, is not a politically neutral and universally identical, but rather a cultural politics that creates the seductions for selective thinking about ‘nature’. It authorises someone in some way to redefine the field that can perform operations. Thus, ecological modernisation is not viewed as something that is absolute for all objects. Instead, it is examined as a set of attractive ideas which are adopted and

communicated by policy elites through the drawing of cognitive maps where a great freedom of interpretation and operationalisation can be found (Hajer, 2020). In this case, ecological modernisation is likely to degenerate into a manipulated field that only includes some specific environmental issues marked as easy to change and economise, while other complicated environmental issues that cannot be economised, such as natural system, environmental equity, are precluded.

For this reason, Jin, Mol and Bluemling (2011) find that compared with sustainable development, one of the fundamental pillars of sustainable development, the social cohesion aspect, is absent here. Ecological modernisation concentrates on reconciling economy and ecology but keeping silence on class and inter-generational equity of environment. Moreover, topics on the human-nature relationship, such as nature's carrying capacity, ecological limits and biodiversity, has been skipped (Cugurullo, 2016). In this regard, Gouldson and Murphy (1997) doubts whether the macro-economic restructuring of Western developed countries could be applied to developing countries so as to achieve decoupling. They conclude that although as the initiator region of globalisation, the EU's completion of macroeconomic restructuring is basically due to the shift of factories to the newly industrialising countries over time, especially to East Asia. Here the fatal fact is that the developed industrial capitalist countries have relocated major polluting production activities outside their own region so that their domestic environmental problems have been removed, but these outside regions cannot ensure the reduction of resource inputs and total pollution as a whole. The total pollution of a global industrial system has increased rather than decreased. Therefore, this model for environmental improvement is ignoring the peripheral areas of the world and so is not truly international and holistic (Pepper, 1998). Eventually, it risks degenerating into yet another discursive representation of dominant forms of economic power resulting in greater dominance of global resources by transnational industry, national governments and 'big science' in the name of sustainability (Gibbs, 2003).

Meanwhile, the theory needs to take note that there are also parallel conceptualisations that represent sharply different beliefs and therefore criticise ecological modernisation as a way of achieving a sustainable transition which is based on the wrong premise.

For instance, the Eco-Marxism perspective, which provides different insights on capitalist environmental reform, also criticises the ecological modernisation theory as deliberately overlooking fundamentals in the sense of ignoring the default of the capitalist political economy. By relating the ecological modernisation theory and the capitalism production of treadmill (Schnaiberg, 1980), Schnaiberg et al. (2002) claims that the ecological modernisation idea of delinking natural resources from economic development' is an impossible trajectory because any environmental change that happens under capitalism is inherently unsustainable – falling into the capitalist treadmill.

Moreover, not only rejecting the 'technological fix' of modern society, even more fiercely, postmodern perspective challenged the foundation of a sustainable transition in a modern discourse by pointing to the very fact that pursuing sustainability under modernity as a grand narrative story-line just lost its legitimacy. Hannigan (2006) argues that ecological modernisation theory in the 1980s is being insufficiently acknowledged, that the limitations of modernisation theory in general under which ecological modernisation theory is built, even though the improvement of environmental efficiency to some extent may have been acquired, in an absolute sense, the development of modernisation has led to super-materialisation rather than dematerialisation, and that the environmental crisis is one of many proofs that the modern project was facing a dead end rather than the last opportunity to achieve redemption.

Therefore, York and Rosa (2003) suggest that people cannot expect too much from this single concept. Instead of criticising the limitations, it is better to view ecological modernisation theory as one of several ways to deal with environmental issues within the development phase of late capitalism. In this vein, they raise that the legitimacy of ecological modernisation concepts as they rely on the proof of four critical questions: first, the theory of ecological modernisation needs to go beyond just demonstrating the environmental related transformation of the social system, but must show that these social changes lead to real ecological improvement; second, it must prove that the late stage of modernisation is bound to trigger a high-frequency ecological transformation of production and consumption; third, it must prove that industries and enterprises that

are reducing their direct impact on the environment have not led to the negative offset of other industries and enterprises with respect to the environment; and fourth, it must show that not only is resource efficiency improving, but also that the improvement of the resource efficiency rate is higher than the growth rate of the whole production system in physical terms.

2.3 Production Aspects of Ecological Modernisation

It can be seen from the above conceptualisation that ecological modernisation as a theory of social eco-transition has attracted significant academic attention from a number of different fields. Thus, in considering the suitability of the research aim, in this review of relevant literature, the author explores ecological modernisation from the angle of the production aspects, focussing on technological adjustment for cleaner production, circular economy and macro-economic restructuring. These aspects of ecological modernisation should be understood as the three potential ways for socio-technical transition that their ultimate goal to is achieve a win-win situation of environmental protection and economic growth.

2.3.1 Ecological Modernisation as Technological Adjustment for Cleaner Production

Ecological modernisation in pragmatic terms can be viewed as a series of technological adjustments for cleaner production. In earlier work, Huber (1982, 1985) begins to promote the idea that environmental problems could be addressed by industrialists by replacing and/or improving various existing economic agents by innovative approaches, recycling, and preventive solutions. Therefore, cleaner technologies, microelectronics, genetic technologies, and new materials that could reduce and monitor industrial pollution should be encouraged in production companies. Huber offers such an approach as a desirable solution to environmental problems. He states, ‘the dirty and ugly industrial caterpillar will transform into a[n] ecological butterfly’ (Huber, 1985, p. 20 as quoted by Mol, 1995, p. 37). Later Huber (1991) categorises a bipolar spectrum of environmental technologies between end-of pipe measures (reductive) and integrated

technologies (preventive) as the standard primitives of technological adjustment toward ecological modernisation.

These views inspire optimism about technology. As a program of technological adoption, ecological modernisation approaches suggest that this will automatically engender support from the private sector, given that it has beneficial outcomes that business can gain advantages in a number of ways (Mol, 1995):

- (a) through greater production efficiency due to reduced pollution and waste;
- (b) avoiding future financial liabilities, such as the potential cost of contaminated clean-up of land;
- (c) through improved recruitment and retention of the workforce due to the creation of a better work environment;
- (d) from the potential for increased sales of more ‘environmentally-friendly’ products and services; and
- (e) finally, through the sale of pollution prevention and abatement technologies.

Spaargaren and Cohen (2020) argue that ecological modernisation overlaps with the conceptualisations of social technical transition (cf. Geels, 2005; 2010) because they both stress technological innovation and its diffusive impact upon society from micro, meso to macro scales. Further ecological transformation has consequences for the evolution and adoption of new cleaner technologies which can beneficially replace earlier technology that does not meet contemporary standards.

Thus, there is an emerging argument that public policy can be employed to repair past failures of the state, changing the relationship among government and economic actors by requiring adoption of new clean technology. Therefore, the government needs to ensure the application of alternative environmental policy, such as innovative

approaches linking the economy and ecology and voluntary agreements⁴ to catalyse the technological adjustments of enterprises. If this is done, further state intervention may not be needed (Mol, 1995).

However, Christoff (1996) argues that individual companies' growing willingness to adopt new clean technology is primarily a strategy intended to maintain or improve market competitiveness in which the environmental benefits of such technological improvement are incidental rather than a core concern for helping the society to achieve pollution reduction, and consequently such technological change may not contribute to reliable and lasting environmental improvements. It implies that the industrial companies will not automatically carry out technological adjustment by except as a result of external factors. This means there is a need for government intervention.

Hills and Welford (2002) claim that a framework backed by an 'almost voluntary scheme', like market-based tools for instructing them to invest on adopting new environmental technology, by themselves, are likely to fall short in delivering change to achieve a win-win situation: '*We cannot assume the economic actors will prove to be benevolent towards the environment unless there is an overarching policy stance which forces them so to do (pp. 323).*' This implies that the state agencies should act directly in concert to get economic counterparts (i.e., the entire the industrial system) moving onto a desirable track of technological adjustment for cleaner production.

So, it has become an obvious argument that the role of government in the context of prevailing smart regulation is still a 'functional necessity' and has to be reinvented and strengthened, in which government consistently must 'put the stick behind the door' to effectively deter industrial actors from polluting (Janicke, 2008).

2.3.2 Ecological Modernisation as Circular Economy

But cleaner production of manufacturing industries alone does not lead to a substantial

⁴ meaning the introduction of economic principles into environmental policy by placing an economic value on nature with the general aim of encouraging economic actors to take the environment into consideration automatically through the use of market based instruments in form of taxes, charges and emissions trading, etc.

decline in pollution. The conception of ecological modernisation has been later fused with industrial ecology ideas⁵ so that the focus on the individual economic sector or company level of ecological modernisation as technological adjustment has expanded to the inter-company level in the sense of an upstream-downstream perspective.

Mol (1999) was the first to link the concept of ecological modernisation with the chain-based ideas, he suggested that the manufacturing process related to ecological modernisation was ultimately an identifiable industrial system based on a closed-loop with zero emissions. He stated that environmental reforms could be classified as a 'strong form' if the technological dimensions of environmental reform do not remain limited to only technological devices of one product, emission or production process step, but include higher aggregation levels, production-consumption chains and economic networks, and organisational adaptations of socio-technological complexes.

Cohen (2000) argues even more directly that the term 'ecological modernisation', in practical terms, attempts to explain theoretically the social aspects of circular production that traditional industrial ecology studies alone do not. Later, ecological modernisation was re-approached by Gibbs (2003) and Gibbs, Deutz and Proctor (2005) to incorporate the social aspects of the eco-industrial park initiatives for a circular economy (or its synonym - the industry symbiosis). Similarly, by viewing ecological modernisation as a social theory of industrial ecology, given that the socio-institutional and actor dimensions have remained undertheorized in industry ecology studies, Koppen and Mol (2020) suggest that the purpose of ecological modernisation of an industrial system is to transform the eco-industrial park from crisis and process-oriented to chain-oriented to achieve zero emissions.

⁵ The concept of industrial ecology represents a shift away from considering cleaner production and eco-efficiency at the level of the firm. Instead, industrial ecology is said to offer a holistic conceptual framework for closing material cycles by interfirm by-product exchange and co-location so as to minimize environmental impact and achieve circular economy (Allenby, 2006; Graedel and Lifset, 2016).

To address ecological modernisation for a circular economy, major studies at the industrial park-level have focussed on analysing four main groups of enabling factors which directly link with promoting circular industrial production. From the aspect of policies and political frameworks, researchers have given attention to governmental strategic planning, detailed policy, organisation and agreement set-ups, emission monitoring and assessment procedures, as well as environmental laws, regulations, standards. From the aspect of the economic tools and incentives, governmental subsidies, funds, reforms of tax and resource price, and cost-benefit of by-product disposal have been mainly discussed. In terms of technological facilitations, research has had generally addressed the discussion of the supportive infrastructure, technological equipment and ICT (information and communications technology) for facilitating industrial symbiosis. From the perspective of inter-firm relations, forming synergetic partnerships by reducing ‘mental distance’ and building trust through activities such as workshops, training, meetings and dissemination, as well as the network behaviour on the exchange of energy, raw materials and by-products have been the popular research issues (Cf. Chertow and Ehrenfeld, 2012; Chertow, 2007, 1998; Chiu and Yong, 2004; Costa et al., 2010; Ehrenfeld and Gertler, 1997; Gibbs and Deutz, 2005; Lehtoranta et al., 2011; Mathews and Tan, 2011; Mirata, 2004; Park et al., 2008; Sakr et al., 2011; Tudor et al., 2007; Van Beers et al., 2007).

2.3.3 Ecological Modernisation as Macro-economic Restructuring

At the same time, scholars have realised that the resource inputs and emissions reduced by technological adjustment could be neutralized by continuous industrial production and consumption, even if the adjustment of industry was not reversed. Therefore, ecological modernisation should also consider the macro-economic restructuring so as to reduce the impact of economic development on the environment.

Simonis (1988; 1989) and Janicke et al. (1989) propose that the grand change of economic structure could bring about *environmental gratis* effects. Through empirical research in OECD and COMCON countries, they analysed the correlation between GNP growth and consumption of primary industrial products and found three typologies: absolute structural improvement, relative structural improvement and

structural deterioration [Ibid]. They consider that delinking GNP growth and consumption of primary industrial products is the root of solving pollution in the process of industrialisation. Although technological adjustments are important, their real significance nevertheless lies in delinking [Ibid].

Later, Janicke (1993), using correlations between GDP growth and pollution growth, confirmed the irrevocable environmental negativity that could be caused by economic structure. Cleaner production of manufacturing industries alone did not lead to a substantial decline in pollution over a 60-year period. On the contrary, the industrial economy after technological fix still left eight times the amount of environmental cost annually.

On this basis, Gouldson and Murphy (1997) proposed that the way to delink is through macro-economic restructuring to ‘unintentionally’ acquire the environmental *gratis* effect. This refers to the sectoral shift of industrial society from energy and resource-intensive industries to knowledge and service-intensive industry such as high-tech and tertiary industries in particular.

Hence, macro-economic restructuring has a great potential for ecological modernisation and this task has been translated as an urban project for creating the new ‘post-industrial’ identity of the city by breaking the old industrial image (Scanu,2015).

2.4 Conclusion: Synthesis and Current Research Gaps

The theory of ecological modernisation has evolved rapidly over a relatively short period of time with contributions from a number of disciplines. Therefore, it is difficult to draw a unified definition given that at present that Western academic researchers have not agreed on a common paradigm about the depth and width on this concept.

Above all, despite ecological modernisation theory itself reflecting the limitations of the late modern capitalist societies ideological conviction, the advantage here is that it has absorbed the basic ethos of modern society: all attempts at attaining a sustainable transition cannot detract from the primacy of economic rationality of the industrialised machine. The solution of sustainable transition cannot detract from economic development but must defer to the continuous progress of modernisation. One cannot expect to destroy the basis of capitalist industrial society, and then dream of it being reborn as an absolutely sustainable society from the ruins.

Ecological modernisation theory takes net ecological improvement for granted, precludes an ethical stand and is disputable in validity, it could be said the ecological modernisation is not a thorough, complete and definitive way for moving toward a sustainable transition. At most, it is likely a compromise that even if it is achieved, regardless of whether in strong or weak form, a pure sustainable society will not come into being. However, it is the very sustainable transition scheme that has the most chance to be realised.

On these premises, a realistic profile for ecological modernisation with pragmatic dimensions has been drawn, particularly in terms of technological adjustment, macro-economic restructuring, and the resetting of environmental regulation.

However, by proposing ecological modernisation theory as the heuristic device to address the research aim of this dissertation (that is to explore the structural constraints of ecological modernisation practices at local scale in China), it seems that the current empirical studies on production aspects do not offer enough analytical guidance to

assist in this task. The author has identified three major gaps.

Gap 1 - place as an independent geographical unit

At present, the majority of influential case studies on ecological modernisation practices focus on the exploration based on the industry level (cf. Mol, 1995; Sonnenfeld, 2000; Smink, Van Koppen and Spaargaren, 2003; Sarkis and Cordeiro, 2012), as well as at the national policy and governmental sectoral level (cf. Murphy and Gouldson, 2000; Cohen, 2000; Phuong and Mol, 2007; Mu, 2019).

The academic community have not devoted sufficient attention to ecological modernisation from the perspective of localities, as if the notion of place is less relevant. Until now, there is no comprehensive case study that has been thematically explored the ‘place’ as an independent observation subject. Hence, it is impossible to have an overall assessment of the practice of local ecological modernisation

‘Locality’ (place) is a rich concept and full of dynamics. It is the arena that is constantly linked with political economy and therefore becomes the localised social structure and agent that deserves independent focus (Cox and Mair, 1991).

This research uses one place-based case study to address the pragmatic transformations of ecological modernisation in technological adjustment, circular economy, and macro-economic restructuring together so as to have an overall grasp of the ecological modernisation dynamics at the local scale.

Gap 2 - knowledgeable analytical entry point

Following the first gap, there is clearly another theoretical gap related to the lack of *knowledgeable analytical entry point* to evaluate whether a specific place has incurred environmentally-motivated reforms. On this account, this research can be regarded as an explorative analysis in response to this gap.

As Weidner (2002) explains, ecological modernisation is ultimately shaped by the (environmental) capacity of a society as the political/policy origin – that the overall (environmental) capacity should be seen as an outcome of the broader social political

economy processes in which a series of consequences has projected onto the domain of environment.

Therefore, the key to understand the possibilities of ecological modernisation at local level is ultimately the unravelling the structure of social political economy configuration the place faced which has cast a shadow on the domain of ecological modernisation issues. However, there are few local level cases studies engaged in addressing the (environmental) capacity in consideration of broader social, political and economic process. The reason for this probably is the difficulty to find an entry point to go further. EMT is born out of environmental sociology, but it tries to cover the grand topic of social sustainable transition which is far beyond its traditional research stereotype.

Hitherto, it seems that scholars are still circumspect with respect to the circle of environmental sociology which makes it impossible to empirically decode the structural constraints in place that affect ecological modernisation at local scale. In this sense, this research, by a thorough exploration in Manzhuang, can be seen as an attempt to find a suitable entry point for analysis by proposing to look at ‘urban entrepreneurialism’, that is, a place-specific perspective based on the interdisciplinary knowledge of urban studies that has a strong revelation of the broader political economic processes upon locality after the 1970s. Thus, this research has shown that the knowledge of urban entrepreneurialism offers us the opportunity to see how the broader social political economy backdrop faced by each locality have influenced the practices of local ecological modernisation.

Gap 3 - misconceptualisation in China

At present, research on ecological modernisation in China is primitive. It is stuck at the bottleneck phase of (a) listing and reviewing Western literature (cf. China Ecological Modernization Report, 2007; Pan, 2008) and (b) fragmented interpretation based on a smattering of knowledge (cf. Li, 2009; Cao, 2015; Li and Li, 2017; Lin, 2017). The studies cited are relatively inconsistent and lack theoretical reflection. Furthermore, given the existing gaps mentioned above, when discussing topics of sustainable transition in specific places, the buzzword of ecological modernisation has been easily

misused in which case the interpretation has been actually developed under eco-city theory, planning theory and sustainable development theory in which the spuriously formalistic ecological urban evaluation indices seem to become their major contributions (cf. Shen, 2009; Liu, 2007; Chen, 2010). Evidently, ecological modernisation in China has been downplayed to be a rather vague and deceitful gimmick-concept. It seems no one really knows what ecological modernisation is as a theoretical device of social sustainable transition. In this sense, this study also attempts to respond to the mis-conceptualisation problems of ecological modernisation in Chinese academia.

Based on these gaps, the following contents of this research extend the current research on ecological modernisation, which is anchored at the national policy level, industry level and enterprise level, towards a focus on place so as to supplement and revise its theoretical construction. Then, by introducing the perspective of urban entrepreneurialism, the research will also endeavour to engage the political economic interpretation of contemporary social institutions so as to unbox the structural problems that hinder the practices of local ecological modernisation. Finally, the research will clarify and redirect the inappropriate use of ecological modernisation theory in the context of Chinese studies by offering a content-consistent case study.

Chapter 3. Literature Review II: Urban Entrepreneurialism as a Contemporary Capitalism Development Trend

3.1 Introduction: The Emergence of Urban Entrepreneurialism

The notion of urban entrepreneurialism originates from seminal theses where the reorientation of local governance from managerialism to entrepreneurialism has been epitomized as ‘urban entrepreneurialism’ (Harvey, 1989a), ‘new urban politics’ (Cox, 1993) or ‘entrepreneurial city’ (Hall and Hubbard, 1996; Jessop and Sum, 2000). In general, urban entrepreneurialism is considered as part of the socio-economic shift from a Ford-Keynesian regime to the new regime of capital accumulation in the North American and Western European countries (e.g., Swyngedouw, 1986; Soja, 1989).

Historically, the 1973 recession triggered by the oil crisis, and perhaps more deeply, the globalisation which accompanied the upheaval towards a new flexible postmodernism as against the traditional Fordist modernism (Harvey, 1989b). This affected national and local economies through GDP shrinkage, widespread deindustrialisation, fiscal austerity and high unemployment, plunging the welfare state into difficulties at both the national and local levels. In this vortex, city governments regardless their political persuasions, have been pushed to the front line by the nation state to deal with such a shift and find ways to extricate itself from the recession (Harvey, 1989a). Therefore, urban governments have moved away from the redistribution of social warfare and services, becoming imbued with speculation, rent-seeking and profit motivation in the form of public-private partnership so as to acquire exogenous growth and rejuvenate the local economy (Hubbard and Hall, 1998).

Urban entrepreneurialism brings to light the local reaction to the emerging capital and national change in the sense that it is a product of multi-scalar interaction in which capital bypasses the national scale and straightaway reaches out to the local places. Most of all, the *state of the art* urban entrepreneurialism represents the fundamental

coherence of contemporary capital accumulation.

Followed by the introduction section of this chapter, in Section 3.2, the deep roots of the political economy and its links to the historic rise of urban entrepreneurialism is reviewed, attempting to trace the dynamic of urban entrepreneurial growth mode setting. Then, in Section 3.3, the Chinese circumstance of urban entrepreneurialism is reviewed. Next, three key areas of critical debates with respect to the urban competing practices of local entrepreneurial growth is reviewed in Section 3.4. In the final Section, conclusions on this body of literature are presented.

3.2 The Political Economic Trajectories

3.2.1 The Production and Consumption Modal Change

Urban entrepreneurialism is deeply rooted in the contemporary political economic trajectories of capitalistic development. The production and consumption modal change of capitalism since the 1970s - that originated in the Western countries and then spread to the rest of world - has resulted in an increasing globalisation trend and has led to the traditional Fordism mass production being replaced by the post-Fordism flexible production as well as the turning of socio-cultural consciousness to postmodernism and consumerism. The confluence of those changes has created what Harvey refers to as 'time-space compression' (Harvey, 1989b), indicating that capital accumulation is consistent with the accelerated, footloose, expanded and enriched movement of capital, commodities, money, people and information through geographical space.

(1) Globalisation

In order to link production and sales in a manner that maximises profit, globalisation of finance, markets and technology alongside the waning cost and dissemination of faster transportation and instant communication tools, have reduced the effect of distance and thus resulted in an acceleration of the capital mobility to anywhere in the world which makes fixed capital under state control less relevant (Harvey, 1989a). This process has incorporated all places in one global economy so that economic actors are able to rapidly switch capital investment and production between countries, regions and places (Lash and Urry, 1993). Therefore, small differences between localities can lead to shifts of industrial site locations local governments have therefore been forced to join the coercive law of competition that further intensifies the capital mobility and has led to an additional bias in locational conditions across the world (Brenner, 2003a, 2003b).

In this way, globalisation has reshaped the relationship between the capital and the localities which had previously been cushioned by the national state forcing them into direct engagement with this development. Although it is often argued that the success or failure of an urban economy is best explained by the success or failure of the national

economy which encompasses it, increasingly cities are seeking to ‘delink’ themselves from their respective national economies (Lever, 1997). As Luan and He (2005, p. 51) summarise:

‘The hallmark of globalisation is the decline of state control that the development of urban economy has separated itself from national economy and integrated into the global economic system. Cities have to actively tap their potential, formulate and implement local development strategies to promote growth, enhance competitiveness, and attract resources to promote urban development. Therefore, the competition between countries is transferred to the competition among cities.’

Yin and Luo (2013) further point out that, as a result of this fundamental mechanism of the interaction between capital and the state institution under globalisation, capital goes beyond national boundaries and defies national control, thus enhancing the ability to extract profits on a global scale:

‘The economic crisis that broke out in 1973 was actually caused by the deepening of the contradiction between the breakthrough development of productivity and the status quo production relations of the national monopoly capitalism. Hence, the new round of self-adjustment adopted by capitalism for this purpose is to crack this limitation by coming into the supranational monopoly capitalism. At this stage, the socialization of capitalist production spread from individual country to multiple countries, gradually forming the global system of production and sales ... [Therefore,] the ‘strength and weakness’ between capital and the nation state have swapped... Capital not only no longer depends on the protection and assistance of the state, but in turn urges the state to change and adapt the state to its own (capital) adjustments’ (p. 71).

In keeping with the overwhelming globalisation trend, there are also two other major transformation need to be noticed.

(2) Post-Fordism’s Flexible Production

The changes or partial changes of production methods from Fordism to post-Fordism also has had a role to play in the growing sensitivity of capital.

From a historical overview of industrial production, the Fordism mass production method after half century of growth has entered the age of diminishing returns due to the saturation of the mass production market and the decline of marginal profit. In contrast, the new economic growth encompassed by post-Fordism, is distinguished by flexibility in production, consumption, labour relations, and interfirm cooperation which contrasts markedly with the rigidity of Fordism (see Albertsen, 1988; Storper, 1989; Chen, 2003).

The central sectors of the production system no longer focus to the same degree as previously on the production of consumer durable goods. Rather, they consist of flexible production sectors represented by the selected high technology industries, revitalized craft specialty production, and producer and financial services. These ensembles are becoming increasingly central in the sense that they account for a steadily rising share of employment and economic output (Schoenberger, 1988; Sayer, 1989).

Although this flexibility in terms of labour, raw material supply and savings in transportation cost, it opens a wide window of locational opportunity for localities which may or may not have had previous historical experience of large-scale manufacturing activity (Scott, 1988). On the other hand, in some ways this development has narrowed down the locational opportunities (Scott and Storper, 1987). As many scholars argue, apart from the Fordism production preferences, flexible industries seek out alternative kinds of locational environments that value such criteria as 'local business climate' or 'milieu' which is a mixed socio-environmental condition conglomerated with capacious locational factors including but not limited to physical and social infrastructures, innovative policy, agglomeration economy, local collaborative inter-firm networks and embeddedness, creative environment, living conditions, eco-services, etc. (McCann and Sheppard, 2003; Badri, 2007; Li et al, 2018).

Hence, city governments are more than eager to compete the flexible growth opportunities. Concern for a favourable business climate has pushed urban governments to all kinds of measures (from wage-disciplining to public investments) in order to attract economic development, but in the process this concern has lessened

the cost of change of location to the enterprise (Harvey, 1990).

Consequently, in the research, this mode change of production should be understood as a particular capitalist backdrop that has magnified the importance of the territorial competitiveness at each place. Details on this matter will be discussed later in 3.4.3.

(3) The Cultural Consciousness of Post Modernism

In parallel with the flexible production of post-Fordism, the social and cultural consciousness of capitalism exhibits a conspicuous inclination toward postmodernism⁶ and consumption driven.

Particularly, Postmodernism has strengthened the logic of consumer capitalism, it is a reflection of late capitalism in culture and society of the subtler middle-class demand which indicates the gradual quantitative cumulation triggering the qualitative change of the progression of capitalism (Bell 1976; 2011).

Hence, the siege of postmodern culture has concomitantly pushed an acceleration of commodities and services on the consumption side. In this context, Harvey (1989, p. 285) underlines the acceleration of consumption:

‘Of the many developments in the arena of consumption, two stand out as being of particular importance. The mobilization of fashion in mass (as opposed to elite) markets provided a means to accelerate the pace of consumption not only in clothing, ornament, and decoration but also across a wide swathe of life-styles and recreational activities (leisure and sporting habits, pop music styles, video and children's games, and the like). A second trend was a shift away from the consumption of goods and into the consumption of services - not only personal, business, educational, and health

⁶ The connotation of postmodernism in this research is delimited to refer to the tendency of cultural aesthetics and societal lifestyle from unity, standardisation, order, efficiency and eternity toward differentiation, diversification, complex, novelty, historical experience and temporality (see details on extensive works, for example, Jameson, 1985 & 1991; Rosenau, 1991; Allmendinger, 2002; Spretnak, 2012).

services, but also into entertainments, spectacles, happenings, and distractions. The 'lifetime' of such services (a visit to a museum, going to a rock concert or movie, attending lectures or health clubs), though hard to estimate, is far shorter than that of an automobile or washing machine. If there are limits to the accumulation and turnover of physical goods (even counting the famous six thousand pairs of shoes of Imelda Marcos), then it makes sense for capitalists to turn to the provision of very ephemeral services in consumption. This quest may lie at the root of the rapid capitalist penetration, noted by Mandel and Jameson of many sectors of cultural production from the mid-1960s onwards.'

As Harvey notes, the manipulation of fashions for markets, once limited to very few items like clothing but increasingly expanding to more kinds of consumer goods, such as games, music styles, and films, which has led to commodities with very short lifespans. Likewise, various forms of entertainment and services have become more ephemeral, such as concerts, spectacles, happenings, and exhibitions or health cares. All consumption items have a much-shortened life span in comparison with conventional durable goods supplied in the 'used to be' mass market under Fordism mass production. Hence, Scott (2004) goes on to comment that with the increasing commercialisation of culture, a common feature of contemporary capitalism is to produce aesthetics and symbols, rather than material and content. Thus, postmodern cultural inclination and consumerism might be considered as the cultural clothing of advanced capitalism (Hall and Hubbard, 1996) in a way that the capitalism has colonised the culture (Dear, 1995).

On this account, Harvey (1989a) has proclaimed that given the prevalent postmodern tendency, urban space itself has become a consumer good for cultural and aesthetic consumption in the operation of urban entrepreneurialism:

'It is at this point that we can identify an albeit subterranean but nonetheless vital connection between the rise of urban entrepreneurialism and the postmodern penchant for design of urban fragments rather than comprehensive urban planning, for ephemerality and eclecticism of fashion and style rather than the search for enduring

values, for quotation and fiction rather than invention and function, and, finally, for medium over message and image over substance' (pp. 12-3).

In much the similar vein, Zukin (1995; 1998) states that the new urban symbolic economy has been merged by the increasing interdependence between economy and culture whereby cultures are constantly negotiated in the urban spaces of tourism, media and entertainment. Li (2015) thereby identifies the post-industry urban economy and the people it related, noting that the urban industrial structure has shifted to service and creative industries with the main employment sectors being increasingly replaced by finance, consulting, design and research. These highly educated and professional employees, such as bankers, lawyers, developers, engineers, artists, not only value career development but also value their lifestyle. Therefore, attracting these talents requires cities to provide diverse culture, entertainment, and facilities as well as characteristic space for them to enjoy and consume. Dear and Flusty (1998) raise the concept of 'postmodern urbanism' as a comprehensive appearance of decentralising urban development. Like they state, '*While not truly a random process, it is evident that the traditional, centre-driven agglomeration economies that have guided urban development in the past no longer apply. Conventional city form, Chicago-style, is sacrificed in favour of a non-contiguous collage of parcelised, consumption-oriented landscapes devoid of conventional centres (pp. 66).*' Dear and Flusty then claims that grasping the alternative Los Angeles model needs several fundamental underpinnings consisting of postmodern conscious, edge city, privatopia, cultures of hetero-polis, city as theme park, post-Fordist regimes of accumulation and regulation, fortified city, interdictory space, ubiquitous social polarization, globalization and politics of nature. They conclude that the postmodern urbanism was most prominently distinguished by a centreless urban form termed 'keno capitalism', which was regarded as the outcome of exogenous investment processes inherent to flexism.

In the research, this mode change on consumption should be understood as the capitalist backdrop that carries a foreshadowing of what is to follow later on in the placemaking towards image construction (see 3.4.2).

3.2.2 State Rescaling

The territorialisation of capital is a double-edged process of de-territorialisation and re-territorialisation (Brenner, 1999), which represents the explosion occurrence in the capitalism development of implosion-explosion (Brenner, 2014). As discussed in section 3.2.1, in the current historical process of capitalist development, the so-called time-space compression constituted by the transitional confluence towards globalisation, post-Fordism, and post-modernism has intensified the phenomenon of de-territorialisation so that the capital accumulation is increasingly tending to separate away from any given country and urban space.

Meanwhile, the state rescaling (as well as the urban rescaling, see 1.22) is a reaction with time-space compression. Hence, the state, as one of the major territorial organisations, shaped by the logic of capital circulation and accumulation, in turn shapes the conditions and circumstances of capital accumulation at later points in time and space.

In the face of this unprecedented capitalist change, the state found the dysfunction of Keynesian intervention that dominated state regulation since after World War II. The governance of Western countries began to move one step forward in the spectrum of social egalitarianism - utilitarian liberalism (see Smith, 1994) at which point the reform from spatial Keynesianism⁷ to neoliberalism (or Thatcher-Reaganism) was generally initiated. As the state deregulated the market, there has been a wide range of privatisation of firms and public services and decentralisation in central-state relation particularly accompanied by the gradual reduction of financial support from the central government for local expenditure (Leitner and Sheppard, 1998).

Thereafter, the *central government emphasised localism* (Duncan and Goodwin 1989) can be used to describe the complicated rescaling process. It does not mean an end to

⁷ The spatial-Keynesianism is a nationalized, territorially uniform configuration of state space which established that state administrative arrangements were centralized and standardized; urban policies were subordinated to national regulatory imperatives; urban economies were subsumed within national spatial divisions of labour; and inherited territorial inequalities were alleviated through nationally redistributive spatial policies (Brenner, 2004).

the state's role; instead, on the one hand the state performs actively to force the localities to take the responsibility of improving the economy of the whole country while on the other hand, withdrawing its power from local affairs and letting the local authorities have greater autonomy.

In this sense, economic academia has invented the term of '*fiscal federalism*' to explain the rationality of central-local decentralisation (see Oates, 1972; 1999) – that is, due to information (a)symmetry and (dis-)incentives, the central government and local governments have their own advantages in the supply of public goods. In order to maximise the social benefits of public goods, it is necessary to refine the division of fiscal functions (expenditure and revenue) allocated between different vertical layers of the administration.

Starting from the original definition of state spatial selectivity (Jessop, 1990; Jones, 1997), Brenner examines (2004a; 2004b) the state's differential distribution of abilities to promote competitiveness across scales and territories⁸. As he explained:

'Such policies were articulated through a broad range of state spatial projects and state spatial strategies by national, regional, and local state institutions designed (a) to promote urban regions rather than national economies as the most essential geographical targets for economic development initiatives, and (b) to customize the institutional infrastructure of urban governance according to place specific political-economic conditions' (Brenner, 2004a, p. 255).'

Relating to scalar dimension of state spatial selectivity, Brenner (2009) refers to this new configuration of a state as a '*Rescaled Competition State Regime*' in which the urban scale is strategically selected by the state as a *new state space* to boost growth that the statehood has been being multi-layered due to the upward rescaling to supernational structure such as EU and downward rescaling to subnational level.

⁸ See Brenner's (2004a) diagrammatic conceptualisation of the parameters for the evolution of state spatial selectivity at scalar dimension and territorial dimension on p.97.

More importantly, he stresses state spatial selectivity at territorial dimension, particularly under the historical phase of urban entrepreneurialism, noting the place-specific selectivity of state served as an spatial mechanism through which on one hand the patchy, differentiated, or uneven administrative geographies with customized, area-specific institutional arrangements, are established in specific places or geographic zones – the so-called state spatial project at territorial dimension; on the other hand, the socioeconomic assets, major infrastructural investments, and public resources at national, regional, and local levels have been simultaneously designated or motivated by policies into strategic locations – the so called state spatial strategies at territorial dimension (Brenner, 2004a).

In this sense, it seems inevitable that the particular channelling of state capacities into a few strategic locations for entrepreneurial growth at local scale would greatly increase territorial polarisation across countries because it produces selective enhancement of territorial competitiveness at the expense of neighbouring areas within the same region. Given these concerns, Brenner (2004a) makes the justification of the entrepreneurial-oriented state spatial selectivity which may produce growth poles and consequential territorial polarisation:

(a) In neoliberalised political systems, the steady national economic growth will be secured under the robust contention that places and regions are forced to compete for their market positions;

(b) Intra-national territorial polarisation is viewed as an unavoidable consequence of global economic integration and therefore as an unsatisfactory but necessary side-effect of political initiatives to maintain national economic competitiveness as a whole; and

(c) Both within and beyond the city-regions, the trickle-down effect will eventually heal any uppermost adverse political-economic consequences that erupted from the territorial polarisation despite those growth poles of agglomeration are somewhat global financial enclaves that are likely delinked from adjacent less industrial and other marginalised spaces within the region and country (Graham and Marvin, 2002).

Hence, different developmental capacities have been largely granted to localities in a manner that empowers some places over others. The state picks up these prioritised places which has been judged as having the most potential and strategic advantages, and constantly increases increasing the comparative advantages of such places. Local agencies compete with each other using powers both endowed and circumscribed by the state structure.

Hence, '*Uneven geographic development is being established as intentional, rather than merely incidental*' (Peck, 2002, p. 356) by the state spatial selectivity tailored for urban entrepreneurialism.

Additionally, in view of the differences in the capabilities of the Western and Chinese states, that the latter holds more power to influence urban development, Chen Zhang and Li (2017) note that state spatial selectivity in China could be more appropriately divided into (a) spatial organization of state power, (b) spatial strategy and policy of state, and (c) spatial allocation of national resources. However, Ma and Tang (2019) suggest that the state spatial strategy defined by Brenner has already involved the spatial allocation of national resources which explains why Li, Wu and Huang (2015) stay with the original framework of state spatial project and state spatial strategy to analyse urban and regional restructuring issues in China.

3.2.3 Local Entrepreneurial Steering Structure: The Regime Politics of Pro-Growth

As the state has to re-adjust itself with a state rescaling process in which the urban scale was selected to resolve the regulatory failures of spatial Keynesianism and unleash new growth potentials of the state within major urban regions (Leitner and Sheppard, 1998), city governments accordingly have undergone structural changes that were motivated to behave dynamically, aiming at '*filling fiscal and regulatory voids left by national rescaling*' (Lauermann, 2018, p. 206). Hall and Hubbard (1996) recognise that the defining features of urban entrepreneurialism is that local government shifts from local welfare providers to an outward-looking stance aimed at cultivating and encouraging

economic growth in which the local state, as public sector, increasingly has characteristics that are originally exclusive to the private sector, such as ‘risk-taking, inventiveness, promotion and profit motivation’ (Hall and Hubbard, 1996, p. 153).

In the literature, the urban regime theory is normally introduced as the entry point to explain the local political basis that occurs under collapse of the Ford-Keynesian regime. According to Stone (1989), urban regime represents ‘*the informal arrangements by which public bodies and private interests function together in order to be able to make and carry out governing decisions*’ (p. 23). Central to this perspective is the notion that urban governments do not need to exert total power over all the city’s population to act effectively but only need to get enough capacity to act. The local fiscal strictures and neo-liberalisation create a ground where public officials and business leaders are most likely to find ‘congruent interests’ where political leaders articulate re-election and raise economic support from corporations to act while business leaders get political support for ‘private accumulation’ (Davies, 2017). The local governments recognise that cooperating with private interest groups is the key to getting enough capacity to act.

Thus, the local government is in alliance with the landed elite, including landowners, developers and rentiers, to form the classic ‘growth machine’ politics where the land resource is regarded as the basis of place and the pursuit of exchange value of land replaces the use value (Molotch, 1976; Logan and Molotch, 1987; Farahani, 2017). An alternative form may be an alliance with a variety of local boosterism-economic interests represented by the local chamber of commerce, some cabal of local bankers, utility operators, industrialists and merchants to form ‘immobility communities’ in order to channel ‘the mobilities’ into their particular city (Cox and Mair, 1988).

Hence, regardless of political leanings, local governments gain the power to gear entrepreneurialism in alliance with private interests. Typical types include neoliberal coalitions with concerns to grant subsidies to private economic activities; neo-corporatist coalitions which are inclined to be cooperative with building networks; and neo-statist coalitions that may try to maintain the state’s role to override class-based coalitions (see Gough 2002). Yet, despite the profound differences in ideologies, leaders’ personalities and extant institutional configurations, the coalition politics

likewise plays a central role in facilitating a significant erosion of the urban managerialism replaced by entrepreneurial place making.

Then, the commonality of pro-growth coalitions represented by the public-private partnerships or state 'quangoization' results in institutional fragmentation of statehood, thus constraining the capacity of state institutions at various spatial scales to address many of the dysfunctional side-effects induced by place making. This is because many of the state agencies and quasi-governmental bodies are dominated by the coalition politics with elected and non-elected bureaucrats, developers, businessmen and paid advisers giving their remit to provide only streamlined local delivery of particular services and leaving other social issues with nothing more than lip service, or to solve particular development problems rather than others, and is likely to be short-termism in that they pledge to achieve a solid policy result in a limited timespan (Swyngedouw, Moulaert, and Rodriguez 2002). As Harvey (1989a, p. 7) argues:

'...the entrepreneurialism focuses much more closely on the political economy of place rather than of territory. By the latter, I mean the kinds of economic projects (housing, education, etc.) that are designed primarily to improve conditions of living or working within a particular jurisdiction. The construction of place (a new civic centre, an industrial park) or the enhancement of conditions within a place (intervention, for example, in local labour markets by re-training schemes or downward pressure on local wages), on the other hand, can have impacts either smaller or greater than the specific territory within which such projects happen to be located.'

In this sense, although the lack of political accountability may enable more effective implementation of speculative place making in place, it systematically undermines their ability to address broader social needs in collective consumption, environment and community cohesion that benefits overall urban populations of all territory.

3.2.4 Options for Local Entrepreneurial Manoeuvre

Harvey (1989a) proposed that there are four potential options of 'local entrepreneurial manoeuvre'. These potential options are not mutually exclusive as it is the combination of them that leads to the rapid changeover at local scale, and the fortunes for the local

state to choose between four options depends upon the natural, human, locational and political conditions with which the city can work:

- (a) competing within the international division of labour for production and services;
- (b) improving its competitive position with respect to the regional spatial division of consumption;
- (c) getting higher control and command functions in key areas including finance, administration and media; and
- (d) acquiring competitive edge with respect to secure redistributions of surpluses through central and regional state.

From the perspective of economics, Zhang and Zhang (2014) commented that Harvey's four options embody three emphases: (a) government intervention in making infrastructure investment, building resilient investment and financing system, stimulating technological innovation, and distributing state transfer payments; (b) the increase of high-quality labour; and (c) the externalities brought about by the resource sharing of the agglomeration economy.

Jessop and Sum (2000) identify five analytically distinct but perhaps empirically overlapping fields of urban entrepreneurialism that in fact repeat Harvey's four options, but with two unique perspectives offered:

Urban entrepreneurialism manoeuvre is bound to create new urban place or space for producing, servicing, working, consuming, living, etc. *'Recent examples include technopoles, intelligent cities, cross-border cities, multicultural cities and cities organised around integrated transport and sustainable development'* (Jessop and Sum, 2000, p. 2290).

Urban entrepreneurialism manoeuvre is also bound to refigure and alter places within a system of urban hierarchy. *'Examples include the development of a world or global*

city position, regional gateways, hubs, cross-border regions and 'virtual regions' based on interregional co-operation among non-contiguous spaces' (Jessop and Sum, 2000, p. 2290).

To achieve this, the local state needs to carry out what Schumpeter (1934) defined as 'entrepreneurship' through entrepreneurial strategies, fashions and narratives to improve favourable supply side conditions and comparative advantages (Jessop, 1998; Jessop and Sum, 2000).

In regard to the space of flows in terms of both 'frictionless' flows and more concrete 'frictional' flows, Anttiroiko (2014) believes that the manoeuvre of urban entrepreneurialism is to attract them into places in which four categories of flows are intertwined in a complex way:

(a) flows related to consumption for immediate experience or condition improvement, for example leisure, adventure, relaxation and healing;

(b) flows related to consumption for personal development and capacity building, such as education and training;

(c) flows related to production-oriented industrial location decisions, such as the relocation of firms; and

(d) flows related to pure monetary investments, transactions and funds in which money flows to the companies or projects operating in the city.

The place making, in conformity of urban entrepreneurialism, does not have an end as inter-locale competition continuously exist. It will always repeat itself. In other words, the increased revenue is expected to be spent on the next round of place making so as to enhance, or at least maintain, local competitiveness and get further speculative return (Harvey, 1989a; Hall and Hubbard, 1996).

In this vein, discussions extend to what determine the winners of entrepreneurialism

over other places. Leitner and Sheppard (1998) claim that most urban entrepreneurial successes that socio-economically relevant can be attributed to three decisive dimensions: historical geographical trajectories, embeddedness and political favouritism. As they contend, while the historical geographical trajectories highlights the evolving historical and geo-positional opportunities within the broader political and economic system that creates uniqueness in the ability of individual places/locations to respond to economic and political restructuring, the embeddedness related to the social system of production, that is, a set of national and regional institution, regulation, tradition and norms that condition the indigenous features possible outcome of local entrepreneurial initiatives. And the political favouritism is frequently exercised by higher levels of the state favouring some cities at the expense of others, either deliberately though spatially targeted policies or as the unintentional result of sectoral policies. In addition to that, some scholars also mention the personal charisma of local leaders who can (not) skilfully promote economic development formally and informally and should also be regarded as an independent decisive dimension that helps certain places get ahead in terms of entrepreneurial growth (see Qian and Stiglitz, 1996; Howell, 2005).

Furthermore, it is important to notice that the urban entrepreneurialism indicates a variety of typologies. As Phelps and Miao (2020) state, local state entrepreneurialism can be ‘new urban managerialism’ when there is a balance between pro-growth and welfare provision; local state entrepreneurialism can be ‘urban diplomacy’ when innovative place making focus on the tourism and inward-investment which is flow based city branding; local state entrepreneurialism can be ‘urban intrapreneurialism’ when bold invention and innovation are conducted by well-resourced bureaucracies to the promote new services and industries; and eventually local state entrepreneurialism can be ‘urban speculation’ that implies the growth is heavily reliant on rent seeking from ‘unearned increments’ of land and property values. Therefore, local state entrepreneurialism in a real sense is more or less a combination of the above possible manoeuvres (Wu, 2020).

In similar mindset, Zhou (2003) classified the local entrepreneurial state as three grades, namely progressive local government, protective local government and pillage local

government. While the progressive local government has attracted a large number of economic resources through the construction of local soft environment such as institutional innovation and technological innovation, the protective local governments have to act in a way of exclusive market protectionism in order to ensure the sufficiency of fiscal revenue. Most unfortunately, the pillage local government are basically unable to drive economic development but must find ways to maintain daily expenses which force them to ask local residents and companies for money, such as increasing taxes and fares. Qiu (2017) simply believes that local entrepreneurial growth depends on either 'innovation driven' - indicating the way of local government promoting economic growth has gradually shifted to innovation driven, or 'factor driven' - meaning the major way of local government promoting economic growth is still in a status of relying on essential productive factors.

Although all the above-mentioned types of entrepreneurialism can bring economic benefits to local governments, they seem to represent disparities from the perspective of social benefits. For this matter, Keating and Loughlin (2013) categorise entrepreneurial growth into 'vicious' or 'virtuous' cycles depending on whether it is 'strictly economic' or has 'other objectives'. For the vicious circle, growth is narrowly defined with the features of socially divisive, cultural destructive and the environmental neglected. In contrast, what they recommend is to redirect place making within virtuous circles where the focus on economic development is balanced with concerns on social cohesion without resources being channelled away from social programmes.

In addition to the above debates, comments have been given to add on what is omitted in the conceptualisation of urban entrepreneurialism. Hall and Hubbard (1996) pointed out that in many ways the selling of the city to pursue profit in practice is as old as the city itself to a lesser or greater extent. This claim has resonated with Wards' (1998) holistic review of place making history in Britain and North America. Despite the paramount urban entrepreneurialism marked contemporary urban governance a sharp difference from previous version, the subsequent manoeuvre should be comprehended in non-absolute terms. In regard of contingency, Yu and Zhu (2009) find that urban entrepreneurialism cannot be accurately understood only from the general mode change and the state top-down effect that the importance of historical and local contingencies

should be stressed. So, they believed understanding urban entrepreneurialism in specific places must be also investigated in considering bottom-up situation case by case.

3.3 Chinese Circumstances

3.3.1 State Rescaling in China

In China, a similar trend of state change has also taken place though applicable debate remains on whether neoliberalism should be adopted as an appropriate perspective to China (see Ong, 2007 and the adoption by He and Wu, 2009, and Wu, 2010). Generally speaking, in order to recover from the central and local financial catastrophe of state-led socialist development provoked by Mao's Cultural Revolution and take part in globalisation (Chien 2008), since the 1978 Deng reforms and opening-up, the state has changed from a socialist planned economy. This was followed by a serial regulatory and administrative resetting, mainly focusing on marketisation, fiscal decentralisation, political devolution as well as a series of reforms concerning the paid use of land, the household registration system, housing supply and cadre evaluation.

Against this backdrop, entrepreneurial governance has been largely promoted at the local level. The local state has become increasingly speculative in the use of their expanded powers to generate more local gross domestic product (GDP), accommodate inward investment for mitigating local financial burdens and facilitate promotions for Party members (Jin et al., 2005). After some enthusiastic attempts by rural cadres to develop township and village enterprises (TVEs), known as 'local state corporatism' in 1980s (Oi, 1992), almost all levels of local governments in China turned to encouraging various types of exogenous growth (Walder, 1995). The role of the state moved downward to the local level as China's economic accumulation strategy shifted from the traditional work-unit system to the urban system (Wu, 2003).

With respect to urban entrepreneurship in China. Yin, Zhang and Luo (2006) and Kang (2006) have summarised the forces that seem to be at work in terms of external and internal. Globalisation was seen as the external force while marketisation and

devolution are seen as the internal forces. When combined, they have effectively led the significant local entrepreneurial tendencies. Wu (2018) notes that it is the structural and behavioural reasons that have occurred since the state rescaling that drive local entrepreneurial growth. The behavioural explanation stresses ‘GDP-ism’ or the ‘GDP tournament’, emphasising that local political leaders compete over cadre performance evaluation for GDP indicators set by the central (upper level) government in order to gain career promotions. The structural explanation stresses that due to the particular institutional realignment that has occurred (e.g., tax-sharing and land system reform), local governments have been faced with an increasing gap between annual income and public expenditure which they must be fill locally.

3.3.2 Political Economic Distinction of China

It should be recognised that the political economic backdrop of the emergent urban entrepreneurialism in China and in the Western developed nations shares fundamental similarities. Both are facing accelerating globalisation while the absolute control of the state has been weakened compared with the past. With the deepening of decentralisation and market-oriented reform of the state, the central government’s intervention in local economic activities and financial support to local governments have lessened (Zhang and Tian, 2014).

However, the urban entrepreneurialism in China is distinctive in two major political and economic ways. The first is the different development stage of domestic accumulation between China and Western nations. Zhang and Tian (2014) argue that the Western developed nations have already completed industrialisation and urbanisation, and so the emergence of urban entrepreneurialism predominately serves to deal with the transition of the social production-consumption mode from Fordism to post-Fordism (post-modernism). China, on the other hand, is in the middle stage of rapid industrialisation and urbanisation, and so the task of urban entrepreneurialism is more complex and changeable in addressing the production-consumption of both

Fordism and post-Fordism (post-modernism)⁹.

It can also be said that the different weighting between the state and the market constitutes the other significant political and economic distinction of urban entrepreneurialism in China.

Chien and Wu (2011) suggest that Chinese urban entrepreneurialism presents a hybrid of the developmental state and urban entrepreneurialism. The Chinese state rationale to change is different. *‘In the West, during the post-Fordist and post-Keynesian transition, the state was forced to retreat because of neoliberal and market pressures. On the contrary, many market-preserved and business-friendly policies in China since the 1980s should be regarded as part of the gradual reforms undertaken to fix Mao’s inefficient and ineffective centrally planned direct-resource allocation. China’s entrepreneurial state is able to more easily shift its attitude at different stages if necessary - from market friendly to market regulated [restrained] - than its Western counterparts (p. 5).’*

Second, the political operational system of China is different. While the Western urban entrepreneurialism generally takes place in liberal democracies where the local vote-based elections are highly institutionalised, China’s administration is run by the strong party-state leadership at all spatial scales. Although economic decision-making in China has been decentralised to the localities, the political system always remains centralised and the promotion of cadres is based on inner party evaluations of the jurisdictional ruling performance.

⁹ However, some the literature on urban entrepreneurialism concerning promoting consumer tourism (for example, the case study on commodification of Lijiang old town (Su, 2015)) and emerging high-tech industries (for example, the case study on the Sci-tech City Corridor in Hangzhou (Miao and Phelps, 2019)) seem to suggest that China's domestic capital accumulation has increasingly developed to a new phase since 2010, showing similar characteristics of post-Fordism and post-modernism.

For this matter, the existence of administrative hierarchies¹⁰, from the vertical perspective, has made the superior territorial units easily to prescribe their subordinate territorial units through a territorial hierarchical system. For instance, Guo (2020) believes that on the one hand each local government has been indeed actively motivated to stimulate the economic development by decentralisation of decision-making and opening the market, and on the other hand, the authoritarian hierarchical state apparatus, i.e., the top-down administrative system and the centralized regulation tradition, have created a hotbed for the upper-levels to intervene in lower level development.

Third, the land ownership of China is also different. As they note, in contrast with the West, the majority of land is owned privately, and the private property rights are constitutionally protected. In China, private property rights are against the core of Communist values so that land can be seen as a decentralized territorial asset manipulated by the local state that is fundamentally under the centralized and hierarchical control of the state.

It can be seen that the outstanding feature of Chinese urban entrepreneurship is that the state (at various levels of government) always exists as a very dominant power. To a large extent, due to different political heritages, the state apparatus in China is not as weak as that in the West, where there is overwhelming reliance on the market players. In other words, although the central Chinese state has given way in the rescaling process, it still has a far more important role to play than that of Western countries as it continues to hold chief control over the market and resources.

In this sense, the gradualism of China's neoliberal reform and the preservation of socialist centralised control legacy are two unique state features in urban entrepreneurialism that preserve state influence (Wu, 2016a). The dynamics of China's

¹⁰ China's administrative hierarchies across places refer to a hierarchical setting for the exercise of governmental competence and steering of territorial space which by law are divided into five levels: national, provincial, municipal, county and town (Zhang and Wu, 2006; Ngok and Zhu, 2007).

emergent urban entrepreneurialism can be appropriately understood as a state orchestrated rescaling process (Wu, 2016b). More precisely, as Wu (2018) argues latterly, the key parameters of ‘state entrepreneurialism’ in China as a governance form has combined ‘*planning centrality and market instruments*’ that reconcile these two seemingly contradictory measures coherently in the political economic architecture of post-reform China, indicating the centrality of government bureaucracies within ‘regulatory capitalism’. Therefore, it seems that what China's urban entrepreneurialism embodies is positioning the state’s planning goals at the core whilst the market is only a tool to achieve its goals.

3.3.3 The Characters of Local Regime Politics in China - Local Governmental Pro-Growth Coalition

The aforementioned literature in 3.2.2 suggests that the essence of regime theory is whether the government can get enough ability to act. In the case of China, rather than being in alliance with civic boosters such as the chamber of commerce or business associations, local states in China have well-resourced bureaucracies and usually have sizeable abilities to propel policy, a hybrid regime model based on the local developmental state rather than the Western urban regime model where public bodies and private interests function together (Chien, and Wu, 2011).

Therefore, China’s urban regime is more about a form alliance among the three tiers local governments, namely municipal, district, and town, to underpin their monolithic interests which should be considered as the real boosters to promote economic growth as provincial governments are not directly in charge but have a relatively neutral role (Wang, Tian and Li, 2012).

Chinese empirical research demonstrates that, in many cases, the multi-tiered local pro-growth coalition will set up types of place-based management committees which are supplemented by development corporations and urban investment corporations as representatives to implement their growth intentions (for recent examples, see Miao et al., 2019; Xie et al., 2020; Wu, Hu and Li, 2020).

Those management committees are a streamlined state agency owned or jointly owned by different tiers of governments geared toward (industrial) development and promotion that are described as the unity of ‘combined government and business’ (*zhengqi heyi*) (Wu and Phelps, 2011). Kang (2006) called those units as ‘super corporations’ and pointed out that the coalition-backed management committees are actually profit-making agencies but have administrative power and embody governmental authority.

Cartier (2015), after studying the development zones in Shanghai suburbs, found that the establishment of multi-tier governmental coalitional development agency made non-urban areas quickly enter the track of urbanisation, Therefore, he proposed the concept of ‘administrative urbanisation’, implying how the local governmental pro-growth coalition composed by municipal, district and town government could define the speed and quality of urbanisation and industrialisation especially in new urban districts.

3.3.4 Operational Propensities - Comprehensive Land Revenue Logic

Given the political economic distinctions, urban entrepreneurialism in China has indicated its own operational propensities when competing for the opportunities for production, consumption, service and living.

Land-centred entrepreneurialism is deeply rooted in China’s government-engineered institutional framework. With the reform of the tax sharing system, paid land use system and housing commercialization since the middle of 1990s, many scholars have realised that the unique feature of China’s urban entrepreneurialism is over reliant on the maximization of land revenue (see extensive explanations in Hsing, 2012; Lin, 2014; Jiang, Waley, & Gonzalez, 2016).

As He, Zhou and Huang (2016) remind, according to Chinese land management law, the state monopolised semi-open urban land markets stipulate that only after the land is changed from collective agricultural land to state-owned urban land can its use rights be traded in the market, and so it allows the state to fully control the primary land

transaction. Moreover, the state also allows the land conveyance fee to be under the control of municipal and county governments without turning it over to the central government. In this context, local governments are encouraged to get extra-budget revenues from land requisition from the farmers and the leasing of land use rights to commercial and industrial developers.

Furthermore, the use of land development in essence not only refers to the short-term income from land leasing, but also refers to converting the short-term income into long-term taxes from regular business activities. As Zhao, Liu and Zhuang (2009) state the local government first obtains the one-time income through the mode of low-cost agricultural land requisition - land transfer - obtaining a high conveyance fee. They then use land resources to generate a stream of long-time income in the long term from VATs and business taxes through the rolling development mode of investment attraction of industrial enterprises.

After the change in land ownership to state-owned, local governments can leverage huge amounts of land-mortgage loans from banks which become one of the main motives for local governments taking land from farmers which has been largely used for investment in urban construction of infrastructure and facilities. (Liu and Jiang, 2005).

Cao, Peng and Bi (2016) believe that it is these reasons that have led to the phenomenon of ‘development zone fever’. The construction of ‘economic development zones’ started in 1984, and then evolved a variety of forms of land expansion, such as university towns, science and technology cities, high-tech industrial parks, new towns, eco-cities, bonded zones and so on, which are all the variants of the land revenue paradigm [Ibid].

3.4 Major Analytical Axis: Critical Debates on Entrepreneurial Growth

While the local state entrepreneurialism proliferated across subnational scales, it has simultaneously engendered new political economic contentions. Arguably, scholars

have tried to decode them in line with three key analytical axes. Each perspective grants some valuable understandings on specifying the growth philosophy under urban entrepreneurialism:

(1) Axis of severe inter-locale competition: the local governments, in an attempt to catch the favour of capital, dash into place marketing *that leads to the volatility of earnings en masse* (see 3.4.1).

(2) Axis of place making towards image construction: the increasing attention to image construction of the local governments seems to push entrepreneurial growth into an edge of abyss (see 3.4.2).

(3) Axis of territorial competitiveness: the competitiveness of individual place become crucial throughout city-regional, regional and national scales (see 3.4.3).

3.4.1 Severe Inter-Locale Competition

Principally, it is crucial to notice that the local consequences brought by the growing mobility of capital under globalisation is not a neutral process, rather it has amplified the competition for industrial opportunities which the local state has to work in concert with and concurrently inescapably accelerate the trend. Like Peck and Tickell (2002) commented:

'The logic of interurban competition [. . .] turns cities into accomplices of their own subordination [. . .] The public subsidy of zero-sum competition at the inter-urban scale rests on the economic fallacy that every city can win, shored up by the political reality that no city can afford principled non-involvement in the game' (Peck and Tickell, 2002, p. 393).

In practice, those involved in territorial competition among local governments are closely tied to the proliferation of place marketing which is frequently associated with regulatory undercutting strategies to reduce the production and transportation costs through various direct or indirect subsidies such as tax breaks, exemptions, refunds and

incentives of land offerings as well as strategies for the construction of expensive infrastructures (see Dunford 1994; Cheshire and Gordon 1996; 1998).

Huang et al (2018) link regulatory undercutting to the prisoner's dilemma game. They explain that because local governments do not know each other's regulatory bottom line, they have to race to the bottom in order to win the competition to attract investment. That is to say, due to the paradox in decision analysis in which two local governments acting in their own self-interests, each tend to instantaneously provide various subsidies and repeatedly build infrastructure, which results in direct loss and waste.

Si et al (2013) suggest that regulatory undercutting among cities implies the mechanism of 'rent dissipation'. When a local government offers preferential incentives to an investor, other local governments will undoubtedly follow up and increase the incentives. After several negotiation rounds, more concessions from each competing local governments will be offered with the increase of time and opportunity costs of government. Then the investor will choose between cities until the final maximum benefit is obtained. This process leads to the rent dissipation of localities so that the local interests and the welfare of the local people have been eroded. The direct cause of rent dissipation lies in the fact that the investor has the dominant position in location selection and constantly forces local governments to give in by taking advantage of inter-locale competition.

Such mechanisms also mirror concerns about boundary mismatch (Cheshire and Gordon, 1996) between the boundaries of the administrative regions and those of the associated functional economic region in urban entrepreneurialism. Where the administrative boundaries cover a significantly smaller area than the reality of a larger functional economic region, both the permissible actions and the types of action which secure the highest payoff will be constrained. It also relevant to the 'administrative region economy' in Chinese urban entrepreneurialism, raised by Liu (Liu, 1996; 2004). They reveal the special regional economic phenomenon caused by the rigid restriction of administrative divisions: that is, under the transitional period from the traditional planned economic system to the socialist market economic system in China, the

regional economic landscape of ‘large and complete’ or ‘small and complete’¹¹ at all local levels was about to be produced due to the rigid constraints of administrative divisions. Such self-isolation of local economy has a negative impact on the overall regional economic development.

Furthermore, Yi, Liu and Tang (2014) specifically expound the spatial mismatch of production brought by the collusion of local governments and enterprises in the administrative regional economy. The local state only pays attention to how the maximum quantity of economic activities can be enticed and fit in its own administrative areas as long as they add to the local revenue and cadre promotion, regardless of whether the targeted enterprises are consistent with the local existing industrial clusters and whether those spatial expansion of industrial capacity is in efficient regional economic performance or not. This can lead to a case where enterprises lose their rationality in dealing with the distorted market and factor signals caused by various preferential policies of local governments, leading to the impulsive decision-making on production expansion. Therefore, they conclude that local subsidies on investors have hastened the industrial replication towards overcapacity in a way that distorted the structure of interregional industrial division in the emergence, evolution and development of industrial clusters that were spontaneously based on local comparative advantages.

Therefore, Deng, Liu and Xu (2019) criticised local government competition under economic decentralization with reference to the term of total factor productivity (TFP). They propose that the proactive investment attraction and preferential subsidies of local governments in general will directly stimulate regional total factor productivity at the beginning, but in the long run, it may lead to local protectionism, market segmentation, industrial isomorphism and repetition, and therefore reduced the total factor productivity.

3.4.2 Place Making towards Image Construction

¹¹ The ‘large and complete’ refers to the arrangement of full types of industrial activities within large jurisdiction; the ‘small and complete’ refers to the arrangement of full types of industrial activities within small jurisdiction.

Alongside severe inter-locale competition, current approaches to place making increasingly try to set budgets for image construction as a catalyst for luring multiple development opportunities under the trends that the capitalist aesthetics and lifestyle tend to be more postmodern and consumerism (see Paddison, 1993; Warnaby, 2009; Page and Connell, 2020).

(1) Stimulation of multi-facet economic gaining

Image construction is considered a panacea to stimulate rapid local economic transformation or growth. It primarily seeks to improve urban competitive position with respect to the spatial division of consumption that hopes to transform the former industrial and declining districts into ‘spectacular’ areas of (and for) consumption rather than production. As depicted by Harvey (1989a), the consumerist style of urbanisation after 1950 promoted an ever-broader basis for participation in mass consumption and while recession, unemployment, and the high cost of credit have rolled back that possibility for important layers in the population, there is still a lot of consumer power around much of which can be credit-fuelled. Therefore, the introduction of new urban settings in the form of entertaining postmodern style urban spectacles on a temporary or permanent basis, such as shopping malls, cultural centres, heritage parks, sports game, expo, festivals, marinas, exotic food palace, conference centres and hotels, are characteristically emerging in many cities, offering a concentration of tourist and consumer attractions and business communication services to secure new economic roles within region (Hall and Hubbard, 1996).

Image construction also closely targets the pursuit of property-led profit. In most cases, land is the most vendible place-related commodity for earnings. It is the concern of real estate that gave the local government the greatest *vigour in image construction*.

For instance, Ward (1998, p. 50) has clearly recognised that ‘...*more effort is likely to be expended marketing a place if there is something tangible associated with that place that can be directly exchanged for money... It is notable that in both Britain and North America place marketing has been most vigorous where sales of real estate are involved. Thus the selling of the frontier and early town promotion were essentially concerned with the commodification of land. The suburbs too were sold, at least by developers and*

building societies, as forms of real property. It is also apparent that regeneration agencies concerned with property development such as the UDCs, have been to the forefront in the selling of post-industrial cities.'

Ward's comment seems to suggest two interpretations. First, the image construction itself involves making land development projects - for example, the gentrification in historical blocks, residential areas, commercial areas and the building of new landmark landscapes in forms of shopping centres, concerts, exhibits, and gated communities, that is, high risk ventures which can directly turn land into sales income and rent. And more broadly, image construction, by beautifying the built-up environment of a place, can positively affect the land prices nearby, which can also potentially bring added value to real estate if they were going to sell or rent in the future.

In this sense, it seems that image construction is designed to gain benefit from capitalist land consumption-occupation consisting of a range of real estate-related developments such as malls, concert halls, exhibition spaces, science and technology parks, up-market office complexes and housing (Leitner and Sheppard, 1998).

To understand more broadly, image construction endeavours to reimage or reinvent the city through a set of fields in advertising, urban design, gentrification, mega-projects¹² and events which blatantly blend the past, present and future by reappropriating industrial legacy and converting into deindustrialised landscape. These repackaging actions commonly take advantage of locally-rooted culture, traditions, heritage and myths in an attempt to stress their uniqueness so as to replace their old image of industrial city in decline with post-industrial image full of economic, social and innovative vitality (see Short et al., 1993; Roberts and Schein, 1993, Hubbard, 1995; Bradley, Hall, and Harrison, 2002).

It has also been argued by Harvey (1989a) that apart from generating income and

¹² The early mega-projects were mainly related to the construction of various infrastructure, and now it especially refers to flagships that revolve around enhancing the image of the city, such as symbolic museums, stadiums, memorial plazas, large commercial shopping centres, etc (Orueta and Fainstein, 2008).

creating jobs in areas of seemingly service employment by spectacular events and projects, image construction also comes with the intention of exploiting the spin-off effect of enticing new industries. As he believes, the selling of the city as a location for activity depends heavily upon the creation of an attractive urban imagery. So, places which have been repacked by image construction strategies will appear *'as a dynamic go-getting city, ready to accommodate outside capital and to encourage the movement in of capital and of the 'right' people'* (Harvey, 1989, p. 14). Thus, the broader enhancement of urban imagery projects appears to play the role of 'loss leader' to pull in other forms of development even in the face of poor economic performance (Harvey, 1989a).

Similarly, Healey et al. (1992, p. 278) have comments that: *'Flagship development projects and promotional imagery were used vigorously to supplant the imagery of rustbelt cities and cloth cap citizens which, it was assumed, would inhibit inward investment by the private sector, with the lifestyle imagery of a globalised 'yuppified' middle class.'*

Smyth (1994, p. 21) also states: *'In essence, the flagship is acting as a large advertising hoarding for the area, the implied message being that this is the place for others to spend or invest.'* Therefore, Doucet (2007) has summarised that a flagship development's role in this re-imaging is to serve as the iconic image or landmark that is 'saleable and marketable'.

(2) Risks of failure to attract tourist/consumer

Scholars suggest that the flagship projects of image construction easily tend to be too homogeneous so that it is difficult to bring the expected economic return. Like Harvey (1989a, p. 12) notes,

'Many of the innovations and investments designed to make particular cities more attractive as cultural and consumer centres have quickly been imitated elsewhere, thus rendering any competitive advantage within a system of cities ephemeral.'

Therefore, it seems such innovative flagships frequently lack the innovativeness

inherently required in the pursuit of entrepreneurial growth. Moreover, Harvey's comment has been resonated by Cole's (2003, p. 194) writings on the paradox resulting from this kind of remorseless commodification of place:

'the more successful tourism promotional slogans, formulae and event formats have been rapaciously copied throughout the world... Promotional measures which were intended to deliver to innovative destinations unique selling propositions, emphasize their differences over rivals, and thereby attract greater visitor numbers have, in fact, been replicated so widely and closely that they have conspired to deny singularity, produce homogeneity in place, product and experience and, thereby, it is theorised, limit returns to initiators and imitators alike.'

By repeating innovations, both initiators and followers will end up with diminishing returns. Later, this leads to 'clone town Britain' according to Simms, Kjell and Potts (2005). They cite the examples of retail chains that undermined the uniqueness of most British cities and turn the city centre into homogeneous commercial replicas. According to the authors' survey, it has been found that 42 of the 103 towns in England, Scotland and Wales became clones with the trend rising despite the fact that some local authorities and town councils are using existing planning law to protect and enhance diversity and to turn back the tide of the clones which already exist. As the authors note:

'Real local shops have been replaced by swathes of identikit chain stores that seem to spread like economic weeds, making high streets up and down the country virtually indistinguishable from one another. Retail spaces once filled with a thriving mix of independent butchers, newsagents, tobacconists, pubs, bookshops, greengrocers and family-owned general stores are becoming filled with faceless supermarket retailers, fast-food chains, and global fashion outlets. Many town centres that have undergone substantial regeneration have lost their sense of place and the distinctive facades of their high streets under the march of the glass, steel, and concrete blandness of chain stores built for the demands of inflexible business models that provide the ideal degree of sterility to house a string of big, clone town retailers' (p. 1).

Rodriguez et al (2001) worry about the effect of franchises on clone town Britain. They

note that one of the more successful re-imagining campaigns across Europe - the Guggenheim Museum in Bilbao, stresses that if the Guggenheim was to be franchised and replicated in many other places, then the 'Guggenheim impact' would be lost as replication would diminish its originality and novelty.

In this vein, the terms 'clone cities' phenomenon (Law, 1992; 1993) or 'cookie-cutter effect' (Doucet, 2007) suggest that in urban entrepreneurialism, most flagships designed to boost tourism simply followed a mediocre formula duplicating previous seemingly successful developments in hopes of attracting more visitors. It appears that they seldom succeed in this effort.

Considering the above comments, Smith (2005) adds that tourist/consumers seem to have boredom feeling. He explains that flagships reimage the city image through the composition of two mechanisms: synecdoche and connotation. Synecdoche refers how urban space is constructed. Given the unbounded spread of large cities in an all-encompassing image, construction of images has to involve reducing the complexity of an urban area into simplified representation that encapsulates the whole city. Connotation refers to the meaning of influences produced by reimagining initiatives indicating the causal or arbitrary associations with indexical and symbolic signs of city image. Therefore, the author warns that tourists and consumers may become impervious to the *synecdochical and connotational effects* of the spectacular designs due to the overuse of iconic buildings (Smith, 2005).

As Harvey (1989a, p. 12) notes, the problems of overaccumulation and overinvestment in world trade centres, waterfront developments and post-modern shopping malls to which capitalism as a whole is so easily prone: '*how many successful convention centres, sports stadia, Disneyworlds, harbour places and spectacular shopping malls can there be?*' In real case, the over-malling of America vividly illustrates the 'crowding' phenomenon coined by Schumpeter (Harvey, 1989a). Evans (2005) explains that since there are simply too many places competing for too few visitors, high-end consumers, it is simply not possible for every city that wants a major international museum, attraction or flagship to have one.

Moreover, the decision to initiate appropriate types of flagship projects tends to follow political/bureaucratic judgements, or in other words, the instinct of local leaders in office rather than stick on a more evidence-based rationale. As Falk, (1986) suggested:

‘Of course market research and feasibility studies have their role to play, but ultimately assessing the potential of an area is an applied art rather than a science. It was intuition that made Baltimore go for an aquarium, for example, thus providing what was a unique attraction at the time, and one that reinforced the waterside image’ (Falk, 1986, p. 151).

It is for this instance that Cheshire and Gordon (1996) implied boosting an economy by image construction is not always necessarily very effective, but mere self-justification of a local agency:

‘The activity may be pure waste even at the local level, either because gains achieved by some local businesses/developers displace activity in others, or because it is totally misdirected in terms of the real demands of firms and is essentially fulfilling bureaucratic goals. If a territory establishes an agency to promote itself and encourage local economic development that agency has to justify itself. Advertising and promotion may be highly visible ways of spending budgets, justifying an agency's existence, and symbolising a commitment to deal with unemployment. But they are not necessarily very effective in terms of attracting mobile investment, still less in terms of improving the competitive success of local businesses, which tends to be the more critical factor’ (p. 25).

(3) Social control

Following on from the discussion on flagships, it should be noted that whereas image construction is primarily a way of generating instant economic returns, they also play a role in social control. Image construction can be used by the local state to ensure the continued stability of the social foundation at local scale.

A number of scholars (see Harvey, 1989a; Eisinger, 2000) have compared image construction to the Roman metonymic activity of ‘bread and circuses’. Their ideas

suggest that politicians can gain political power by simply giving citizens a base level of sustenance, and sporadically providing some costly but superficial exciting spectacles. Population will be immersed in their emotional moment, thereby ignoring the real problems. Dealing with social control in the Roman way, these authors almost unanimously imply that image construction has been adopted as an instrument to deliver pleasant painkiller that distracts the population from their daily hardships, taking attention away from real problems that many residents face such as the shrinkage of public expenditure, shortages of housing or environmental degradation by inciting them into immersive urban imagery [Ibid]. In this way, it strains the bonds between local state and the citizenry and skew the civic agenda to the detriment of fundamental municipal services.

Specifically, Doucet (2007) states that image construction first of all embodies some quality-of-life factors that can be enjoyed and admired by local residents, that come about as a result of many flagship projects that improve the urban spaces they interact with every day.

He goes on to note that image construction is in line with mass celebrations and giant spectacles which lead to a greater sense of civic pride:

'Hosting a large event, or launching a new flagship can generate feelings of success, and urban pride amongst the local population' (p. 13).

'Having new stadiums with professional sports teams, and top-class cultural facilities brought about by flagships will also serve to boost urban pride' (p. 7).

In a similar vein, Harvey (1989a) remarks that the production of an urban image function is to generate local support by generously granting mental benefits for the population to whom the suppression of self-presentation has been aggravating during modern city life. As he writes:

'It helps counteract the sense of alienation and anomie that Simmel long ago identified as such a problematic feature of modern city life. It particularly does so when

an urban terrain is opened for display, fashion and the 'presentation of self' in a surrounding of spectacle and play' (p. 14).

In this regard, he concludes on how the orchestrated production of an urban image creates a social solidarity and loyalty that is bound to specific places:

'[image construction] provide a mental refuge in a world that capital treats as more and more place-less. Urban entrepreneurialism here meshes with a search for local identity and, as such, opens up a range of mechanisms for social control' (p. 14).

From the above discussion, it is apparent that image construction acts as a very obvious way to improve the quality of daily life, increase civic pride, and to reduce the sense of anomie by self-presentation, convincing local people to support the local state's entrepreneurial discourse.

Moreover, Waitt's (2001) observation explains how the local state calculates the trade-off between the economic damage of social conflicts driven by class or ethnic feelings and the immediate cost of expensive image building projects that could cultivate the feeling of place belonging so as to replace the former.

'[it] legitimise[s] political projects that function primarily in the interests of the business and political elite, whilst creating and sustaining a local and/or national collective identity that undermines internal social divides along class or ethnic lines' (p. 254).

In this perspective, it may be said that the most imperceptible deliberation of the social control behind image construction is diluting the sense of class and ethics by punctuating the sense of place belonging.

3.4.3 Territorial Competitiveness

First of all, scholars try to use the dichotomy of comparative advantages and production factors to define territorial competitiveness. Drawing on principles of Ricardian

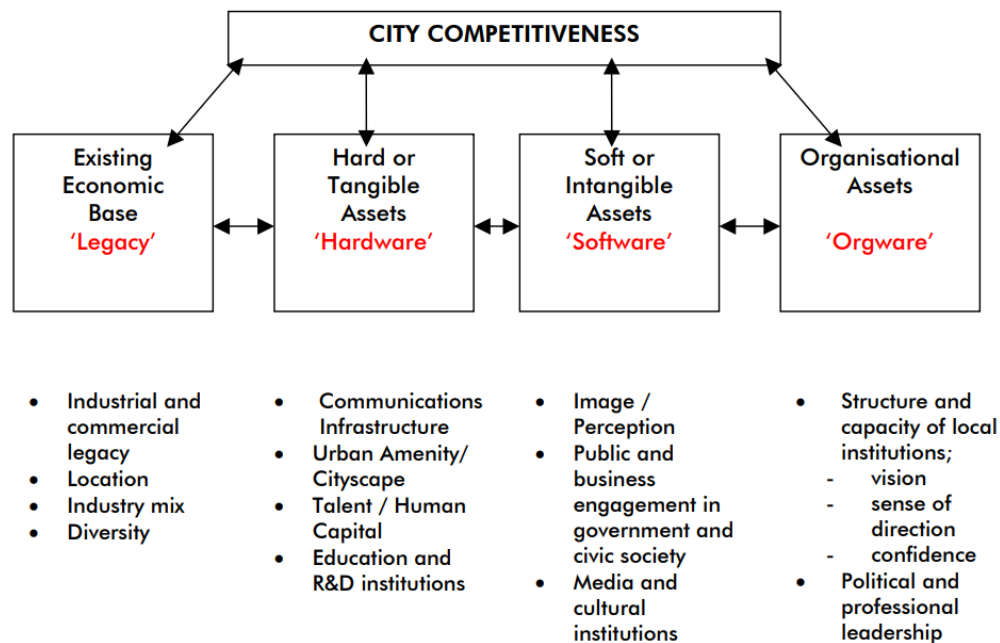
competition, Jessop (1998) thinks local competitiveness may fall into static competitive advantage and dynamic competitive advantage. He states that the static competitive advantage basically derives from the innate naturally occurring endowments of location, the quantitative labour force and natural resources, whilst the dynamic competitive advantage derives from the conditions that are socially created that can be transformed for economic advantage.

Jessop recognises the merit of such strategies which are geared towards attracting inward business activities, such as tax breaks, subsidies and regulatory reduction and/or simple, civic boosterism as a form of image construction, all of which fall into the category of the static competitive advantage. He recognises that simple marketing of the city can only be regarded as a tenuous entrepreneurial strategy that adds to static comparative advantages in the absence of a dynamic competitive advantage which is based on local milieu (of the type which normally characterizes the leading cities in urban hierarchies). However, this strategy of city marketing cannot be relied on entirely in order to attract investment (Jessop, 1998). In this sense, the classification of territorial competitiveness between static competitive advantage and dynamic comparative advantage seems also to be based on the criteria of real efficiency to compete with other locations for luring new types of development rather than simply sticking to the criteria on whether the local factors are naturally endowed or socially created.

In much similar way, Begg (1999) suggests that local comparative advantage in the competition for business activity involves either 'price' or 'non-price' production factors which are directly associated with the production efficiency of enterprises. For price factors, the local low production (e.g., land, labour costs and local taxes) and transportation costs exert a strong influence on the prices that companies have to charge to be financially viable. 'Non-price' factors are more diverse and may be perceived as the importance of the local 'environment', notably because it influences the willingness of mobile workers to locate in the city (in this sense the people-centric factors) and the external milieu, un-marketed influences on the productivity, innovativeness and dynamism of local businesses. In other words, it seems that static comparative advantage tends to fall into the category of 'price factor'; while dynamic comparative advantage tends to be classified as a 'non-price factor'.

Along these lines, Docherty et al (2004) analyses local competitiveness by classifying the ‘urban asset bundles’ of depicting how localities as the nodes competing for the exchange and processing of information and capital flows, and as places where people want to live, work and consume. The bundle of assets that compose local competitiveness has four types:

Figure 3.1 Urban Asset Bundles



(Source from Docherty et al., 2004)

Apart from the ‘legacy’ (which refers to the ‘existing economic base’), they list ‘hardware’ (that is tangible assets such as infrastructure and landscape), ‘software’ (that is intangible assets, such as city image, relationships and diversity) and ‘orgware’ (that is organisational assets including local institutions and leadership).

By the same token, Zhang (2011) argues that the competition methods of local governments in China can be divided into tax competition, infrastructure competition, institutional innovation competition, and human environment competition. And these four means of competition can be attributed to the competition of public goods. Hence, he insists that territorial competitiveness in essence is intrinsically related to the local

provision of (quasi-) public goods, consisting of the tangible (quasi-) public goods (urban built environment such as infrastructure, public amenities and ecological environment) and intangible (quasi-) public goods (various formal and informal institutional and policy environments). As they are public goods, so their supply in quantity and quality are fundamentally determined by state institutions.

3.5 Theoretical Challenge: Proposing a Hypercritical Linkage between Urban Entrepreneurialism and Ecological Modernisation

EMT's core understanding of ideological conviction that ecological modernisation will be successfully delivered sooner or later within capitalism development in its history is too metaphysical, grand and vague. Even if the assumption is correct in voice, it needs to be further interpreted in a more contextual and pragmatic way. Moreover, despite the literature's interpretation has layered ecological modernisation into three production aspects, there is still ambiguity in the arguments concerning the kind of constraints ecological modernisation might encounter in real settings when they are going to be implemented at local scale. Therefore, deeper casual explanation is needed.

It has been defined that ecological modernisation in essence refers to the ecological fix of capitalism promoted by the state under the general process of capital accumulation. Nevertheless, the author points out that relevant EMT discussions do not lay stress on the state form that promote this ecological modernisation process and the broader political economic backdrop that both engender such state form and has to deal with thereafter. As a matter of fact, each country is placed in its specific political economic trajectory and corresponding steering mode of state. The complex characteristics are conceptualised by the academia in various terminologies such as either entrepreneurialism, collectivism, globalism, religionism and Militarism.

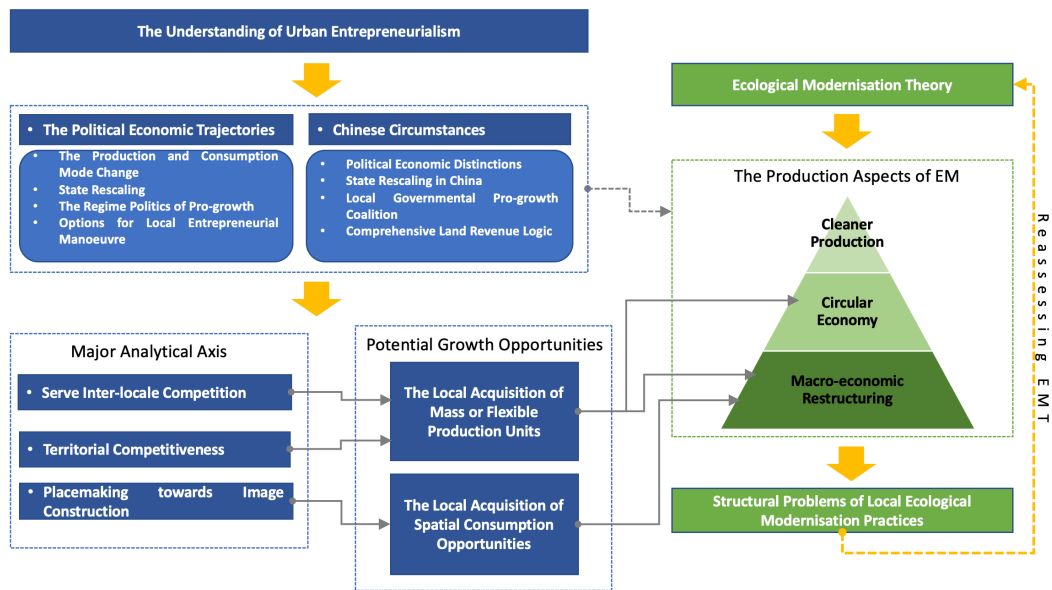
In this regard, to refine and advance the insufficient debates of EMT, this research tries to put ecological modernisation under the theoretical framework of urban entrepreneurialism. Through literature review in the Chapter 2 and 3, the author supposes that urban entrepreneurialism is the overarching political economic framework to which processes of ecological modernisation are subject. This is to say, the author tentatively assumes that the implementations of ecological modernisation are being conducted exactly in the mode of urban entrepreneurialism.

Significantly, relevant literature on urban entrepreneurialism has indicated that the

growth mode of urban entrepreneurialism is neutral and all inclusive. As long as a certain entrepreneurial steering can achieve local economic development, both traditional growth choices (e.g., the non-ecological ways) and transitional growth choices (e.g., the attempts of ecological modernisation) are incorporated. To put it simply, the local growth problems that are majorly concerned in the literature of urban entrepreneurialism may also be the key critical points to affect the realisation of the ecological modernisation practices (i.e., the various attempts on cleaner production, circular economy, and macro-economic restructuring). In particular, debates on territorial competition (see 3.4.1) and competitiveness (see 3.4.3) exposes the mechanism in attracting various production units whether mass or flexible. These diversified industrial production units in fact include the projects that constitute the downstream manufactures for the circular economy and for the macro-economic restructuring (industrial upgrading) emphasised by EMT. And debates on the placemaking towards image construction (see 3.4.2) refers to acquire spatial consumption opportunities. These projects are actually the important anchorages for the macro-economic restructuring (tertiary industry) emphasised by EMT.

Below is the author's analytical framework (Figure 3.2) that outlines the hypothetical relationship between urban entrepreneurship and ecological modernisation. Presumably, the process of ecological modernisation takes place under the overarching political economic trajectory of urban entrepreneurial growth mode.

Figure 3.2 Theoretical Framework for Analysis



(Source: Author)

Thus, after learning from literature review, the author has raised the revised research questions (see also 4.3.4):

1. Under urban entrepreneurialism, to what extent does the urban competition and competitiveness patterns shape the win and lose of local ecological modernisation of circular economy and industrial upgrading?
2. Under urban entrepreneurialism, how does the place making towards image construction fail to deliver the local ecological modernisation through macro-economic restructuring towards tertiary industry such as leisure tourism?

Based on the Q1 and Q2, the Q3 three has been proposed in a broader term,

3. How does the complex political-economic situation in the general capitalist trajectory of urban entrepreneurialism relate to the ecological modernisation at local places?

3.6 Conclusion

In short, this chapter has first reviewed the political and economic roots of urban entrepreneurialism. Given the time-space compression, local governments at sub-national scale are under external pressure to change, and in many cases, to achieve economic growth. Simultaneously, as a result of state rescaling, the power of the national state declined while the importance of local state has increased. Thus, city governments have been forced to switch to entrepreneurialism in order to find new and external sources for such economic growth to survive. As a result of such external pressure, urban entrepreneurialism, as adopted by the local state is consistent with the capitalist political economy and is designed to foster and maximise local growth which involves continuously competing with other places to lure external development resources (e.g., factories, commercial companies, talents, tourists, immigrants, state redistribution of funds and all forms of investment). By creating the new types of urban spaces, successful cities can become the hub of production, services, consumption and living, and possibly this is also accompanied by the improvement of its position in global-local urban networks.

The literature reviewed in this chapter also examined the Chinese variant of this phenomenon. The Chinese model displays at least two differences from that described in the literature, which was mainly concerned with Western countries. The first is because China is at a somewhat different stage of development given that the country is at the middle stage of industrialisation and urbanisation. The second distinction is the different weights, in terms of powers, between the central and local governments concerning how they can affect the market and growth as the central dominant power. In addition to these distinctions, the urban entrepreneurial actions of local governments in China differ from those in the West. The pursuit of revenue from land is deeply rooted in China's government-engineered institutional framework. Additionally, the multi-tier system of local government in China has been shown to strongly affect urban entrepreneurialism. However, the road of growth has not been without contention. Three Analytical Axis in literature were identified and reviewed in this research, including the severe inter-local competition, place making towards image construction,

and territorial competitiveness.

Furthermore, in the end of this chapter, a hypercritical linkage between urban entrepreneurialism and ecological modernisation has been raised which laid the theoretical framework for analysis in this research. The theoretical concepts and ideas reviewed in this chapter will be used to interpret the empirical findings of Manzhuang in an effort to answer the research questions and achieve the overall research aim.

Chapter 4. Methodology

4.1 Introduction

This chapter intends to discuss the methodology and the case study area in this research. Three dimensions of methodological examination are considered, specifically the philosophical thought, the case study-based research design including data collection and analysis, and the research ethics.

In section 4.2, critical realism is rationalised as the core epistemology of this research. Section 4.3 concerns the research design for the conduction of the fieldwork in the case study area while also explaining the reasons for the site selection. The case study approach accompanied by documentary analysis and in-depth interviews as the major way to access and collect the data is examined. Furthermore, the data processing and analysis is demonstrated. The major research questions are then proposed. Lastly, the ethical issues and coping strategies are detailed in section 4.4.

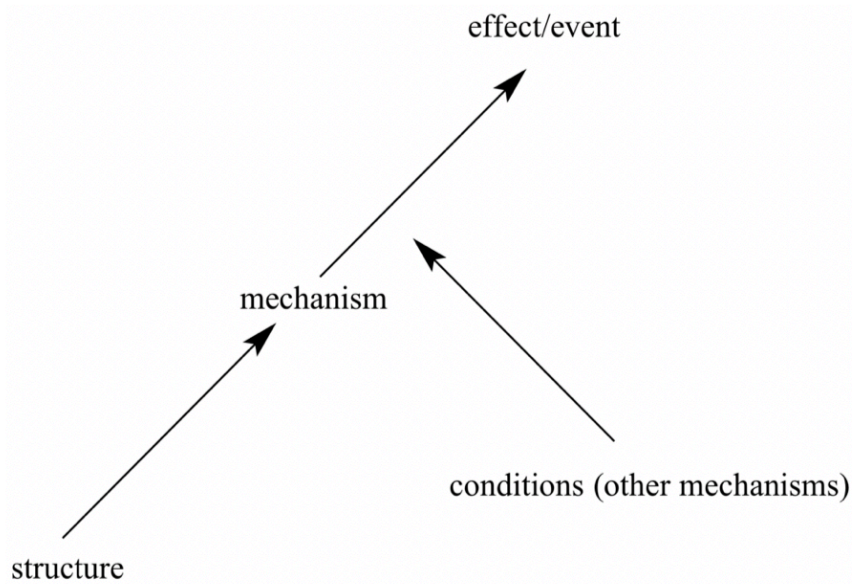
4.2 Ontological and Epistemological Considerations

Realism is defined as ‘the belief that there is a world existing independently of our knowledge of it’ (Sayer, 2000, p.2). As a branch of realism (May, 2011), critical realism claims itself to be a meta-theoretical position holding strong philosophical stances in line with ontological realism, epistemic relativism, judgmental rationality, and cautious ethical naturalism (Archer et al., 2016). Critical realism points out that social science is concerned with causation, structure, relation, mechanism, agency, and the things that lay behind social phenomena and their processes. According to Archer et al. (2016), a critical realist method of research might consider the subject in terms of three layers: the empirical data, the theories that we draw on to explain the empirical data, and the metatheories – the theory and philosophy behind our theories. This research can be layered into three levels: the level of empirical data collected from the fieldwork in Manzhuang Town in relation to the local ecological modernisation practices, the level of urban entrepreneurialism that is intended to use to explain the empirical findings, and the level of critical realism that is concerned with providing philosophically informed justifications for using the theory of urban entrepreneurialism.

To understand the local ecological modernisation under urban entrepreneurialism in China, critical realism forms the three substantial foundations of this research.

First of all, critical realism offers the philosophy required reveal the causation behind the structural dynamics in this research. According to Sayer (2000, p. 11), explaining a certain causal mechanism involves ‘discovering the nature of the structure or object which possesses that mechanism or power’ (Figure 4.1). In this research, the broader political economic socio-institutional structures under the particular trajectory of urban entrepreneurial growth have been regarded as fundamental to exploring the causation of the local ecological modernisation in Manzhuang.

Figure 4.1: Critical realist view of causation



(Source: Sayer, 2000, p. 15)

Moreover, critical realism incorporates the consideration of the context. In the social world. As Sayer (2000, p.15) puts it, the same causal mechanism can produce different outcomes according to its context – ‘the spatio-temporal relations with other objects’. This research design should take the external context into consideration. In this case, the national campaign for eco-transition was considered to be the external context. These eventually provide a contingent necessity for the effect/event to happen. For instance, the national policy of ecological civilisation and environmental protection inspectorate has a huge influence and thus urges Manzhuang to find new ways to address entrepreneurial growth.

Thirdly, critical realism also tolerates a wide range of research methods in empirical studies. Critical realists believe that complex social systems can be abstracted by both an extensive and intensive research design, therefore they should not be regarded as adversarial research methodologies that one must choose between. Instead, they may be complementary (Sayer, 1992; Dillon, 2008). Extensive research is designed to discover the regular patterns and characteristics of certain social phenomena, events, and effects. In this research, extensive documentary and statistical data was collected which served to sketch the general situation of the critical events related to the local ecological modernisation practices. In contrast, intensive research addresses the causal

explanation of certain events. This was conducted using methods such as interactive interviews, ethnographies, and case studies (Sayer, 1992). Intensive research often leads to further in-depth studies that are based on or accompanied by extensive investigations (McKeganey, 1995). This research adopted a case study approach with semi-structured interviews as the major intensive research methods used to identify the causation within the process of ecological modernisation practices in Manzhuang Town.

4.3 Research Design - Data Collection and Analysis

The research design is the plan, structure, and strategy for data collection and analysis. It is used to ensure that the obtained evidence is able to answer the research questions with optimal control of the variables (Kerlinger, 1986; Hassan, 1995). The research design in this research has offered a scaffold to investigate the causation, mechanism, and events in which local ecological modernisation struggles to take place under the national policy context.

The arrangement of the research design should be in a manner that manages to combine the research objectives with the economy and procedure, thus presenting a logical rather than logistical basis for the arrangement (Jahoda et al., 1951; Manheim and Simon, 1977; Jongbo, 2014). Akhtar (2016) stated that a good research design needs to be envisaged under the principles of ‘(theory) grounded’ and ‘situational’ and ‘feasible’, thus striking a balance between insufficient design and redundant design. In this sense, this research design has been arranged in a logical and balanced way with three phases consisting of five actions (Table. 4.1).

Social research design is commonly categorised as descriptive, explorative, and explanatory (Yin, 1984), depending on the research purpose of the case studies. The research design of this study was addressed in a comprehensive way because it aims to outline, explore, and interpret the multiple dynamics of local ecological modernisation under urban entrepreneurialism in China.

Table. 4.1: Research Design Guidelines

PHASE 1	PHASE 2		PHASE 3	
Case Study	Data Collection		Data Analysis	
<i>April - May 2019</i>	<i>June 2019 – September 2019</i>		<i>October 2019 – Jan 2020</i>	
Action 1 - Getting access	Action 2 - Document and data collection	Action 3 - In-depth interviews	Action 4 - Data processing and analysis	Action 5 - Confirmation of the research questions
<p>The researcher undertook a full preparation to enter the case study site to conduct the fieldwork.</p> <p>It included making an application to the ethics committee of the school, contacting Shandong Urban and Rural Planning Design Institute (SDUP) to ask its recommendation, as well as providing a fieldwork outline with a Chinese translation to the local officials in</p>	<p>The researcher collected the relevant local policies, governmental reports, planning proposals, and meeting blogs (for example, the annual working agenda of DIPC, master plans of Manzhuang, 13th/14th/15th Five-Year Plan of Daiyue Tai'an).</p> <p>The researcher obtained relevant data from the internet and statistical books (e.g., Manzhuang Town statistic yearbook from 2006 to 2018; annual statistics of the chlor-alkali chemical industry in China).</p> <p>The researcher discovered the clues necessary to begin to find out the critical events in the local ecological modernisation practices in Manzhuang.</p>	<p>The researcher discussed the ongoing thesis with my supervisors from Cardiff University to refine the in-depth interview questions.</p> <p>The researcher conducted 67 semi-structured in-depth interviews with 56 state actors (include the Dawenkou Industrial Park Administrative Committee, the Daiyue District government, the Daiyue District Environmental Protection Bureau, the Daiyue District economic and information Bureau, and the Daiyue Natural Resource and Planning Bureau) and 11 industrial actors from 7 local chemical industry firms in Manzhuang.</p> <p>The semi-structured in-depth interviews consisted of both descriptive and evaluative questions.</p>	<p>The researcher analysed the collected data during the process of coding, alongside the mathematical statistics and graphic visualisation.</p> <p>The researcher combined and crosschecked the data collected from different sources.</p>	<p>The researcher confirmed the research questions by evaluating the quality and potentiality of the data to develop critical inferences and arguments.</p>

the DIPC.		Draw out key research focuses based on the feedback from the interview.		
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(Source: Author)

In this research, a case study, documentary analysis, and in-depth interviews were adopted as the major data collection methods. In the next sections, I will detail these methods.

4.3.1 Case Study

According to Yin (2017), the case study can be defined in two ways as a powerful research method. On one hand, a case study can help a researcher to *‘investigate a contemporary phenomenon in-depth and within its real-world context, especially when the boundary between phenomenon and context may not be clearly evident’* (Yin, 2017, p. 37). On the other hand, a case study deals with research where it relies on multiple sources of evidence to support its arguments (Yin, 1984).

In this sense, first of all, this research is set within a real-world contextual condition, therefore the implications of the national policy to promote an eco-transition in China are regarded as the general condition under which the local ecological modernisation happened on a small town scale. Secondly, this research relies on multiple sources to acquire the relevant data. The case study as a whole gives the researcher broad opportunities to adopt plenty of methods (mainly interviews and document collection) through which to collect sufficient data.

Nevertheless, it is critical to ‘recognise the potential wider implications of the findings but also to identify the limits to generalising the findings’ (Chan, 2015, p. 109). Rather than statistical generalisation, the selected case could be viewed as a method of analytical generalisation as an opportunity to shed an empirical light on the theoretical concepts that are likely to contribute generalisable findings to a variable situation beyond the settings of the specific case (Bennett, 2010; Yin, 2017). In this regard, the analytical generalisability of the ecological modernisation of Manzhuang provides the basis for the analytical generalisation to a broad extent. Moreover, the particularity of

the cases should also be considered as they might come from different timelines, geographical locations, and social environments (Creswell and Miller, 2000; Creswell, 2009). Therefore, the external validity of the generalisability of the Manzhuang case relies on rightly linking the appropriate inferences to other place cases with their own political styles, economic patterns, and societal preferences. According to this point of view, the findings from Manzhuang should be more relevant to small towns in developing countries on the urban fringe because they share more basic similarities with the original case.

Rationale for the Selection – Why Manzhuang?

This research chooses Manzhuang town in Tai'an City, Shandong Province as the case to understand the localised ecological modernisation process under the trajectory of Chinese urban entrepreneurialism. Three major reasons legitimise the choice of Manzhuang Town as the case.

The first reason relates to the geographical representativeness of Manzhuang as a small town in outer urban periphery. In China, there are 41,636 small towns spreading all over the hinterlands of 690 large and 1,420 medium-small cities. Most of those are more or less encroached by the ever-expansive urbanisation actively facilitated by the entrepreneurial steering at the local scale. Manzhuang, as it stands, represents a large number of small towns under dispersing urbanisation trend with the simultaneous rising risks of pollution. Manzhuang Town geographically provides this setting because it is located 15 kilometres away from Tai'an city - a typical (post) suburbia location in China. With the continuous decentralised trend of urbanisation, enterprises and ecological threats will spread from central city to the hinterlands, as shown in Manzhuang Town. The fact is that since 2003, the establishment of Dawenkou Industrial Park began to reach Manzhuang Town. The territory became under joint management by both the Manzhuang township government and Dawenkou Industrial Park Administrative Committee. Therefore, a large number of manufacturing firms were built there, causing unprecedented level of industrial pollution.

In this regard, through the study on Manzhuang, similar knowledge might be expected to understand many other small towns at the vast hinterlands of China which are under

sever pollution threats.

The second reason relates to representativeness of Manzhuang on chemical industry. Notoriously, the chemical production is considered to be the biggest pollution source of all economic activities on earth. China is the worlds' largest chemical industrial producer accounting for almost 40% of the total global outputs as estimated in 2021. Within China, Shandong Province has the largest chemical industry over the rest provinces. In 2018, there were 8,124 chemical enterprises in Shandong Province, accounting for 15.45% of China. Manzhuang Town, as one of 85 provincial chemical parks in Shandong province, is an intense local container for plenty of chemical production activities with great pollution risks. The chemical industry contributes nearly one third of the town's GDP and is normally regarded as the backbone industry in Manzhuang. Since the first chemical plant was built in 2004, Manzhuang has gradually formed a chemical production cluster represented by chlor-alkali and fine chemical industries. So far there are 15 chemical companies more than 3,100 employees, producing a total of about 3 million tons of chemical products annually. Among them, the chlor-alkali industry is the largest in scale consisting of chlor-alkali products and downstream processing products.

In this regard, through the study on Manzhuang, similar knowledge might also be transferred to many other chemical industrial places where such development pathway and pollution need to be modified.

The third reason is the rich empirical content that Manzhuang can provide. As has been discussed in the previous chapter, the production aspect of ecological modernisation implies a substantial ecological improvement following cleaner production, circular economy, and macro-economic restructuring from heavy industry to high-end manufacturing and tertiary industries. By chance, Manzhuang Town happens to offer multiple scopes of these. It can be said that when regulating cleaner production through stricter pollution control, the DIPC at the same time is attempting to lead the extension of (green) industrial chains in which the circular economy and macro-economic restructuring towards high-end manufacturing industry is the focus. Meanwhile, the DIPC is also making an effort to promote tertiary industries to address macro-economic

restructuring.

In this sense, the vicinity of these events in Manzhuang provides this research with the rich empirical evidence necessary to identify the causal mechanism of ecological modernisation practices to stay at one case study site with enough events to conduct the survey.

Getting Access to the Field

Before formally conducting the fieldwork of the case study to collect data in Manzhuang Town, several steps have been taken to approach the field site:

- (1) Making an application to the ethics committee of the school.
- (2) Contacting Shandong Urban and Rural Planning Design Institute (SDUP) to ask for its recommendation.
- (3) To respond to the gatekeeper in terms of access, we provided the fieldwork outline with a Chinese translation.

Specifically, step one was essential for this research as it involved applying to the ethics committee of the School of Geography and Planning of Cardiff University for approval of the research. In step two, the SDUP was found to have undertaken a number of planning projects in the field site area and they were familiar with the local officials. Since the researcher had worked in the SDUP for 3 years, asking for recommendations from the SDUP made it easier for the researcher to contact local officials in Manzhuang. Once the SDUP understood this research proposal, important official contacts in Daiyue District government and some relevant secondary data in relation to the planning and design of Manzhuang Town were given to the researcher. In step three, the researcher first contacted the vice head of Daiyue District using the name of the recommendation. After the initial communication with the vice head, a meeting with the gatekeeper - the vice director of Dawenkou Industrial Park Committee - was arranged to ask for access permission to conduct the survey including interviews with the local government officials and key actors from the chemical enterprises. During the meeting, the research details were discussed such as the research purpose, the schedule of the fieldwork, the required document list, the interview questions, and the security of the data. Moreover, some personal information about the researcher was spoken to gain more trust. Finally,

the vice director granted his verbal acceptance of this survey and a temporary office desk at the west end of the ground floor in the main building of the Dawenkou Industrial Committee was offered as part of his special hospitality to me.

4.3.2 Documentary Analysis

The method of documentary analysis refers to the analysis of documents that contain relevant information about the phenomenon or events that we wish to study (Bailey, 1994). By analysing a case study, a wide variety of documentary sources are commonly at the researcher's disposal. According to May (2011), documentary analysis has two advantages. First, it has the potential to explicitly inform and frame the decisions that the social actors make on a long-term basis and second, it constitutes the particular reading of social events. In this research, after the extensive reading of the relevant documents, three critical events emerged that have the potential for further investigation through interviews. These include the local transformation of pollution control under the national environmental protection inspectorate, the extension of (green) industrial chains, and the development of a tertiary industry represented by the leisure tourism transition.

Yin (2017) noted that systematic searches for relevant documents are of great importance when making a data collection plan because it could significantly contribute to providing more specific details. This would allow us to corroborate evidence such as verifying the correct spellings, titles and names of the people and organisations that might be mentioned in the interviews. In this vein, the scheduling of the documentary retrieval was paralleled with in-depth interviews conducted in Manzhuang. First, the governmental documents, records, publications, plans, meeting blogs, and statistics related to the production aspects of ecological modernisation (i.e., cleaner production, circular economy, and macroeconomic restructuring) were extensively reviewed. Second, the documents, files and publications offered by the local chemical firms and leisure tourism company were collected. Third, other sources of information from newspapers, internet and the official website were collected.

The range of documentary evidence could support the research findings. For example,

the government's sanction records during the environmental inspectorate helped the researcher understand the changes in the local pollution control under environmental protection inspectorate. Relevant planning documents for (green) industrial chains enabled the researcher to make inferences about the underlined problem of developing a circular economy and manufacturing upgrading. Some official documents on promoting leisure tourism provided details on the local development of the tertiary industry.

In spite of the great potential of various document to inform social research, documentary analysis is limited by the availability of material, missing, incomplete and inaccurate data, and inherent biases (While, 1987; Ahmed, 2010; Webb et al., 2017). Webb et al. (2017) identified the major bias in documentary evidence regarding the two problems of 'selective deposit' and 'selective survival' (Webb et al., 2017, p.114). Denscombe (2014) and Henn et al. (2005) explained that instead of neutral artifacts from the past, documents can be produced for other purposes and not for the specific aims of the investigation. To deal with the shortcomings, Scott (2014) proposed authenticity, credibility, representativeness, and meaning as the four criteria for accessing the available high-quality documentary evidence. Triangulation is needed to ensure the quality of such evidence and to avoid bias. In this research, documentary evidence was triangulated using different sources of data from other documents and in-depth interviews so as to reduce the impact of bias (Bowen, 2009). More specifically, as there may have deviations, omissions, and concealments in China's environmental and economic measurements at the small town level, the data obtained from government documents and statistics has been repeatedly verified through interviews with both state and non-state actors to enhance the quality of data. Under the circumstances where the quantified information from the documents could not be confirmed or there remained some inconsistency, the researcher tended to provide a qualitative descriptor rather than quoting suspicious data.

4.3.3 In-depth Interviews

After (or slightly overlapping with) the documentary analysis, the next step was to conduct in-depth interviews with the state actors and economic actors respectively.

In-depth interviews commonly involve conversations around the research topic in which the ask and answer process is relaxed, open, and honest (Marson, 2017). It enables a direct interaction between the interviewer and informant for the purpose of building mutual self-disclosure (Gubrium and Holstein, 2001; Johnson, 2002) or “*repeated face-to-face encounters*” to dig into the evidence (Taylor and Bogdan, 1984, p.7). It aims to understand the participant’s ‘construction of reality’ as they speak in their own terms (Jones, 1985, p. 46). Morris (2015) claims that in-depth interviews provide an opportunity for the researcher to know “*why people construct the world in a particular way and think the way they do*” (p. 5).

The key aspect of an in-depth interview is ‘deep’. As Johnson (2002) indicates, researchers who adopt the in-depth interview method try to dig ‘*deep information and knowledge usually concerns very personal matters, such as an individual's self, lived experience, values and decisions, occupational ideology, cultural knowledge, or perspective*’ (p. 104). To achieve the same deep level of knowledge and understanding as the participants, Goffman (1989) argues that the researcher should ‘*subjecting yourself... and your own social situation, to the set of contingencies that play upon a set of individuals*’ (p. 125). This depth has been further elaborated on as it goes beyond common sense understanding to “*explore multiple meanings of or perspectives on some actions, events, or settings... to uncover what is usually hidden from ordinary view or reflection or to penetrate to more reflective understandings about the nature of that experience*” (Johnson, 2002, p. 106).

Three styles of interviews were identified to be commonly used in social science research, namely structured, semi-structured, and unstructured. Structured interviews follow rigid rules. All respondents are asked identical questions that adhere to the same wording and sequence. Semi-structured interviews propose a list of key topics including events to be covered by anticipated questions that can be added, removed or changed depending on the direction of the interview. Unstructured interviews are known to be informal and unstandardised. This is because they are non-directed and are more casual when it comes to the asking of the questions (Corbetta, 2003; Kajornboon, 2005; May, 2011; Bernard, 2012; Bryman, 2016). The in-depth interviews of this

research used the semi-structured style. This is because compared to the structured interview method which normally follows a rigorous set of fixed questions, the fluidity of a semi-structured interview allows for responsive changes during the interview. In contrast to unstructured interviews, the semi-structure interviews could give the researcher more control over the interview by having a specific topics and emphasis in advance (Given, 2008; Robin, 2011; Edwards and Holland, 2013).

In this research, recruiting participants for the in-depth interviews followed the instructions of ‘purposive sampling’. This refers to the purposive strategy of deliberately selecting respondents based on two preconditions. First, the researcher has already acquired a theoretical understanding of the topics being studied and second, certain categories of individual have a unique or important perspective of the questions being asked (Troost, 1986; Punch, 2013; Robinson, 2014; Mason 2017). The rationale to employ purposive sampling in this research is that on the one hand, the researcher has established a theoretical and empirical foundation to understand the topics related to the production aspects of local ecological modernisation through the previous literature review and documentary analysis. On the other hand, it was also believed that certain state and non-state actors were more experienced or knowledgeable regarding the local ecological modernisation in Manzhuang compared to others.

Purposive sampling entails categorising the participants (subjects) according to the ex-ante identified research topics (Mack et al., 2005). Here, the sample size is generally determined by theoretical saturation (Oppong, 2013). To reach maximum variation (Marshall, 1996) and to avoid biased sampling in practice, as many as over 100 relevant actors were tentatively approached. To do so, the researcher normally engaged a small greeting chat with each of them in the beginning to measure their interest for the interview. After the brief introduction of this research and the expression of the sincere attitude, the researcher turned to be straightforward and asked their willingness to take the interview freely. If the answer was yes, then a formal interview would be conducted. Eventually, 67 participants in total were agreed to have the interview with the researcher including 38 state actors from the DIPC (MG), 9 quasi-state actors from Taishan Tianyi Lake Tourism Development Company (TL), 9 governmental officials in Daiyue District and 11 local chemical industrial actors (CI) from 7 local chemical

enterprises (Table. 4.2). All interviews were conducted in the face-to-face style. The interview duration was approximately between 20 to 80 minutes. This was subject to the content of the interview and the willingness and convenience of the participants. Throughout the interviews, the conversations were recorded on a mobile phone, converted into text, and then translated into English later on. During the interview, the participant’s body language and manner of speaking were observed to provide more data. In turn, this was used to triangulate and complement the verbal expressions.

Table. 4.2: List of Interviews

Domains	Sector	Number of Interviews	
Officials of DIPC in Manzhuang Town (MG)	DIPC Committee Board	5	38
	Construction Bureau	15	
	Economic Development Bureau	7	
	Financial and Tax Centre	2	
	Publicity Office	1	
	Social Affairs Bureau	2	
	General Office	1	
	Statistic Station	1	
	Office of Letters and Visits	1	
	Retired Officials	3	
Staffs in Taishan Tianyi Lake Tourism Development Company (TL)	High Management Level	5	9
	Middle Management Level	2	
	Staff Level	2	
Governmental	Daiyue District Government	1	9

officials in Daiyue District (DG)	Economic and Information Bureau	2	
	Environmental Protection Bureau	3	
	Natural Resources and Planning Bureau	3	
Chemical Industrial Actors (CI)	Taishan Chemical (TS)	3	11
	Shenhao Chemical (SH)	3	
	Hanwei Chemical (HW)	1	
	Jihaihuatai Chemical (JH)	1	
	Boyang Chemical (BY)	1	
	Lantian Chemical (LT)	1	
	Gruite Chemical (GR)	1	
Total		67	

(Source: Author)

The initial semi-structured interviews were planned to be conducted on three topics to understand the structure, mechanisms, and events of local ecological modernisation in Manzhuang. Topic one was pollution control in which the local transformation of the environment protection inspectorate was concerned. Topic two was extending the (green) industrial chains (especially PVC and pharmaceutical production as the downstream to extending green industrial chains was explored). Topic three was the leisure tourism transition (the making Tianyi Lake Resort was particularly explored). The interview topic guide is attached in Appendix 1.

The interviewees on the three topics revolved around the functional departments of the DIPC. This is because the study was about how the local entrepreneurial state applied ecological modernisation. This included the DIPC Committee Board, Environmental Protection Unit, Land Resource Unit, Construction Office, Planning Unit, Civil Engineering Unit, Investment Attraction Unit, Economic and Information Unit, Financial and Tax Centre, Publicity Office, Social Affairs Bureau, General Office,

Statistic Station of Manzhuang Town, and the Letter and Visit Office. The list of interviewees and interview dates are attached in Appendix 2.

Nonetheless, there were others who participated as a supplement. This action could help the researcher to complement the insufficient answers given by the DIPC. In some cases, it helped to discern the potential skewed facts due to the DIPC's conscious self-protection or where they unconsciously made up and refined their thoughts when under the researcher's observation (see the Observation Paradox, Labov, 1972). Therefore in relation to topic one, the interviews with the state actors from the Bureau of Ecological Environment in Daiyue District and the local chemical industrial actors are relevant. In relation to topic two, the interviews with the state actors from the Bureau of Economy and Information and the Bureau of Land Resources and Planning in Daiyue District also meant that the local chemical industrial actors were involved. In relation to topic three, the interviews with quasi-state actors from the Taishan Tianyi Lake Tourism Development Company affiliated with the DIPC were involved.

However, it is crucial to note that the key focuses of this research were re-adjusted according to the feedback during the interviews. With the focus on topics two and three being accentuated, the significance of topic one has been reduced and made into one general component into policy context (see 5.3).

The major reason for the re-adjustment was the rising necessity to properly handle the sensitive issues when conducting the interviews under the serious atmosphere of the national environmental protection inspectorate. The local chemical companies were suspicious that the researcher was a reporter with an overseas background trying to dig into pollution news. They also thought that he might be employed by the government seeking to capture their deviant behaviours upon pollution discharge. The governmental officials were worried that the researchers' interviews ran the risk of uncovering potential pollution issues that may destabilise society and trouble them due to the presence of fatal mistakes due to their governance on environmental pollution.

To cope with the sensitivities present, the researcher had to declare himself repeatedly, emphasizing the independence and neutrality of this study and ensuring that the

participants were not overly guessing so as to avoid a decrease in the accuracy of the collected data. Furthermore, the researcher had to re-adjust the interview focus (i.e., the research focus) to touch less on pollution control and to centre on extending (green) industrial chains and the development of the tertiary industry. In this way, excessive guesses from the interviewees were significantly reduced. As a result, most interviewees, especially the officials from the DIPC, became honest storytellers willing to offer both descriptive and evaluative knowledge on topics two and three. Some of the information and opinions that they gave were beyond the prepared questions.

The second reason for re-adjustment was that through the interviews, the researcher had found that the real working priority of the DIPC had altered from pollution control through the implementation of the environmental protection inspectorate to the extending of (green) industrial chains and the development of the tertiary industry.

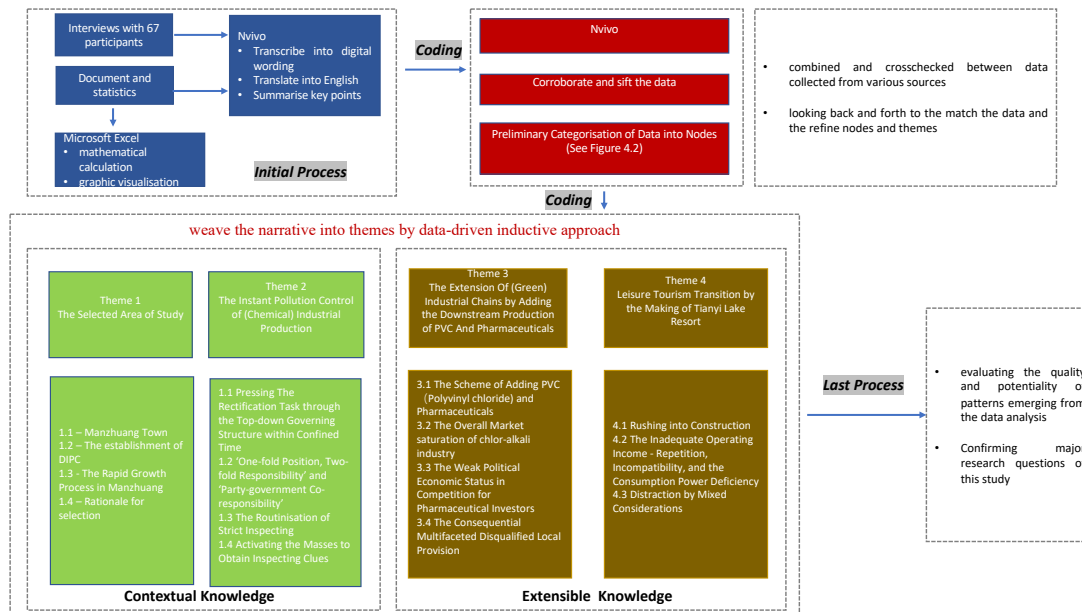
The third reason for re-adjustment was the scope of this research. Through the interviews, the researcher found that if the transformation of local pollution control was decided to be explored and discussed, then a relevant literature review of the local environmental governance framework had to be engaged so as to explain the interaction between the various state and non-state actors clearly. Due to space constraints, this study could not cover all of them. This would make the whole research very lengthy.

Finally, this research chose to further explore two events of transitional growth in Manzhougong - (1) the extending of (green) industrial chains by adding the downstream production of PVC and pharmaceuticals and (2) the leisure tourism transition through the making of Tianyi Lake Resort. In this way, a comprehensive understanding of the local ecological modernisation can be expected.

4.3.4 Data Analysis and the Confirmation of the Research Questions

Data analysis is a practice in which the raw material and information is ordered and organised so then useful evidence can be extracted from it for research purposes (McMahon, 2010). The framework of analysis is shown below (Figure 4.2).

Figure 4.2: Framework of Analysis

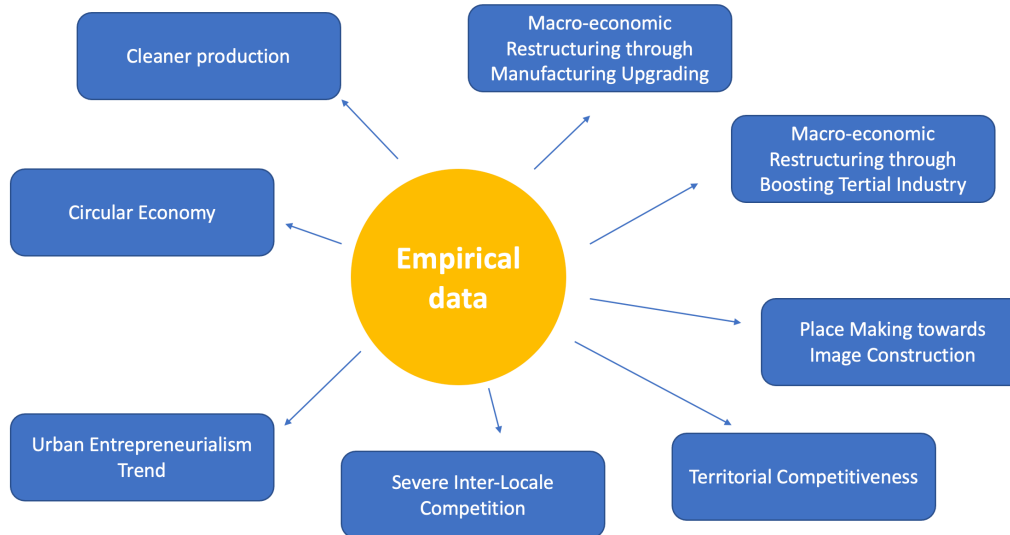


(Source: Author)

After the fieldwork, the data analysis of this research was initialised after listening to all interviews repeatedly and transcribing them into digital wordings in Nvivo. The transcripts were translated from Chinese (the luyu dialect) into English. By reading through the transcripts many times, the key contextual points offered by each interviewee were summarised. In parallel, the relevant statistical data was typed into Microsoft Excel to engage in appropriate mathematical calculations and graphic visualisation.

After those cumbersome works, the researcher started to sift, corroborate, and more crucially code all of the data collected from the fieldwork. Coding is the sorting of evident words, phrase and sentences based on the rules pre-set by the researcher. To do so, the data was preliminary coded into different categories by the selecting and highlighting segments of text into ‘nodes’ in Nvivo. Such nodes were created to reflect the theoretical patterns from the literature review of ecological modernisation and urban entrepreneurialism (Figure 4.3).

Figure 4.3: The Preliminary Coding of Data into Nodes



(Source: Author)

Moreover, coding is important to find analysis patterns, it refers to not only categorise the data according to the similarities and differences but also to map the relations among each category (Glaser and Strauss, 1967). In this regard, the next stage coding process was to link those nodes in a logical layout, which meant it focused on to create a progressive order and weave the narrative for this research.

In general, there were two types of method could be used to guide the coding process at this stage: the theory-driven deductive approach that served to generate the themes learned from the existing literature and the data-driven inductive approach that allowed the themes to emerge from the empirical evidence. This research was mostly influenced by the data-driven inductive approach to creating the (titles of) themes and sub-themes. Taking Theme 3 for example, the title shown as ‘The Extension of (Green) Industrial Chains by Adding the Downstream Production of PVC and Pharmaceuticals’ was more inducting from the empirical data and the expression of the case study site rather than directly deducting from the theory of ecological modernisation or urban entrepreneurialism in literature review.

Meanwhile, two types of themes were identified: the contextual theme and the extensible theme. While Themes 1 and 2 offered more to do with the contextual knowledge, Theme 3 and 4 offered rich extensible knowledge that could be used to discuss and examine local ecological modernisation practices. The differentiation of the themes was based on the quality of data and the potentiality of them to develop the research arguments for answering meaningful questions.

Table. 4.3: Themes by Data-driven Inductive Approach

<p>Theme 1 – The Historical Development Process in Manzhuang</p> <p>1.1 – Manzhuang Town</p> <p>1.2 – The establishment of the DIPC</p> <p>1.3 - The Rapid Growth Process in Manzhuang</p> <p>Theme 2 - The Instant Pollution Control of (Chemical) Industrial Production</p> <p>1.1 - Pressing the Rectification Task through the Top-down Governing Structure within Confined Time</p> <p>1.2 - ‘One-fold Position, Two-fold Responsibility’ and ‘Party-government Co-responsibility’</p> <p>1.3 - The Routinisation of Strict Inspecting</p> <p>1.4 - Activating the Masses to Obtain Inspection Clues</p> <p>Theme 3 - The Extension of (Green) Industrial Chains by Adding the Downstream Production of PVC and Pharmaceuticals</p> <p>3.1 - The Scheme of Adding PVC (Polyvinyl chloride) and Pharmaceuticals</p> <p>3.2 - The Overall Market Saturation of the Chlor-alkali Industry</p> <p>3.3 - The Weak Political Economic Status in Competition for Pharmaceutical Investors</p> <p>3.4 - The Consequential Multifaceted Disqualified Local Provision</p> <p>Theme 4 - Leisure Tourism Transition through the Making of Tianyi Lake Resort</p> <p>4.1 - Rushing into Construction</p> <p>4.2 - The Inadequate Operating Income - Repetition, Incompatibility, and the Consumption Power Deficiency</p>

4.3 - Distraction due to Mixed Considerations

(Source: Author)

Hence, these themes and sequences were connected together to weave the readable narrative for this research (see Chapter 5 for the Theme 1 and 2, see Chapter 6 for the Theme 3 and 4). At the same time, the researcher always combined and crosschecked the data collected from various sources, looking back and forth to match the data. In this way, the right sequence, linkage, and coherence of the evidence was ensured.

Thus, with more of empirical knowledge from the case, three major research questions were finally confirmed (see also 3.5 to understand the raise of these research questions from theoretical aspect).

Research Question 1

Under urban entrepreneurialism, to what extent does the urban competition and competitiveness patterns shape the win and lose of local ecological modernisation of circular economy and industrial upgrading? (i.e., What makes the local attempt to extend the (green) industrial chains simply become impossible?)

Research Question 2

Under urban entrepreneurialism, how does the place making towards image construction fail to deliver the local ecological modernisation through macro-economic restructuring towards tertiary industry such as leisure tourism? (i.e., Why is the boosting of the leisure tourism transition finding it difficult to bring about fruitful outcomes but incurring a financial burden?)

Research Question 3

How does the complex political-economic situation in the general capitalist trajectory of urban entrepreneurialism relate to the ecological modernisation at local places? (i.e., How can we understand the macro-political economic coherent relationship between the urban entrepreneurial growth mode and ecological

modernisation practice?)

4.4 Ethical Concerns

In social research, there is a constant tension between the collecting of data and research ethics. This requires appropriate coping strategies (Ryen, 2011). This significance implies a trustworthy agreement that the researchers, participants, and ethics committees engaged in at the beginning of this study to develop a mutual understanding and commitment both to the welfare of individuals and to the advancement of knowledge (O'Neill, 2004; Miller and Boulton 2007). At the outset, the application of this research to the Ethics Committee of Cardiff University was approved before beginning the fieldwork in Manzhoung town. Alongside the data collection, the researcher maintained constant communication with his supervisors to ask for suggestions on the potential challenges and strategies as well as their concerns for the associated ethics.

Informed Consent

Gaining informed consent is considered to be a key ethical concern (Tinker and Comber, 2005). This is based on autonomy and self-determination in that people are given adequate information and enough of an explanation to enable them to decide whether or not to volunteer for this study (Corti and Backhouse, 2000; Ritchie, 2013). In general, a printed consent form is prepared to inform the participants not only of the background information (the topic and purpose of the study, the researcher's contact details, instructions for receiving the interview, and the potential usage of data) but also acquire their formal acceptance as it is ideally signed by them (Appendix 3). The participants were given the right to withdraw from the interview at any time and they were provided with the researcher's contact details in case they had any further enquiries.

In practice however, the approach to obtaining informed consent has to be responsive to the needs of the participants throughout the data collection (Lugosi, 2006). Sometimes acquiring written consent forms from the interviewees was not always feasible. Verbal consent was acquired as an alternative to replacing the written consent forms. Therefore verbal consent was used after the researcher orally conveyed to the participants the key information of the study. The major reason for using verbal consent

was that some people originally agreed to participate but were unwilling to participate when they saw the written consent form. Some of the participants had a lot to say but once they signed the consent form, their reactions turned out to be perfunctory. More so when the researcher mentioned the consent form to some managers in chemical enterprises, they explicitly refused to participate without any negotiation and euphemistically asked the researcher to leave the office. This was because they (whether they were state actors or chemical actors) were worried that the written consent form would result in a formal record that they might be held accountable for, especially under the current policy context of the growing pressure of pollution control and environmental awareness in Manzhuang Town.

Confidentiality

The ethics codes clearly point out that researchers should do everything to protect their respondents' privacy and manage the risks. They should avoid any accidental breach of confidentiality (ESRC, 2015; Ritchie et al., 2013; Wiles et al., 2012).

Confidentiality entails the removal of any of the participants' personal information from the research record which may identify the participants' identity (Berg and Lune 2014). In this study, the identity of the participants was replaced by anonymity or a pseudonym if he/she required before the interviews. All of the real names of the interviewees were marked only in the initial phase for differentiation and then they were replaced totally withonyms or the surname only. The general data being collected through the in-depth interviews will be used publicly in the researcher's doctoral dissertation and other potential places which relates to this study. The participants' personal information (real name, age, and contact details) will not be shared with a third party at any time. All of the acquired data in material form was kept in a filing cabinet within a locked office. Today, more attention should be paid to manage the risk of using information and communication technologies (Miller and Boulton, 2007). To cope with it, the acquired data in a cyber format was encrypted on a computer with a password and fingerprint verification.

4.5 Conclusion

This chapter has introduced the three dimensions of the methodological considerations: the philosophical concerns, the case study-based research design along with the methods of data collection and analysis, as well as the research ethics.

By adopting the case study approach, three major research questions have been critically proposed. In the following chapters, the findings related to these questions will be going to be presented and discussed.

Chapter 5. The Context: Manzhuang under a Turning Point

5.1 Introduction

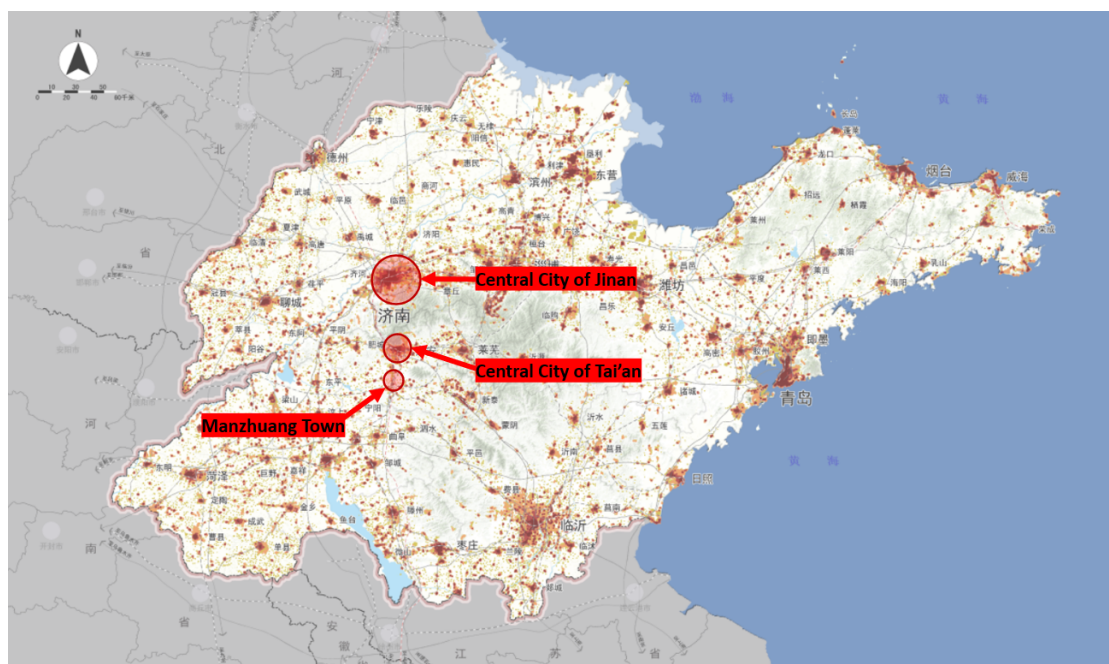
Local ecological modernisation under urban entrepreneurial steering in Manzhuang is mostly instigated by the latest serial environment-concerned policy intervention from the central state. This chapter intends to briefly outline the national policy context specifically exemplified in the promotion of ecological civilisation and the regulation of the environmental protection inspectorate.

5.2 Manzhuang Town – the Historical Development Process

5.2.1 Manzhuang Town

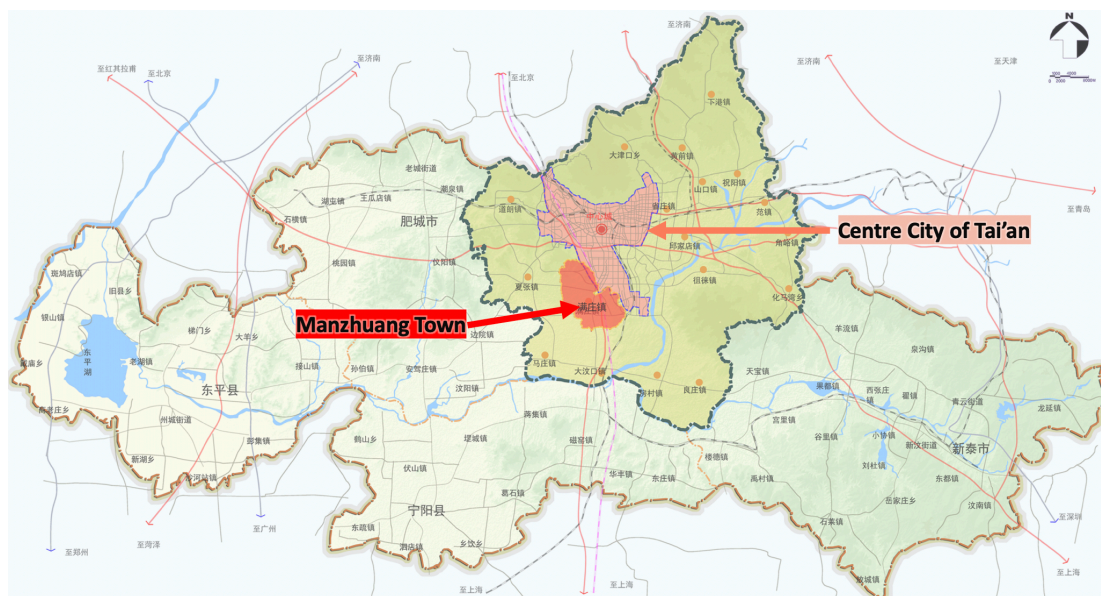
Manzhuang town is located in the south end of Daiyue District, Tai'an City-Region, Jinan Metropolitan Area, Shandong Province. It is about 15 kilometres away from Tai'an central city and 70 kilometres away from Jinan central city (Figures 5.1 and 5.2). Manzhuang town is comprised of over 41 administrative villages and 2 neighbourhood communities with a total land area of 113 km². In 2018, the total number of residents was 83,800 of which 54,600 make up the labour force population.

Figure 5.1: Manzhuang Town in Shandong Province, East China



(Source: Author)

Figure 5.2: Manzhuang Town in Tai'an City



(Source: Author)

Manzhuang town is renowned for the mineral resources upon which a large chemical industrial development has been built. It is calculated that the mineral reserves of Dawenkou Basin¹³ mainly consist of 36.05 billion tons of gypsum, 7.52 billion tons of halite, and 3.19 billion tons of natural sulphur (Table 5.1).

Table. 5.1: Major Proven Mineral Reserves in Dawenkou Basin

Gypsum	36.05 billion tons
Halite	7.52 billion tons
Sulphur	3.19 billion tons

(Source: Manzhuang Statistical Station, 2003)

Historically, Manzhuang has not been an urbanised area with only a small number of people and production industries. Until 2003, the urbanised population in Manzhuang was 9,154 which accounted for only 185 million yuan out of the GDP in the production industry (Table 5.2). However, the situation began to change due to rapid urbanisation

¹³ Daweikou Basin is a geographical area that is administrated by three township levels of government, namely Manzhuang town, Dawenkou town, and Manzhuang town.

and industrialisation after 2003 with the establishment of Dawenkou Industrial Park (DIP). Under the local steering of Dawenkou Industrial Park Committee (DIPC), Manzhuang started to experience large-scale growth.

Table 5.2: The Gross Domestic Product (GDP) of Manzhuang town 1999 - 2003 (unit: 100 million yuan)

Year	1999	2000	2001	2002	2003
GDP	3.1	3.4	3.7	4	4.5
Agricultural Industry	1.4	1.5	1.6	1.6	1.85
Production Industry	1.2	1.32	1.45	1.65	1.8
Tertiary Industry	0.5	0.58	0.65	0.75	0.85
Ratio	45:39:16	44:39:17	3:39:18	40:41:19	41:40:19

(Source: Manzhuang Statistical Station, 2003)

5.2.2 The Establishment of Dawenkou Industrial Park Committee

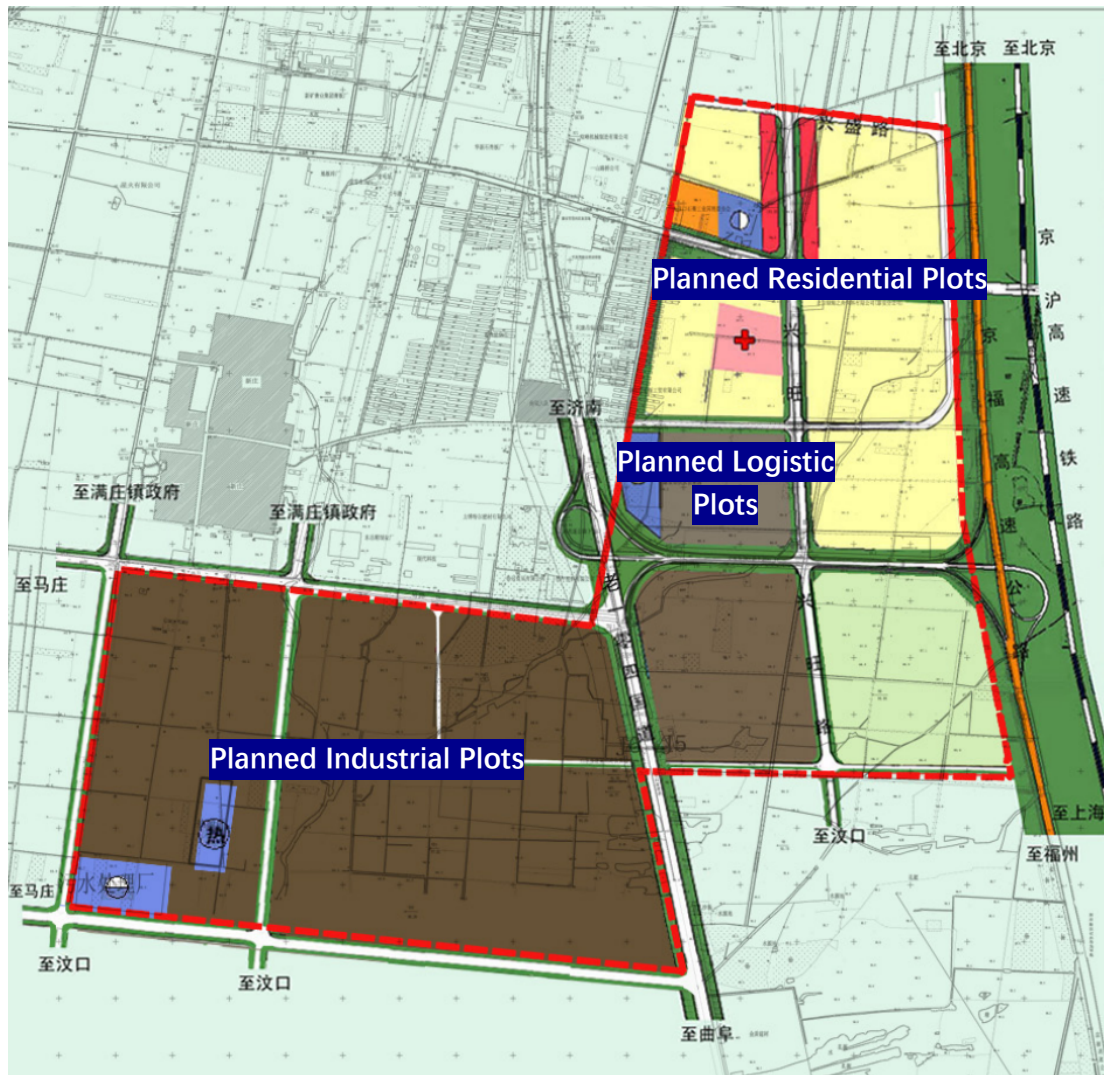
As early as 1998, Tai'an municipal government proposed that the production industries in the central city should gradually relocate from the central urban area to the hinterlands to meet the political goal of better “*solving the problem of insufficient development land*” in the central urban area (SDUP, 2006, p. 2-3). Later, Manzhuang was selected as one of the destinations for industrial development and manufacturing transfer. In 2001, the Tai'an municipal government issued the No.74 decree to urge the Daiyue district government to establish a pilot area and institution for industrial development in Manzhuang as one of its key tasks in the near future (TUPI, 2006). In 2002, Dawenkou Industrial Park (DIP) was formed by the Daiyue district government. Following this, 3km² of pilot land was allotted from the Manzhuang township government to Dawenkou Industrial Park Committee (DIPC) as the initial juridical area (Figure 5.3). Meanwhile, the Daiyue district government required the DIPC to promptly ‘*establish a number of enterprises, take advantage of mineral resources and foster resource economy*’ (MTG, 2002, p. 15).

In 2003, Manzhuang was officially positioned as the future industrial base in the city

region. The spatial strategy of *'follow the historic opportunities to build one city and three zones (TMG, 2003, p.1)'* was called into action. One city referred to Tai'an central city and the three zones referred to the West industrial zone, the South industrial zone and the East industrial zone. They should *'become a destination of industrial projects and population relocation to ease the city centre because they may hinder the protection and development of Mount Tai in the central city. (TMG, 2003, p. 2)'* Later, Tai'an municipal government formulated another spatial policy in *the recent construction plan of Tai'an City 2003-2005* that proposed making use of the driven forces of urbanisation to set up four *'new economic growth points'* to contain industrial projects and attract investment (SDUP, 2003). Specifically, these growth points were the Tai'an High-tech Development Zone in the middle, Dawenkou Industrial Park and Taihe Industrial Park in the south, and Shankou Industrial Park in the East (Figure 5.4).

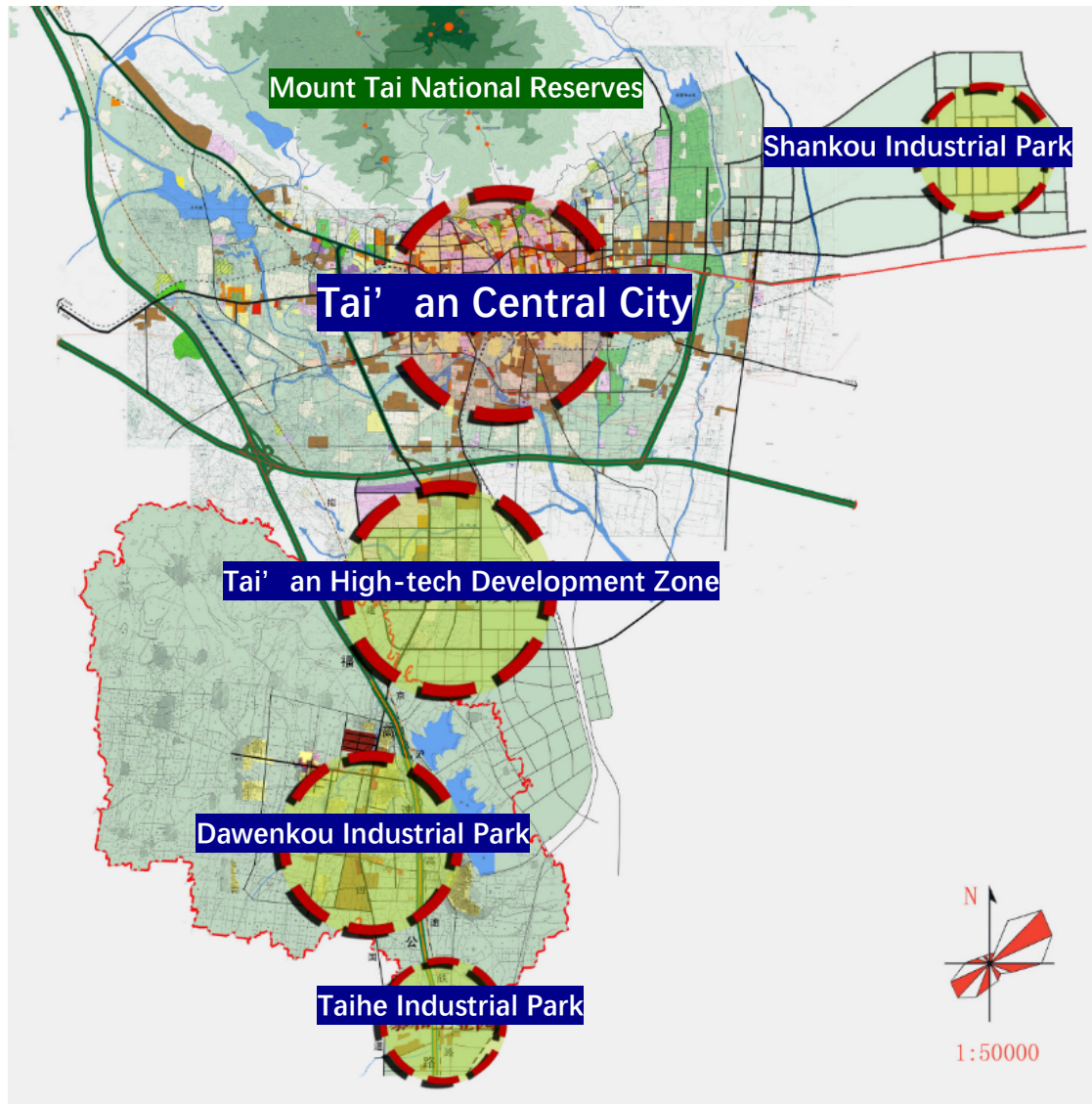
In 2003, the administrative status of DIP was officially confirmed following the approval of the Shandong Small and Medium Enterprises Office. In 2006, Dawenkou Industrial Park was noted by the National Development and Reform Commission in Beijing as the provincial status development zone.

Figure 5.3: The initial juridical area of Dawenkou Industrial Park in 2003



(Source: Adopted from the Master Plan of Dawenkou Industrial Park, 2004)

Figure 5.4: Major industrial parks in the (post)suburbia of Tai'an



(Source: Adopted from the recent Construction Plan of Tai'an City 2003 - 2005)

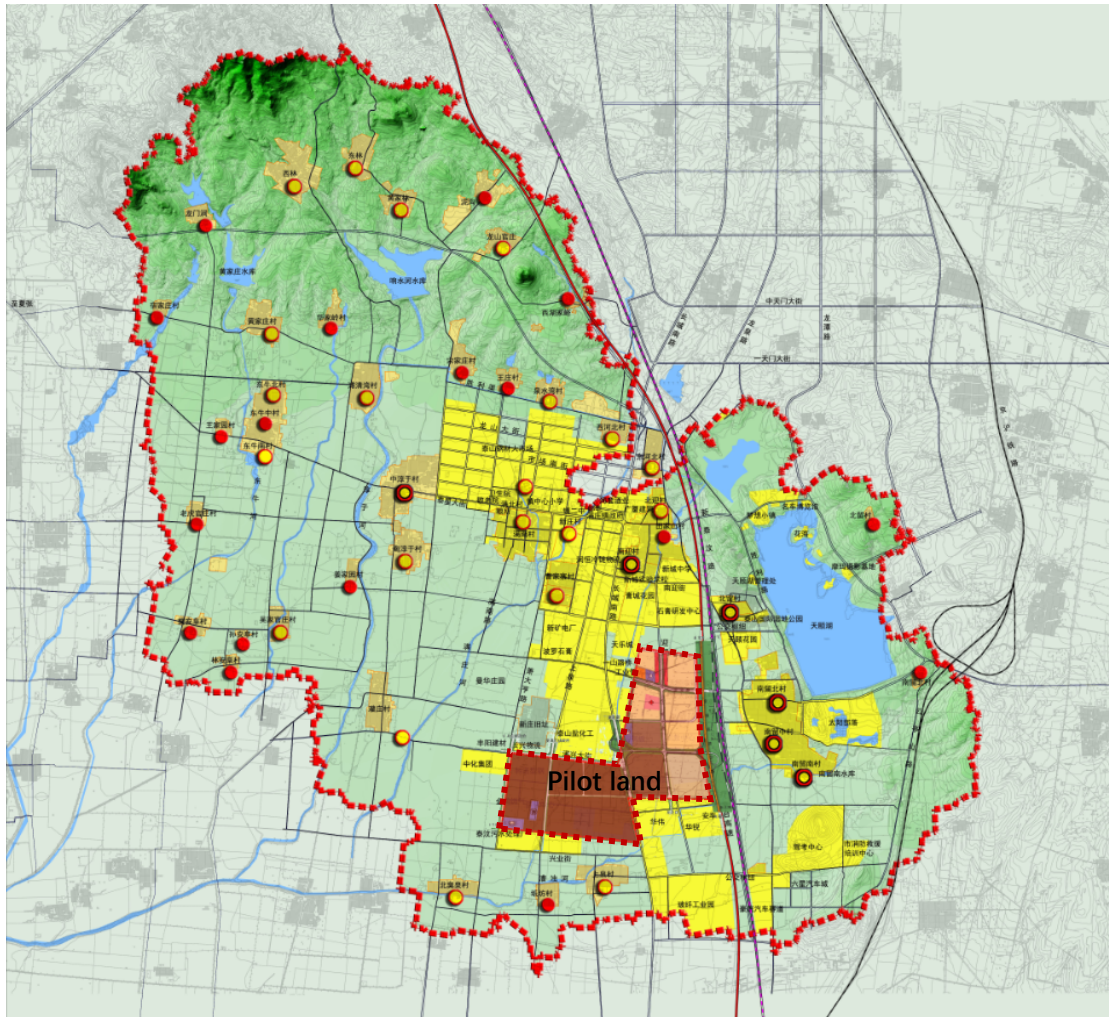
As the management organisation of industrial development, the DIPC is subordinate to the Daiyue district government with the equivalent administrative level of the Manzhuang township government. Based on the idea of integrating the town and the park, the director of the DIPC was also the secretary of the CPC (Communist Party of China) Committee of Manzhuang.

From 2003 to 2019, the DIPC gradually replaced the functions of the Manzhuang township government when it came to governing the local affairs. About 100 officials have been seconded from the Manzhuang town government to the DIPC. The number of staff in the DIPC has expanded from about 20 in 2003 to more than 360 in 2018 (MG02, interviewed on 18th July 2019). At present, three vice directors deputise the daily routine. There are four formal functional departments, namely the construction bureau, the economic development bureau, the social affairs bureau, and the financial and tax management centre, that constitute the DIPC. Among them, the construction bureau is mainly composed of the construction unit, planning unit, land resource unit, environmental protection unit, surveying and mapping unit, infrastructure unit and construction application unit, which is in charge of the development, construction and environmental protection. The economic development bureau is composed of the safety supervision unit, economic information unit, statistics unit, key project unit, investment promotion unit, business attraction unit, and tertial industrial unit which is in charge of economic growth and industrial investment promotions. These two bureaus represent the core spirit of the DIPC as a development-oriented institution. Moreover, to better the construction and operation of key projects, the DIPC has established six platform companies as its direct affiliates.

At present, the original functions of the Manzhuang township government have significantly been weakened due to its limited retaining influence on agricultural and rural affairs. In contrast, the DIPC has jurisdiction over the entire town, fully taking over responsibility for the economy, construction, social matters, and environmental protection (Figure 5.5). However, as mentioned, due to the environmental protection unit incorporated into the construction bureau, the number of staff in the environmental protection unit totals only 6. Only the leader of the unit has a degree majoring in the environment. In comparison, the staff number in the economy-related units and the six

platform companies of DIPC exceed 220 (MG02 interviewed on 18th July 2019).

Figure 5.5: The juridical area of Dawenkou Industrial Park in 2017



(Source: Adopted from the Master Plan of Manzhuang, 2018)

Moreover, with the establishment of the DIPC, the Daiyue district government has established a cadre assessment criterion. The proportion of environmental scores in the cadre evaluation system was rather low in relation to the economic and development-related factors. That is to say, the efforts of the local cadres in terms of environmental protection have made little contribution to the promotion of the environment while economic development and construction could increase the possibility of personal promotion.

For instance, in *'the Comprehensive Assessment for Town's Economic and Social Development 2018 Version'* issued by Daiyue district government (DDG, 2018), the score related to the category of fighting a tough battle against pollution (including environmental management, environmental quality, pollutant control, ecological protection and construction) was only 30 points in total. In comparison, the score for development-related items was as high as 370 points in total (Table. 5.3). In other words, regarding the annual performance review of the cadres, the Daiyue district government's attention to environmental protection and economic development was disproportionate when deciding whether a cadre in the DIPC should be promoted or not.

Table 5.3: Major indicators of the Manzhuang cadre assessment

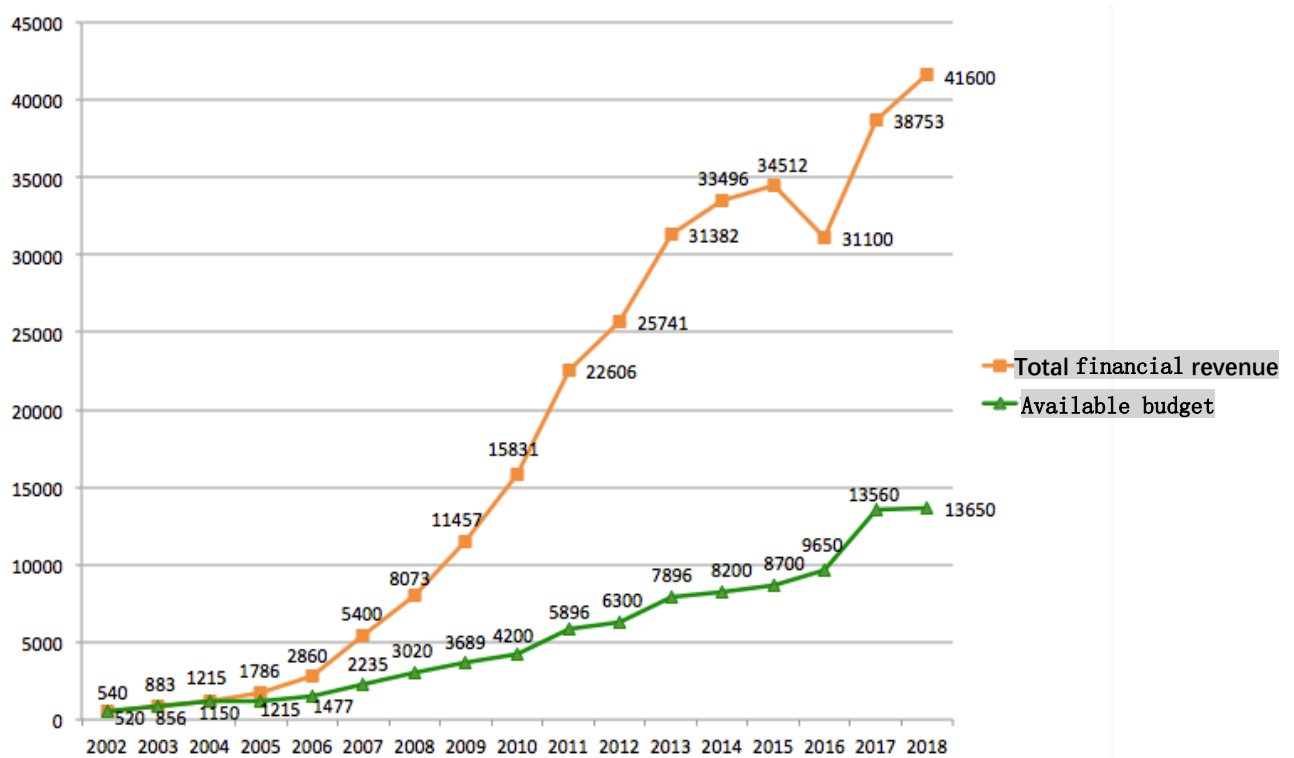
Fight a tough battle against pollution	Environmental management	13 points
	Environmental quality	4 points
	Pollutant reduction	6 points
	Ecological protection and construction	7 points
Promotion of the key tasks	Investment promotion	150 points
	Construction of key projects	20 points
	Asking resources from higher administrations	20 points
	Tax revenue and growth rate	120 points
Urban-rural development	Urbanisation rate calculated by population	30 points
Development of	Added value of culture and related industries	16 points

culture and tourism	Added value of leisure tourism and related industries	14 points
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(Source: Adopted by the author of the comprehensive assessment undertaken for the Town’s Economic and Social Development 2018 Version)

Since the establishment of the DIPC, Manzhuang and Daiyue district stated that there was a long-standing imbalanced tax distribution rule that is inclined to the upper level, thus putting extra economic pressure on the DIPC to address economic growth rather than environmental considerations.

Figure 5.6: Comparison between the available budget and financial revenue of Dawenkou Industrial Park (Unit: 10,000 yuan)



(Source: Compiled by the author based on the data offered by Manzhuang Statistical Station)

Specifically, the Daiyue district government implemented two different tax distribution policies for its subordinate 14 townships. As Manzhuang, Tianping, and Zhudian were urbanised towns which together accounted for more than 90% of the financial revenue of the Daiyue district, the imbalanced fiscal distribution was adopted according to them.

The Daiyue district government got 70% of the annual financial revenue and only 30% remained in Manzhuang (Figure 5.6). In contrast, the financial revenue of the other 11 towns did not need to be shared with the district government because they were agricultural.

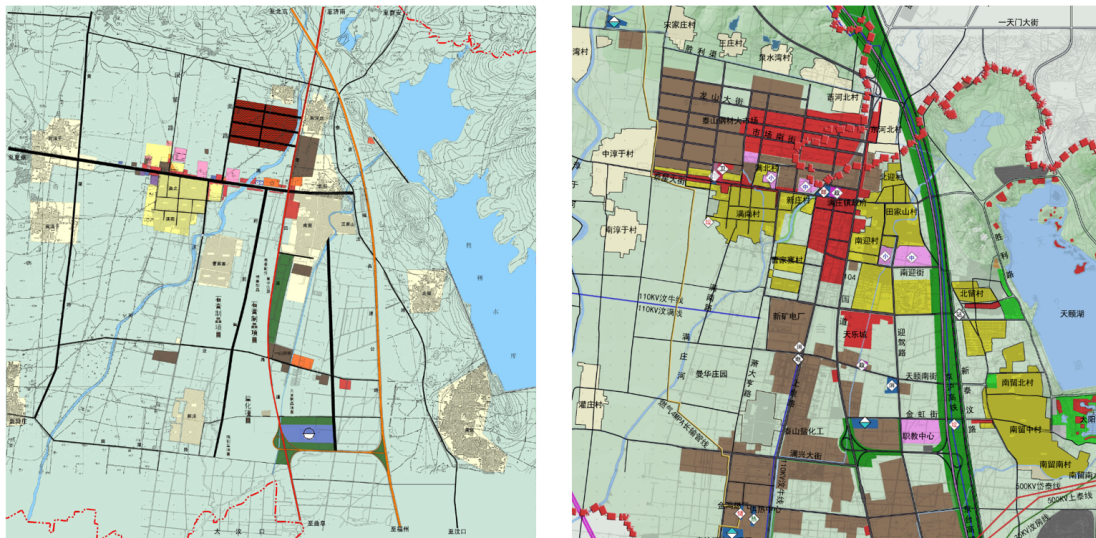
Taking the first half of 2017 as an example, Manzhuang town achieved a total local fiscal revenue of 191.53 million yuan (including a tax revenue of 173.2 million yuan and non-tax revenue of 18.33 million yuan) (DIPC, 2018). This amount of money was then reduced to 57.46 million yuan after redistribution with the Daiyue district. After the payment of the 31.73 million yuan salaries to the governmental staff in the DIPC, the remaining 25.73 million yuan should cover all expenditure of Manzhuang listed in the Chinese local government budget consisting of the social security and employment expenditure, education expenditure, medical and health care expenditure, urban and rural community expenditure, energy conservation and environmental protection expenditure, agriculture, forestry and water affairs expenditure, and resource exploration expenditure.

In this sense, the local pro-growth coalition, which consisted of the Tai'an municipal government, Daiyue District government, and the Manzhuang Town government, has facilitated the institutionalisation of pro-growth at the locality through the institutional adjustments made by the establishment of the DIPC. This is as well as the setting up of the cadre assessment criteria and tax distribution rule. The consequence was that the environmental concerns were marginalised.

5.2.3 The Rapid Growth Process in Manzhuang

The urbanised space of Manzhuang have not changed much from the founding of the People's Republic of China from 1949 to 2003. In 2003, the land use of the town was 2.28km². Most of the built-up areas were concentrated on Taixing street mainly for administrative office and commercial services. After 2003, led by the DIPC, the urban space began to expand along the intersection between Taixing street and national highway 104. The average annual expansion was 1.05 km². By 2011, the urban built-up area reached 10.7 km², which is 4.7 times larger than 8 years ago. After 2012, the urban areas continued to expand southward and eastward, gradually forming two types of urbanised space consisting of industrial and residential clusters. During 2012 - 2017, with an average annual expansion of 1.27 km², there was a total 17.06 km² area that had been urbanised by 2017. This has increased by 59.4% compared with five years ago (TUPI, 2006; 2018) (Figure 5.7).

Figure 5.7: Spatial expansion of Manzhuang from 2003 to 2017

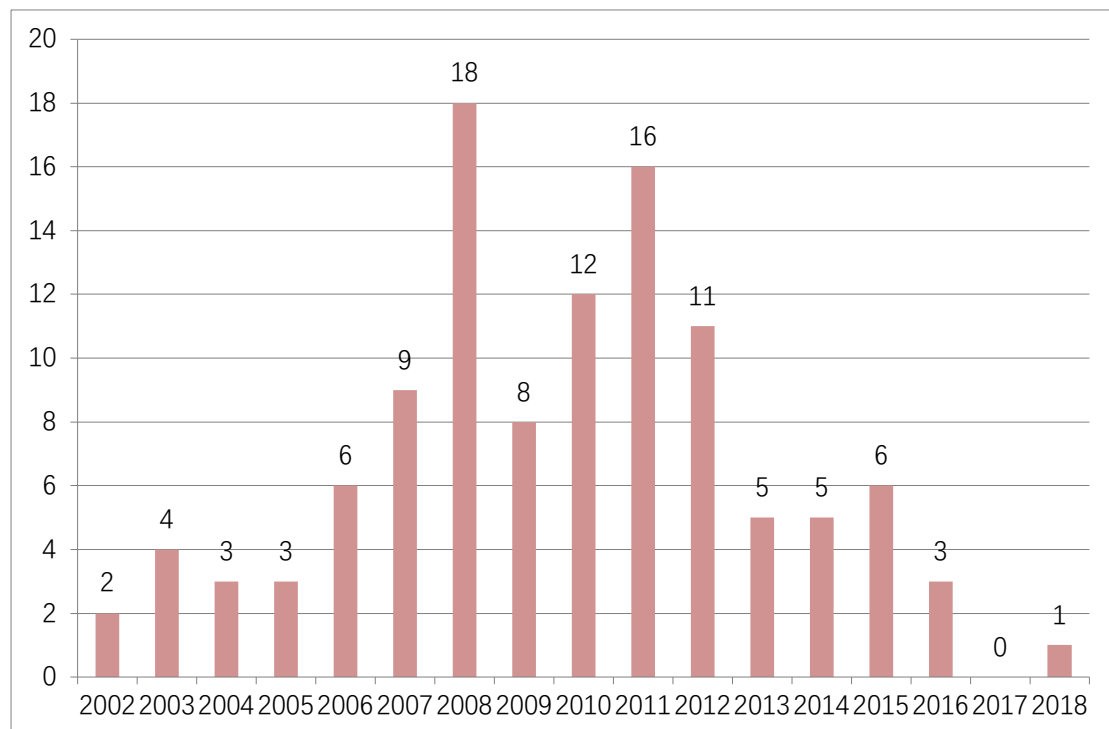


(Source: Adopted from the Master Plan of Manzhuang, 2004 and 2018)

As for population, the total number in Manzhuang was 69,976, including only 9,145 urbanised population in 2003 with an urbanisation rate of 13.1%. In the following years, both the whole and urbanised population had increased rapidly. In 2011, the town's population grew to 120,626, within which the urbanised population increased to 62,304, bringing the urbanisation rate to 51.7%. In eight years, the total population of

Manzhuang had risen by 72% and the urbanised population had increased by 5.8 times. From 2012 to 2017, the population growth had slightly slowed down but it was still considerable. At the end of 2017, the total population reached 140,000 and the urbanised population was 85,400, bringing the urbanisation rate up to 61.0% (TUPI, 2018).

Figure 5.8: Number of industrial production enterprises shifting to Manzhuang in 2002 - 2018



(Source: Adopted by the author based on the data offered by Manzhuang Statistical Station)

One of the rapid urbanisation trends is the standardised production unit overflow into the southern hinterland of the Tai'an City. Led by chemical production, there were many manufacturing enterprises clustered in Manzhuang consisting of the mass chemical, prefabricated building components, machinery equipment, clothing, and food industries. In 2002, there were only six slightly large-scale production enterprises in Manzhuang focused on manufacturing tractors, diesel engine parts, and gypsum boards with a total industrial annual output value of about 209 million yuan. In contrast, as of 2017, as many as 112 production enterprises had opened their manufacturing plants in

Manzhuang with a total industrial output value of 9.88 billion yuan, which is 47 times than that of in 2002 (DIPC, 2018) (Figure 5.8).

The process of growth ultimately exhibited a remarkable economic leapfrog. The GDP was 12.08 billion yuan in 2018 compared to 876 million yuan in 2003. The GDP growth generally exceeded 20% between 2003 - 2010 and had slowed down since 2011 but still with a high growth rate of more than 10%. While the proportion of agriculture out of the GDP was decreasing year by year, the manufacturing and tertiary industries were shown to increase. At present, Manzhuang is formed of three major industries: manufacturing, trade logistics, and tertiary industries. This has lifted Manzhuang in the GDP ranking of Daiyue district from the last place in 2003 to second place out of 15 towns since 2012 (MTG, 2018).

So far, the success of Manzhuang town in terms of economic growth has been appraised by different tiers of the Chinese governments. For instance, in 2012, Manzhuang was honoured as the third batch of ‘national development pilot towns’ by the National Development and Reform Commission, and the first batch of ‘provincial demonstration town for 100 towns construction’ by Shandong Provincial People’s government. In 2014, Manzhuang was honoured as a ‘national town of importance’ by the Ministry of Housing and Urban-Rural Development. In 2017, Manzhuang was selected as among the second batch of ‘Chinese small town with characteristics’ jointly by the National Development and Reform Commission, the Ministry of Finance, and the Ministry of Housing and Urban-Rural Development.

5.3 National Policy Context: The New Steering Concepts of Ecological Civilisation

5.3.1 The Advocation of the Ecological Civilisation Concept

In 1978, China's socialist development (*shehuizhuyijianshe*) entered a new era of 'reform and opening up'. Deng Xiaoping put forward the economic-centric steering idea that '*development is the absolute principle*'. Since then, the growth mentality has become the core value of the state. In this sense, '*the essential task of the construction of modernisation*' had led to unprecedented high-speed modernisation progress (Garnaut et al., 2018). However, the high-intensity exploitation of the natural ecosystem has also resulted in environmental degradation and pollution.

Thirty years later, in the 17th National Congress of the CPC in 2007, President Hu Jintao first proposed an ecological civilisation as a quasi-concept for the social eco-transition by drawing reference from similar concepts of 'sustainable development' and 'scientific development' to deal with the environmental problems encountered in the economic development. To instruct the cadres of the CPC, he called on local places across the country '*to build ecological civilisation so as to reform the industrial structure, growth mode and consumption mode in the way of energy conservation and environmental protection.... A large-scale circular economy should be formed...The discharge of major pollutants should be effectively controlled, and the quality of ecological environment should be significantly improved* (CPC, 2007, p. 6).'

In the Fifth Plenary Session of the 17th National Congress of CPC in 2010, ecological civilisation was linked with a 'two type society'. In this regard, President Hu Jintao further argued that to build an ecological civilisation, in essence, was to build a resource-saving and environmentally-friendly society based on the carrying capacity of the resources and the environment together (CPC, 2010). It should be guided by natural laws as the core principle and aimed at sustainable development as a key goal for the socialist socio-economic development [ibid]. Hu's claim implied that the construction of an ecological civilisation in China involved the practise of the principles of

sustainable development that coordinate the economy, environment, society, and natural resources.

In 2012, the 18th National Congress of CPC formally raised the steering concept of ‘the construction of ecological civilisation’, which had been put forward as the highest national strategic policy. It was the first-time ecological rationale that was viewed as an independent domain parallel to the other rationales. In the working report of the CPC Central Committee, the connotation of the construction of ecological civilisation had evolved into the idea of implementing the *‘five in one’*. This referred to *‘the ecological civilisation construction should be ... integrated into all aspects and the whole process of economic construction, political construction, cultural construction and social construction’* (CPC, 2012, p. 5). As the new steering concept, it pursued the implementation of reversing the environmental deterioration trend through comprehensive development strategies that combine the ecological, economic, political, cultural, and social aspects altogether.

In 2015, the Political Bureau of the CPC Central Committee passed its *opinions on accelerating the construction of ecological civilisation* (CPC, 2015), adding the keyword ‘greenisation’ to the existing ‘four modernisations’ which consisted of new industrialisation, urbanisation, informatisation, and agricultural modernisation. Since then, the nominal leading direction of the implementation of China's modernisation construction has changed from “four modernisations” to “five modernisations.”

At the same time, in the process of delivering its ecological civilisation construction, many initiatives were proposed in various meetings and documents in connection to further ecologies and modernising the social industrial production in urban development. This included *‘cleaner production’*, *‘circular economy’*, *‘eco-industrial park’*, *‘eco-city’*, *‘low carbon city’*, *‘made in China 2025’*, *‘the replacement of old kinetic engine with the new’* and *‘new type urbanisation’* etc. These new initiatives all aim to footnote the governing concept of ecological civilisation which quickly spread to the local scale through the top-down governmental structure (Williams, 2017; Gürcan, 2021).

5.3.2 Redirecting the Development in Manzhuang

Under the campaign of the national development policy change moving towards an ecological civilisation, the DIPC has been trying to lead the local agenda setting through a series of practices.

At the time when the DIP was established in 2003, it aimed *'to increase capital investment, expand the scale economy, to make use of technology and famous brand effect, to drive the development of industrial economy in the whole town'* (DIPC, 2008, p. 3).

Nine years later, in the annual summary meeting of social and economic work of Manzhuang in 2012 and due to the gradual learning form of the ecological civilisation concept, the DIPC reflected on the past development mode that simply emphasised the industrial growth during the early stages of its establishment. The slogan of *'start up again'* was proposed which clarified Manzhuang's new development direction of concentrating on the new types of development. The DIPC regarded the eco-industrial park (town) as the new goal and pledged to accelerate the transformation of the park through a resource economy directed towards a new town with the features of *'circular, high-tech, innovation, recreation, business, and liveability'* (DIPC, 2012, p. 4). In the master plan of Manzhuang drawn up in 2012, the functional division based on the concept of an eco-industrial park (town) was addressed. Manzhuang was designated to be three separated areas consisting of an industrial agglomeration zone, a tourism and residential zone, and a trade and logistics zone. The growth boundary of an industrial cluster has been spatially confined to avoid the spread of industrial pollution to protect the environment from contamination (TUPI, 2012).

In 2013, by reemphasising the determination to operate based on eco-transition, the *'second time venture'* strategy has been accentuated through the mobilisation meeting of the DIP in 2014. Subsequently, the local state carried out transitional growth through a series of adjustments in its investment attraction and project promotion (Figure 5.9).

The first direction was pollution control. The DIPC clearly proposed taking advantage

of the opportunity for the national environmental protection inspectorate to control the pollution due to (chemical) industry production. This was by strictly limiting the scale of its expansion in the park (DIPC, 2017a).

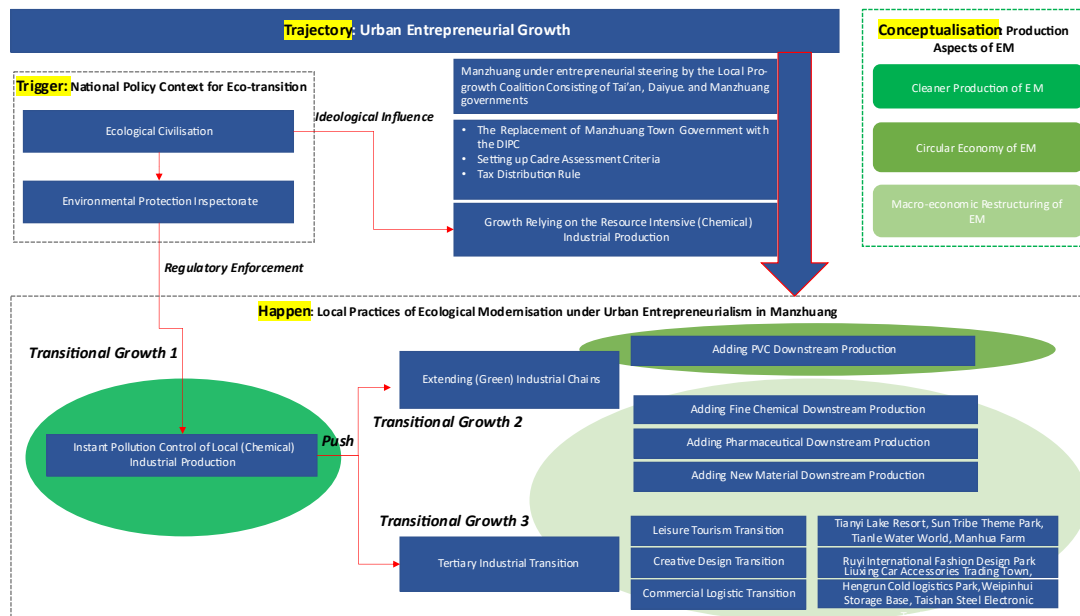
The second direction was the extension of the manufacturing industry from linear production to (green) industrial chains.

This included adding four types of industrial downstream production, namely (1) PVC, (2) fine chemicals, (3) pharmaceutical, and (4) new material.

The third direction was due to relying on the manufacturing connected to the cultivation of tertiary industry. This included the (1) leisure tourism transition with the projects of Tianyi Lake Resort, Sun Tribe Theme Park, Tianle Water World, and Manhua Farm, (2) a creative design transition through the Ruyi International Fashion Design Park, and (3) the commercial logistics transition through Liuxing Car Accessories Trading Town, Hengrun Cold logistics Park, Weipinhui Storage Base, and Taishan Steel Electronic Trading Centre.

In 2018, the '*second time venture*' strategy was rephased as the '*green rise*' strategy to accentuate that '*taking the road of green and sustainable development is the root of the great and rapid development of the Dawenkou Industrial Park*' (DIPC, 2018, p. 3).

Figure 5.9: Transitional growth towards ecological modernisation in Manzhoung



(Source: Author)

5.3.3 Relating Ecological Civilisation to Ecological Modernisation

The launch of ecological civilisation suggests that China's ruling philosophy has begun to shift to the path of ecological modernisation. First of all, the ecological civilisation includes the core production aspects of ecological modernisation. As discussed in 5.3.1, during the political evolution of ecological civilisation concept, the ruling idea has been reset in which the 'ecology' has been placed in a position parallel with 'economy'. In doing so, the state of China made it very clear that the realisation of cleaner production, circular economy and economic restructuring should be taken as the governing objectives. And the derivative supporting policies and institutional adjustment has been taken as the core prescript of the state. These works are exactly the production aspects of practicing ecological modernisation emphasised in EMT.

Accordingly, as a local political response to ecological civilisation, the production aspects of ecological modernisation has also been reflected on local agenda. For instance, it has been found in Manzhoung that, after the three-step strategic adjustments namely 'start up again', 'second time venture' and 'green rise', three basic directions of development were reassured (see 5.3.2). For instance, the first direction - the

pollution control by the environmental protection inspectorate - is for the ecological modernisation of cleaner production. The second direction - building (green) industrial chains - is not only for ecological modernisation of circular economy (the adding of PVC production), but also for ecological modernisation of macro-economic restructuring with a strong signal of manufacturing upgrading (the adding of fine chemical, pharmaceutical and new material production). The third direction - the cultivation of tertiary industry (whether in regard to boosting leisure tourism, creative design or commercial logistic) - is likewise targets at the ecological modernisation of macro-economic restructuring.

Meanwhile, in regard to the ideological conviction of ecological modernisation, ecological civilisation of China underlines the state's fated unescapable role to drive the eco-change within capitalism development. The state of China as a socialist regime, after failing to direct the industrialisation by its defaulting planned economy framework, decided to absorb the capitalism logic (or the market economy mechanism in the narrow term) to carry out rapid industrialisation. This has made 'the socialism with Chinese characteristics' a great success. However, while the capitalism grants China thirty years material increment, it subsequently led to unescapable environmental crisis that threatens the accumulation of capitalism. Here the author does not assume that China would be pure ecological and could avoid any adverse environmental impact if its industrialisation was developed based on the complete socialism system. Just to say, due to the historical decision that has been made by the state to incorporate capitalism, the industrialisation of China then become irreversibly falling into the vortex of capital accumulation. Therefore, the environmental crisis turns to be related to the capitalism development. In this circumstance, the state apparatus of China, found its role to started solving the environmental crisis for the survival of capitalism.

Thus, the political and policy package of ecological civilisation of China's state, in this sense can be seen as an example that accentuates the capitalism reflexivity, indicating the environmental concerned institutional change has taken place.

Therefore, the state of China, like the other developed capitalism countries in the west, will inevitably have gone into the phase 3 of industrialisation (the moment of ecological modernisation) whilst dashing away from the phase 1 (industrial breakthrough) and phase 2 (the construction of industrial society) of industrialisation (Huber 1982;1985). In this way, the ecological civilisation would fix rather than changeover the capitalism development in China by which ‘the socialism with Chinese characteristics’ can be maintained. This socialism authoritarian regime has relied on capitalism in the past to accumulate wealth and hopes to continue relying on it in the future for further accumulation and development.

In short, ecological civilisation, as a Chinese representation of ecological modernisation, is an environmentally controllable mild outlet led by the state of China. The principal motivation is to reduce the possibility of political and economic collapse caused by the excessive rebound of the environmental concern in the spiral of capitalism society (Janick, 1993; Mol, 1995). Hence, it needs to take note that the ecological civilisation reflected the shortcoming of ecological modernisation. From the point of environmental discourse, the state of China only delineates the limited scope and extent of environmental improvement through ecological civilisation concepts, detailed programs, and operative local agendas by mainly focusing on clean production, circular economy and macro-economic restructuring in urban development, but does not dedicate itself into more open issues with sophisticated measures such as environmental equity and biodiversity.

5.4 Pollution Control - The Instant Local Implementation of the Environmental Protection Inspectorate

5.4.1 The Surge of the National and Provincial Environmental Pollution Inspectorate

The central government advocated the concept of ecological civilisation to address the cruciality of an eco-transition. However, when confronted with such severe environmental degradation, the solely conveyed concept cannot form binding forces regarding industrial pollution control (Zhang and Zhang, 2019). Therefore, to propel pollution control at the local level, the central state issued a series of innovative environmental policies in recent years. These included, for instance, the *environmental tax reform* in 2010, the *daily punishment* in 2014, the *environmental protection inspectorate* (EPI) in 2015, and the *pollution discharge permit* reform in 2016, to name but a few. Among them, the EPI was known to be the most stringent policy tool that has significantly impacted the local steering towards cleaner production, more so than others (Yang, 2019).

The mechanism of EPI has originated from the regional environmental supervision system in China. In 2002, to solve the cross-region pollution, the State Environmental Protection Administration¹⁴ (SEPA) set up the east environmental protection supervision centres in Nanjing and the south environmental protection supervision centres in Guangzhou as the internal supervisory agencies affiliated with the SEPA. By 2008, north, northwest, southwest and northeast environmental protection supervision centres were established successively. They were solely responsible for the tasks designated by the SEPA and functioned in parallel with the local environmental departments. The major target of this regional environmental protection supervision was the industrial enterprises. In general, the environmental protection supervision centres have become a vital supplement for the local environmental governance (Ge et

¹⁴ The State Environmental Protection Administration (SEPA) was recomposed as the Ministry of Environmental Protection (MEP) in 2008. It was then renamed as the Ministry of Ecological and Environmental Protection (MEEP) in 2018.

al., 2019; Yi, 2019).

While supervisory attention was given to the production enterprises, the supervision of the local state was overlooked. Aimed at changing this situation, from 2014, the Ministry of Environmental Protection (MEP) decided to adopt a programme of ‘arranged talk’ (*yuetan*). The arranged talk was conducted in the name of the MEP that was usually presided over by the directors of the regional environmental protection supervision centres. In response, the top local officials attended the arranged talk and made reflective statements based on what environmental problems had been discerned by the MEP. The arranged talk was vital when it came to persuading the local state to take measures to solve the industrial pollution present. However, due to the inability of the arranged talk to directly punish the local officials and the lack of a mechanism to monitor local rectification procedures as well as the administrative level of the officials who presided over the talks being no higher than that of their counterpart local officials, the political impacts were not outstanding (Yi, 2019).

Learning from the past, the central government launched the EPI in July 2015. The EPI arranged inspections for the CPC Central Committee and the State Council with officials from the six regional environmental supervision centres forming the team base. The leaders of the inspection teams were selected from the senior ministerial level cadres from the central state with a high political reputation. They were deputised with cadres selected from the MEP. In December 2015, the pilot EPI was tested in Hebei Province. It was then conducted nationwide, covering deep inspections among both local governments and industrial production enterprises. Meanwhile, all other provinces launched a provincial version of the EPI to act in accordance with the EPI from the central state.

To conduct the inspection, the central EPI teams set up temporary offices in the provincial governments. Likewise, the provincial EPI set up temporary offices in each municipal government within the province. The typical ways to find inspection targets were through listening report, document reviews, fieldwork, face-to-face conversations with local officials, and accepting complaint letters and calls from potential informants (Ge et al., 2019). The EPI teams then gave a critical evaluation to the local officials and

judged their accountability during or shortly after the inspection period of around 28 days. Moreover, aside from the period when the EPI teams were stationed, the central and provincial EPIs also required the local governments at all levels to reinforce the regular inspections as a policy extension of the EPI (Zhang and Zhang, 2019).

In practice, the central (provincial) EPI had been innovative in four synergising aspects which are considered to have solved the ‘state failure’ of the local environmental protection. These include (1) pressing the rectification task at the local level through the top-down governing structure within the confined time, (2) the shared responsibility of the local state (*yigagnshuangze, dangzhengtongze*), (3) the routinisation of strict inspecting, and (4) activating the masses to obtain inspection clues (Lu and Huang, 2019).

5.4.2 The Forced Change for the Control of Industrial Pollution in Manzhuang

(1) Pressing the rectification task through the top-down governing structure within a confined time

The Shandong Provincial EPI first started to inspect the 17 city regions within the province in March 2017 before the arrival of the central EPI five months later. In the survey, the researcher was told in the interview with officials from Daiyue District Ecological Environmental Bureau that since then, the workload began to be very tense (DG04 interviewed on 4th September 2019). After the inspection team was stationed in each municipal government, it brought in administrative pressure from the provincial government. Accordingly, the leaders in charge of each municipality transmitted the administrative pressure to the district or county level governments. The leaders in the district or county then further transmitted the administrative pressure down to the township level governments (DG04 interviewed on 4th September 2019).

As for the urgency of the work, DG05, the deputy leader of the inspection team in Daiyue District Ecological Environmental Bureau, said (DG05, interviewed on 4th September 2019):

'After finishing their daily inspection, the provincial EPI team will issue a reference list at about 10-11 p.m., and it normally has 5-20 items every day. They ask the lists to be handed in before 9 a.m. the next morning. This means they only give us one night to prepare. So, we'll have to get things done all night... Then I must contact other relevant government sectors or lower local authorities overnight, including the DIPC. All the documents must be ready in the early morning. Because if it is not handed in on time, the EPI team will consider us as dereliction of duties. Then accountabilities will be scrutinised level by level.'

Sensing the administrative pressure from their superior, each staff member in the DIPC was under a higher pre-warning status than the one before. All cadres of the committee board in the DIPC were required to be responsive to the EPI (MG01 interview on 18th

July 2019). Accordingly, the DIPC set up a special working group for the EPI with the head of DIPC as the group leader. All other main cadres were deputy group leaders in charge of six subgroups (DIPC, 2017b) (Table 5.4). Each subgroup had to make sure that at least one official was on standby for 24 hours each day to wait for instant instructions from Daiyue district environmental protection bureau (MG01 interview on 18th July 2019).

Table 5.4: The special working group for the EPI of the DIPC

Name	Number of staff
Group leader	1
Vice group leader	6
Subgroup of mixed task	8
Subgroup of sorting material	6
Subgroup of implementation	6
Subgroup of logistics	4
Subgroup of maintaining the social stability	10
Subgroup of Publicity	4

(Source: Adopted from the emergency deployment of the DIPC for the environmental protection inspectorate, 2017)

Later, the No.3 team of the central EPI was stationed in Shandong provincial government in August 2017. After entering the provincial government, the central EPI first transmitted the administrative pressure from the central government to the provincial government. The pressure was then transmitted level by level via the administrative system of Shandong province down to the township. In September 2017, the central EPI finished the inspection and put forward the rectification tasks to Shandong provincial government in December 2017. As the largest chemical industry province in China, the central EPI made serious criticisms of the industrial pollution of the chemical enterprises and industrial parks in Shandong, as stated: *'the randomly scattered and in poor condition', 'uncontrolled pollution emission' and 'disordered development'* (Central EPI, 2017). In response, the Shandong provincial government promptly introduced the policy of *Reapplication for the Permit of Shandong Chemical Industry Park* in March 2018, which was followed by the decision to reevaluate all

chemical industry parks in Shandong province for pollution control¹⁵ (SPG, 2017). These parks were required to be eco-upgraded according to new criteria with a significant reduction from the current 199 to less than 100 according to the score ranking. Backward chemical industrial parks were removed from the list (Table 5.5).

Table 5.5: Criteria of the administrative permit of the chemical industry parks in Shandong Province

Criteria	Score
Planning and layout	20
Infrastructure	20
Safety production	25
Environmental protection	25
Economic development	10

(Source: Adopted from the Guideline of Reapplication for permission to run Shandong Chemical Industry Park, 2017)

To apply for the permission to continue Shandong chemical industry park, the DIPC led bold progressive actions to pass the revaluation. It was granted approval in September 2018. Specifically, the DIPC made a master plan for the chemical industry park in March 2018, reducing the volume rate of the industrial zones from 1.0 to 0.7. From the end of 2018, the DIPC began to install the air monitoring system and immediately set up the trial operation stage. The air monitoring system was designed to be operated independently by a third party. Moreover, to reduce the impact of pollution discharge from the chemical enterprises on the local residents, the DIPC loaned 300 million yuan from the bank to resettle the villages who were only 200 meters away from the chemical industry to the new site. At present, all local residents have

¹⁵ Previously, Shandong did not undergo a clear provincial approval assessment for setting up the chemical industry park. In terms of the administrative convention, the local government at the county and district level held the power to permit the founding of chemical industry parks. In 2003, Dawenkou Industrial Park was established with the approval of Daiyue District government and it automatically obtained permission to engage in chemical industrial projects. Consequently, many chemical enterprises were (re)located to Dawenkou Industrial Park in a short time.

lived at least 800 meters away from the chemical enterprises. Besides this, the DIPC also organised expert meetings to design the possible direction of developing (green) industrial chains based on the existing chemical production pattern in Manzhuang. Details on the matter will be referred to in section 6.2.

(2) 'The shared responsibility of the local state'¹⁶

The early regional environmental supervision has been limited to administrative levels and its functional attributes made it almost impossible to impact the local state substantially. 'One-fold position, two-fold responsibility' was found to be accurate when industrial enterprises engaged in environmental pollution. It means not only were the enterprises responsible, but the local state also had the same responsibilities (Lu and Huang, 2019). On the other hand, 'the party-government co-responsibility' emphasised that the party committee and the government shared the same responsibility for industrial pollution, i.e., both the local CPC committee members and the government officials shared the punishment when pollution problems occurred (Shen et al., 2019).

By September 2017, there were three cadres punished for the pollution because the central and provincial EPIs identified that they *'have not performed their duties properly in the environmental issues and caused adverse effects on the daily production and lifestyle.'* One of whom was admonished - which implied the further promotion of this carder became rare, while the other two were administratively sanctioned - which meant that the administrative level of this two carder were reduced to the lowest (MG16 interview on 16th August 2019).

Since then, the cadres of the DIPC have been really concerned about their environmental responsibility. Out of fear of being investigated for pollution problems, the development led the departments of the DIPC to communicate with the peer

¹⁶ Along with the introduction of EPI, three other supporting documents were also passed, namely *"Eco-Environmental Monitoring Network Construction Plan"*, *"Pilot Program on Carrying Out Outgoing Leading Cadres' Natural Resources Assets Audit"*, and *"Accountability Measures for Leading Cadres' Ecological Environment Damage (Trial)"*. These documents emphasise the responsibility of the party and government officials for environmental issues which could be summarised as "One-fold position, two-fold responsibility" and the "party-government co-responsibility".

environmental protection unit for advice. For instance, the investment promotion unit, construction unit, and planning unit frequently consulted with the environmental protection unit about potential environmental issues related to their daily work. MG23, one senior staff of the investment promotion unit in DIPC (MG23, 8th July 2019), stated the following:

‘Before, I never asked the environmental protection unit for any advice. But since the EPI, we have seen that our colleagues were being held responsible for environmental mistakes. Now that we have changed the way of working. Now I send the information of the potential investors and projects to the environmental protection unit as soon as possible to get advice on if there are any risks in this project according to their pollution prevention technologies ... Because if something happens after the construction of projects, it is me to be punished.’

Soon after, environmental pollution become an essential factor for assessing the leading cadres in the DIPC. In relation to the environmental protection inspectorate, the Daiyue district issued a new edition of *‘the Comprehensive Assessment for Town’s Economic and Social Development 2018 Version’* (DDG, 2017a). The local grave environmental pollution events were added as a ‘one vote veto’ indicator.

(3) The routinisation of strict inspecting

In addition to the period when the EPIs were stationed, according to the requirements of the central state, the local environmental monitoring team at the provincial, municipal, district and town levels also had to be strengthened as the policy extension of the EPI to routinise the inspection. Consequently, the inspecting frequency of the DIP conducted by the Shandong provincial government, Tai’an municipal government and Daiyue district government was raised from once every 4-6 weeks to almost once a week (MG17, interviewed on 25th July 2019). In addition, the DIPC also enhanced the routine monitoring of industrial production. Due to the daily inspection needs, the number of staff in the environmental protection unit increased from 2 to 6 (MG16, interview on 16th August 2019). The comment from MG20 vividly reflected on the changes to the daily routine inspection (MG20 interviewed on 2nd August 2019):

‘After the central and provincial EPI, the routinised environmental inspection in Dawenkou Industrial Park has increased significantly. Roughly speaking, the provincial environmental monitoring team comes once a month, the municipal environmental monitoring team comes once a month, and the district environmental monitoring team comes once a week. The contents of each inspection could be various, and the supervision on heavily polluted weather for industrial discharge has always been centred. The provincial environmental monitoring team has recently been running the special action programme concerned with industrial pollution. These happen once every two weeks and lasts until 2020... Every day, two of us will be sent to patrol in the morning. You know, we used to patrol at most half a month.’

In the meantime, the punishment for enterprise pollution in the DIP was significantly upraised. According to the statistics, in 2017 during the EPIs and routinised inspections, a total of 88 industrial production enterprises in Manzhuang with ‘messy pollution’ were forced to change, 7 of which were banned, 37 of which suspended operations to rectify themselves within the time limit, and 44 of which were required to change by implementing new pollution control methods (DIPC, 2017c). The penalty amount increased 316% from 50 thousand yuan in 2013 to 1.58 million yuan in 2017 (DDG, 2017b). In terms of chemical industrial production, according to the information given by the DIPC, four chemical enterprises were directly banned, three chemical enterprises were forced to shut down to change within the half-year suspension period, and the rest were required to conduct ecological modifications through pollution control technologies.

As for the seven interviewed chemical enterprises, all of them were required to carry out technical and management rectifications, three of which were suspended from operating until they had finished their rectification (Table.5.6).

Table.5.6: Classification of the “for change” and “shut down for change” during the periods of the environmental protection inspectorate

For change	Shut down for change
HW, JH, BY, SH	TS, GR, LT

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(Source: Adopted from the 2017 working summary of the environment protection unit of the DIPC, 2017)

The interviewed chemical enterprises invested about 96-97 million yuan in total through 22 substantial technical improvements for cleaner production. Among them, TS Chemical carried out seven technological transformations in terms of discharge treatment and five technical transformations of material recycling to reduce pollution (Tables.5.7 and 5.8). These included the modification of the pressure swing adsorption of vinyl chloride, the construction of a new desulphurisation tower, and the adoption of a hydrogen chloride synthesis furnace, etc. (CI01 interviewed on 2nd August 2019; CI02 interviewed on 2nd August 2019; CI03 interviewed on 2nd August 2019). The technological transformation of the other six chemical enterprises involved engagement with seven discharge treatment technologies and three material recycling technologies (Table 5.9). These include the transformation of distillation separation, the transformation of dry circulation, workshop sealing and the construction of new accident chemical safety tanks, etc. (CI05 interviewed on 25th June 2019; CI07 interviewed on 13th June 2019; CI08 interviewed on 27th June 2019; CI09 interviewed on 28th June 2019; CI10 interviewed on 2nd July 2019; CI11 interviewed on 4th July 2019). In the management aspect, the EPI's arrival made the enterprises pay more attention to setting up their environmental target-responsibility systems. All of the interviewed chemical enterprises have begun to hire environmental specialists in the past three years, two of which set up the environmental specialist team [ibid].

Table 5.7: The adoption of discharge treatment technologies in the TS company

Measures for emission reduction	Targeted pollutants	Investment	Pollutant treatment scale	Technological process	Time of completion
Dust removal transformation	smoke	5.81 million yuan	2 * 130t / h boiler flue gas	Electric bag composite dedusting	March 2016
New denitration tower	nitrogen oxide	2.19 million yuan	2 * 130t / h boiler flue gas	SNCR	August 2017
New desulphurisation tower	sulphur dioxide	11.7 million yuan	2 * 130t / h boiler flue gas	Wet desulphurisation of calcium carbide mud-gypsum	October 2017
Ultra-low emission transformation	sulphur dioxide	7.6 million yuan	2 * 130t / h boiler flue gas	Wet desulphurisation of calcium carbide mud-gypsum	October 2017
Treatment of wastewater containing mercury	mercury	3 million yuan	3m ³ / h wastewater	HELR (mercury removal + filtration)	March 2019
Pressure swing adsorption of vinyl chloride	vinyl chloride	5.4 million yuan	10t / a PVC production	Pressure swing adsorption	March 2019

			n		
Carbide crushing and dedusting	dust	4.58 million yuan	10t / a PVC production	Bag dedusting	March 2019

(Source: Adopted from the interviews with the chemical industrial actors)

Table 5.8: The adoption of recycling technologies in the TS company

Recycling technology	Targeted objects	Investment	Energy/ material saving	Key process	Time of completion
Reutilisation of acetylene from calcium carbide slurry	Acetylene gas	3.8 million yuan	Annual recycling of acetylene gas 360,000 Nm ³	Online monitoring method of the oxygen content in the vacuum flash process	2016
Reutilization of hydrogen	hydrogen	6.1 million yuan	Annual recycling of hydrogen 8000,000 million Nm ³	Pressure swing adsorption drying process with six stage compression	2017
Reconstruction of the hydrogen chloride synthesis furnace	steam	12 million yuan	Annual by-product of medium pressure steam 32000t for energy cascading	Two in one by-product steam graphite synthesis furnace	2018

Comprehensive control of calcium carbide dust	calcium carbide	4.58 million yuan	Annual recycling of calcium carbide dust 1000t	Dust reuse technology in bag dedusting	2019
Pressure swing adsorption of vinyl chloride exhaust	Vinyl chloride, acetylene	5.4 million yuan	Annual recycling of vinyl chloride and acetylene: 1000t	PSA separation and recovery technology	2019

(Source: Adopted from the interviews with the chemical industrial actors)

Table 5.9: The adoption of pollution reduction technologies in the HW, GR, LT, JH, BY, and SH companies

Enterprise name	Technology improvement	Investment	Time of completion
(HW)	<p>Technical transformation of the warehouse.</p> <p>Construction of three new dangerous chemicals warehouses with a total area of 5508m² and a total storage capacity of 4,381t.</p>	More than 2 million yuan	2017
	<p>The production technology of diethyl sulphate and isooctanoic acid was improved with the production capacity unchanged.</p> <p>The by-product sulphuric acid is used in isooctanoic acid production through recycling.</p>	About 5 million yuan	2017
(GR)	<p>It mainly deals with the over standard of exhaust by introducing 300,000 kcal of imported machines, as well as a matching brine pool, cooling tower and pipeline.</p>	Over 10 million	2017
	<p>Strengthening and updating the dust collection device</p>	Hundreds of thousands of yuan	2017
	<p>Transformation from sulphur fixation to a liquid sulphur process in which the</p>	Over 10 million yuan	2017

	liquid sulphur tank and steam pipeline were all changed into stainless steel.		
(LT)	Sealing of the unorganised emission of volatile gas in the workshop with an upgraded collection method and treatment. Construction of sewage treatment equipment and carrying out "three effect evaporation" after the sewage treatment.	Over 10 million yuan	2017-2018
(JH)	The process of "distillation separation" was added to reduce the COD and ammonia nitrogen of wastewater compared that the original wastewater being merely treated and directly discharged to the pipe.	Nearly 3 million yuan	2017-2018
(BY)	Change the wet cycle to the dry cycle in the sewage treatment.	About 2 million yuan	2017-2018
(SH)	Construction of an accident water tank	0.2 million yuan	2017-2018

(Source: Adopted from the interviews with the chemical industrial actors)

(4) Activating the masses to obtain inspecting clues

According to the interview with DG04, the deputy director of the Ecological Environmental Bureau of Daiyue District (DG04 interviewed on 4th September 2019), as soon as the central and provincial EPIs were stationed, it was compulsory that the hotline and mailbox must be available immediately with the contact details being promulgated on the local TV and governmental website. All call-ins and letters were welcomed from the masses. The hotline opened between 8:00 to 20:00 every day. There were two staff members available to answer the phone at all times. While one staff member communicated with the pollution whistle-blower, the other member of staff took notes and double-checked the information. All cases were sorted out in the evening by the EPI team and the stationed local government were required to sign and get the

list of cases ready no later than the next morning. After the handover, the stationed government distributed the cases to the lower-level governments to demand their reaction.

During the work of the central and provincial EPIs in 2017 and 2018, there were 208 cases¹⁷ received by the Daiyue District Government. Among them, the 19 cases that referred to Manzhuang were distributed to the DIPC (DDG, 2019). These included 16 cases on industrial production pollution accounting for 84% of the total number (Table 5.10). Half of the cases on the pollution of industrial production related to the chemical enterprises.

Table 5.10: Reported cases in Manzhuang

	2017 Central EPI	2018 Central EPI	2017 Provincial EPI	2018 Provincial EPI
Total cases	5	1	6	7
Cases related to industrial production	4	1	5	6

(Source: Adopted from the Daiyue District Government Website)

The evidence suggests that under the pressure from the central state, the industrial pollution control in Manzhuang has been reset. This shows several features. First, polluting behaviour has been greatly deterred by the unprecedented strong punishment of both local officials and industrial enterprises. Secondly, industrial enterprises have generally installed new equipment for cleaner production. The local government's pollution supervision and communication was made routine on a daily basis. In addition, public participation has been activated to assist the local governments in monitoring industrial pollution.

¹⁷ According to the official statistics, Daiyue district government received 47 cases from the Central EPI in 2017 and 34 in 2018, while 24 cases were from the provincial EPI in 2017 and 98 in 2018.

5.5 Conclusion

This chapter has highlighted the context of this research in which the historical development patterns and the turning point of Manzhuang has been reviewed.

In general, the national state has been reassuring the public of the importance of the ecological environment in economic development through the changes in steering ideology in the name of an ecological civilisation. Subsequently, the DIPC, as the representative agency of a local pro-growth coalition consisting of Tai'an municipal government, Daiyue district government and Manzhuang town government, has gradually set the agenda for an eco-transition. Three directions have been identified in Manzhuang, specifically pollution control, extending (green) industrial chains, and developing tertiary industry.

To be specific, in line with the campaign for ecological civilisation, the national state hastened the environmental regulations by introducing EPIs for the purpose of pollution control. Therefore, the DIPC has been forced to turn to the stricter control of industrial pollution, significantly reducing the possibility to grab economic benefits from the conventional resource-intensive (chemical) industrial production since the establishment of the DIPC in 2003. Therefore, Manzhuang, under the trajectory of urban entrepreneurialism, must find an alternative pathway to continue its economic development. Extending the (green) industrial chains and boosting the tertiary industry have become the new entrepreneurial placemaking of the DIPC.

In this vein, the next chapter is going to focus on two specific local events to deliver alternative development in Manzhuang in which the structural constraints have been captured. For the extension of the (green) industrial chains, the difficulties experienced in adding PVC and pharmaceuticals as part of the downstream production will be explored. To boost the tertiary industry, the problematic making of Tianyi Lake Resort as part of the leisure tourism transition will be explored.

Chapter 6. The Constraints of Ecological Modernisation Practices in Manzhuang

6.1 Introduction

This chapter presents and analyses the data collected from the case study to provide an analysis of the ecological modernisation practices in Manzhuang.

This chapter first analyses the difficulties associated with extending (green) industrial chains. After introducing the scheme of adding PVC (polyvinyl chloride) and pharmaceuticals, the overall market saturation of the chlor-alkali industry is reviewed and analysed. This becomes the key factor that inhibits Manzhuang from extending its (green) industrial chains by adding PVC production to achieve a circular economy. This is followed by a review of the weak political-economic status present and the consequential lack of territorial competitiveness in Manzhuang to attract pharmaceutical investors. Manzhuang is thus unable to extend its (green) industrial chains by adding pharmaceutical production to achieve manufacturing upgrading.

This chapter goes on to analyse the inescapable problems associated with boosting leisure tourism in Manzhuang. After an examination of the historical rushing of construction, the detailed empirical findings on the inadequate operating income and the veiled motivations of Tianyi Lake Resort are discussed. Evidence suggests that the construction of Tianyi Lake Resort cannot realise the transformation of Manzhuang's economic structure in relation to the tertiary industry.

Finally, a conclusion is drawn.

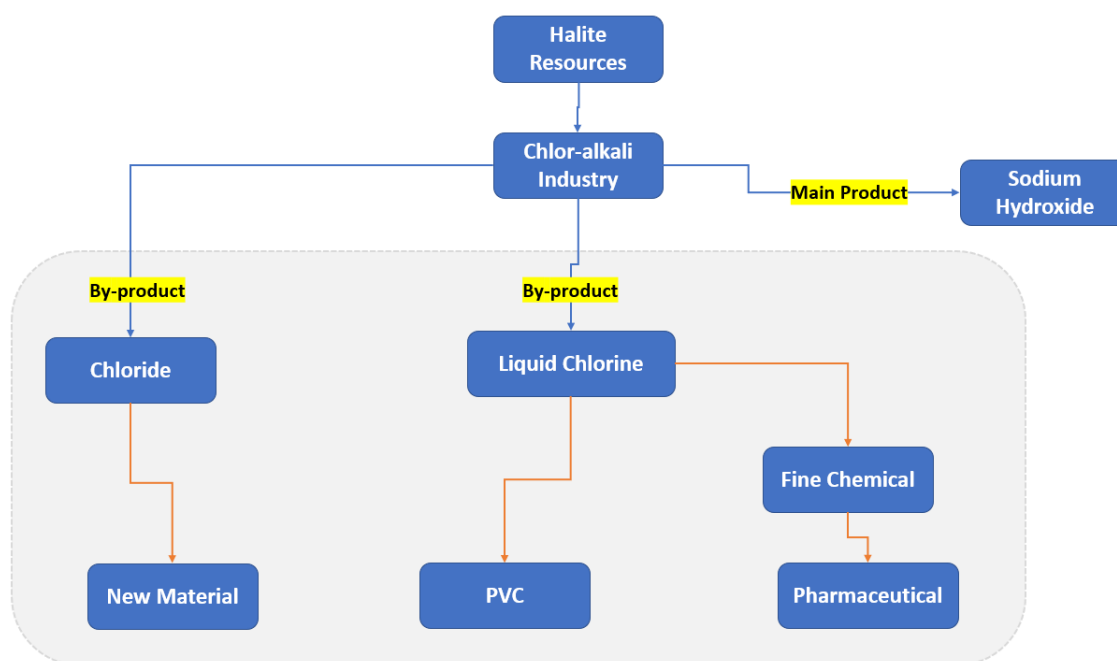
6.2 The Difficulties of Extending (Green) Industrial Chains

6.2.1 The Scheme of Adding PVC (Polyvinyl chloride) and Pharmaceuticals

In 2017, the DIPC was activated to pass the reapplication of Shandong chemical industry park. The park was introduced as the direct consequence of the ideological influences of ecological civilisation, especially the influence of the central EPI specifically.

After careful consideration with the assistance of experts, the DIPC decided that Manzhuang should take advantage of its surrounding halite resources and the existing chlor-alkali industry to expand the industrial chains further to acquire a downstream with more high added value (manufacturing upgrading with fine chemicals, pharmaceuticals, and new materials as the downstream) and ecological efficiency (circular economy with PVC as the downstream) (Figure 6.1). In this way, the DIPC aimed to achieve the goal of *'improving the utilisation of by-products, enhancing the added value of production, and (so) increasing the competitiveness of the chemical industry in the park'* (CPCPI,2017, p. 11).

Figure 6.1: The planned chemical industrial chains in Dawenkou Industrial Park



(Source: Adopted from the chemical industry plan of Dawenkou Industrial Park, 2017)

In terms of a circular economy, sodium hydroxide is the main product of the chlor-alkali industry. Its major by-product (liquid chlorine) is expected to be consumed by PVC production and processing. At present, the TS company in the DIP has already built a 100,000ton per year PVC production line based on the calcium carbide method. To use the chlorine more effectively, the DIPC proposed adding 500,000 tons per year of PVC production that was designed to be operated by TS and SH (Table 6.1). Meanwhile, some of the PVC processors were expected to be part of the investment attraction of the DIPC.

Table 6.1: Incremental plan for PVC production in Dawenkou Industrial Park

The planned projects	Increment of production	Note
New PVC production lines relying on TS and SH	400,000t/a	Ethylene oxychlorination process
Modification of the existing PVC production line in TS	100,000t/a	The existing production line using the calcium carbide method will be transformed into an ethylene oxychlorination process, and another 100,000t/a of PVC will be increased.

(Source: Chemical industry plan for Dawenkou Industrial Park, 2017)

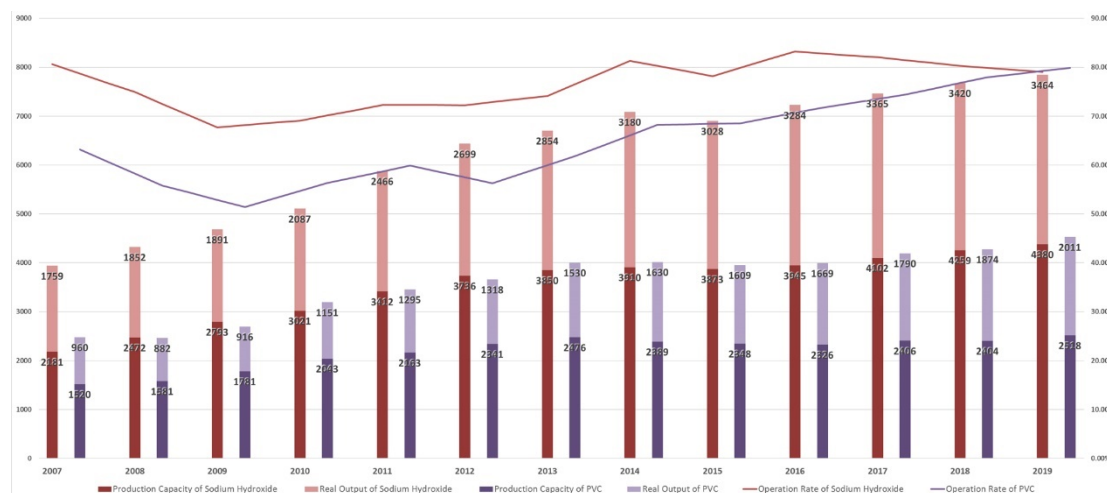
The upgrading of the manufacturing industry was carried out simultaneously with building a circular economy. As indicated in the chemical industrial plan, the DIPC also intended to link the manufacturing upgrading to the new emerging industries. Thus, the (chlorine related) pharmaceutical industry was regarded as one of the important chessmen used to build strong economic growth with a minimal environmental cost. In Manzhuang, the DIPC carried out an action scheme targeting investment attractions in 2017 by sending seven working groups to recruit high-end manufacturing projects in and around the Shandong province where chlorine-related pharmaceuticals have become the pivot.

6.2.2 The Overall Market Saturation of the Chlor-alkali Industry

However, in terms of building a circular economy, it seemed that such a plan had been almost impossible to achieve previously. A higher risk of economic loss would occur if new PVC production lines were pushed into construction. As the chlor-alkali industry and its downstream PVC were close to saturation in terms of the market demands, adding extra production lines would result in economic losses. Under the market restriction, the DIPC has a few approaches capable of impacting the formation of circular industrial chains in TS and SH.

From the perspective of sodium hydroxide (Figure 6.2), the pressure of overcapacity continues to exist. In 2016, the total capacity of domestic sodium hydroxide in China was 39.45 million t/a which increased to 9.62 million t/a compared to 2010. However, since 2007, the production operating rate of sodium hydroxide has declined. In 2009, the utilisation rate of industrial units fell with the overall operating rate being below 70%. Since 2016, because some of the major enterprises quit, the production operating rate improved slightly. For instance, in 2016, there were 158 sodium hydroxide production enterprises remaining compared with 176 in 2010. The number of enterprises decreased by 10%, pulling the overall operating rate up to about 75-85% (CEVSN, 2017; 2019).

Figure 6.2: Trend chart for sodium hydroxide and PVC production in China from 2007 to 2019 (units: 10,000 t)



(Source: Adopted from the market analysis and research report of the salt chemical

industry in China, 2020)

As for PVC (Figure 6.2), in 2000, due to the continuous growth of the national economy, the demand for building construction soared. This phenomenon led to a higher demand for the development of the PVC industry. Consequently, before 2007, the domestic PVC production expanded rapidly. However, since 2007, the growth rate of the PVC demand declined and enterprises withdrew from production. The operating rate of the PVC industry began to decline in 2007, dropping to 55% from 70% (CEVSN, 2017). By 2016, the total production capacity of PVC in China had reached 23.26 million tons but the real output was only 16.69 million tons (ibid). Although the operating rate rose to 79% in 2019, the growth rate was not sustained.

In the context of market saturation and overcapacity, the interviews (see below) revealed that due to the major macro-factors of the market demand and product prices, the TS and SH did not appear to gain a profit. Therefore despite it being suggested by the DIPC to add PVC production, both TS and SH were nevertheless found to be in a state of tepidness.

Interviewee CI04, the vice president of the SH enterprise, compared the economic results regarding whether or not to add a PVC production line to take advantage of the by-product of fluid chlorine. CI04, interviewed on 25th June 2019, told the researcher that:

'If we don't use fluid chlorine, we need to subsidise 700-900 per ton to send them to other places. If we add a PVC production line, we can achieve the purpose of by-product utilisation and increase profits for the enterprise in this perspective. But we are worried that the PVC produced after the equipment investment can't be sold out. From this point of view, we will lose more money because the PVC market is volatile now. It is very likely to lose more than 1,000 per ton at a time if you calculate carefully. Therefore, we'd rather choose to send the fluid chlorine free of charge to other enterprises outside the park just to ensure that our fluid chlorine storage tanks do not overflow.'

Interviewee CI01, the head of the production line in TS, talked about the strategy of ‘using alkali to raise chlorine’. This is widely used in the chlor-alkali industry at the moment (CI01, 2nd August 2019) stated:

‘In fact, our industry adopts the strategy of “use alkali to raise chlorine”. Because the profit of 2,500-5,000 yuan per ton of sodium hydroxide is relatively decent. Whether we install a PVC line depends on whether or not the profit of sodium hydroxide production after making up for the loss of PVC production outweigh the profit of sodium hydroxide production after making up for the loss of sending fluid chlorine away. At present, it's more costly for us to install the production line of PVC than simply send fluid chlorine away.’

CI02, the vice general manager of TS, said the following frankly (CI02 interviewed on 2nd August 2019):

‘Before the PVC market was saturated, let's say ten years ago, if there were enough PVC processors already settled in Manzhuang, we would probably be willing to continue increasing PVC production with the guidance and support of the DIPC... But now, for me, the circular economy production plan put forward by DIPC will only be regarded as an idea or imagination instead of a serious proposal and policy... They (DIPC) don't even have any market knowledge.’

The author was also told that due to the overcapacity of the PVC market, the TS with PVC production had a cumulative loss of 1.02 billion yuan from 2007 to 2016 under the downwards market fluctuation (CI03 interviewed on 2nd August 2019). This indicated that PVC production is very difficult to profit from.

Moreover, the figures showing the low PVC operation rate indicated not only the PVC production but also the PVC processing in terms of its overcapacity. This dilemma seems to have been confirmed by the DIPC's investment promotion work. A young staff member, interviewee MG23, from the investment attraction unit of the DIPC, said in confusion (MG23, 8th July 2019) that:

'I haven't heard of any PVC processing plants that we have kept contact with since I joined the DIPC in 2016. Seemingly, none of them has ever come to us to discuss the possibility of setting up a factory here.'

This awkward situation can be seen from the removal of the advertising board with the huge slogan of 'Dawenkou circular economy industrial demonstration park' made by the DIPC. This was shown at the juncture between Shangquan Road and Manxing Street for two years. Just like the vice director of the DIPC, interviewee MG02 explained the following wearily (MG02, 18th July 2019):

'Our original intention of deploying a circular economy in Manzhuang is to respond to the national ecological civilisation initiative, to realise the reuse of resources and improve ecological efficiency. But later developments proved that we basically could do nothing to help with the circular economy - Due to the market condition, the possibility of profit with supporting policies and subsidies to advance the installation of PVC project to maximise the by-production utilisation of our chlor-alkali upstreams has already gone. In this case, we removed the advertising board of circular economy last year.'

The above evidence seems to reveal that as the trend of saturation and overcapacity becomes more apparent, relevant enterprises (whether the potential PVC producers or processors) no longer stood out to participate in the local plan to create a chlor-alkali circular economy in Manzhuang. DIPC's attempt to build a circular economy industrial chain through 'liquid chlorine - PVC production - PVC processing' seems difficult to realise.

6.2.3 The Weak Political Economic Status in the Competition for Pharmaceutical Investors

In terms of expanding the industrial chain to downstream production through manufacturing upgrading, it seems that despite the efforts undertaken to attract new projects, Dawenkou Industrial Park has little advantage when it comes to capturing pharmaceutical investors. The outcome indicates that in Jinan Metropolitan Area, many

pharmaceutical enterprises eventually moved to either Jinan High-tech Zone (JNHZ) or Tai'an High-tech Zone (TAHZ).

After witnessing many emerging projects settling in JNHZ and TAHZ, interviewee MG02, the vice director of the DIPC, talked about the strait (MG02 interviewed on 18th July 2019):

'We are too close to Tai'an High-tech Zone and Jinan High-tech Zone, which basically means that we can only recruit projects they do not want. Loads of promising projects have entered those two places, and we can only pick up the rest. In this case, it is tough for us to attract certain pharmaceuticals in order to extend our industrial chain towards high-end in Manzhuang.'

This comment reflects the *status quo* in Tai'an city-region and Jinan city-region. The author observed from the survey that within Tai'an city-region and Jinan city-region, the DIPC, TAHZ and JNHZ as three independent industrial parks have been treated differently by the municipal governments. They selectively empower the TAHZ and JNHZ with higher political-economic status vis-à-vis Manzhuang.

From the perspective of organisational affiliation and the administrative level of institution, the DIPC is an agency that is directly dispatched by the Daiyue district government at the town level (*zhengkeji*). In comparison, the committee of TAHZ is an agency directly dispatched by Tai'an municipal government at the district level (*zhengchuji*). The Committee of JNHZ is an agency directly dispatched by Jinan municipal government at the vice municipal level (*futingji*). From the perspective of the administrative level of the top official, the leadership of the DIPC is at the town level, the leadership of the TAHZ committee is at the vice municipal level, and the leadership of the JNHZ committee is at the municipal level (*zhengtingji*). It is also listed as a member of the Standing Committee of the Chinese Communist Party in Jinan.

Table 6.2: Jurisdictional comparison between DIP, TAHZ and JNHZ

	DIP	TAHZ	JNHZ
Establishment time	2003	1994	1988
Area	46.8 km ²	277 km ²	318 km ²
Population	110 thousand	268 thousand	407 thousand
Number of jurisdiction units	1 town	3 towns	5 towns
Organisational affiliation	Daiyue district, Tai'an city	Tai'an city	Jinan city
Administrative level of the institution	Town level (<i>zhengkeji</i>)	District level (<i>zhengchuji</i>)	Vice municipal level (<i>futingji</i>)
Administrative level of the top official	Town level (<i>zhengkeji</i>)	Vice municipal level (<i>futingji</i>)	Municipal level (<i>zhengtingji</i>) Member of the Standing Committee of the Chinese Communist Party in Jinan

(Sources: Adopted by the author based on relevant information)

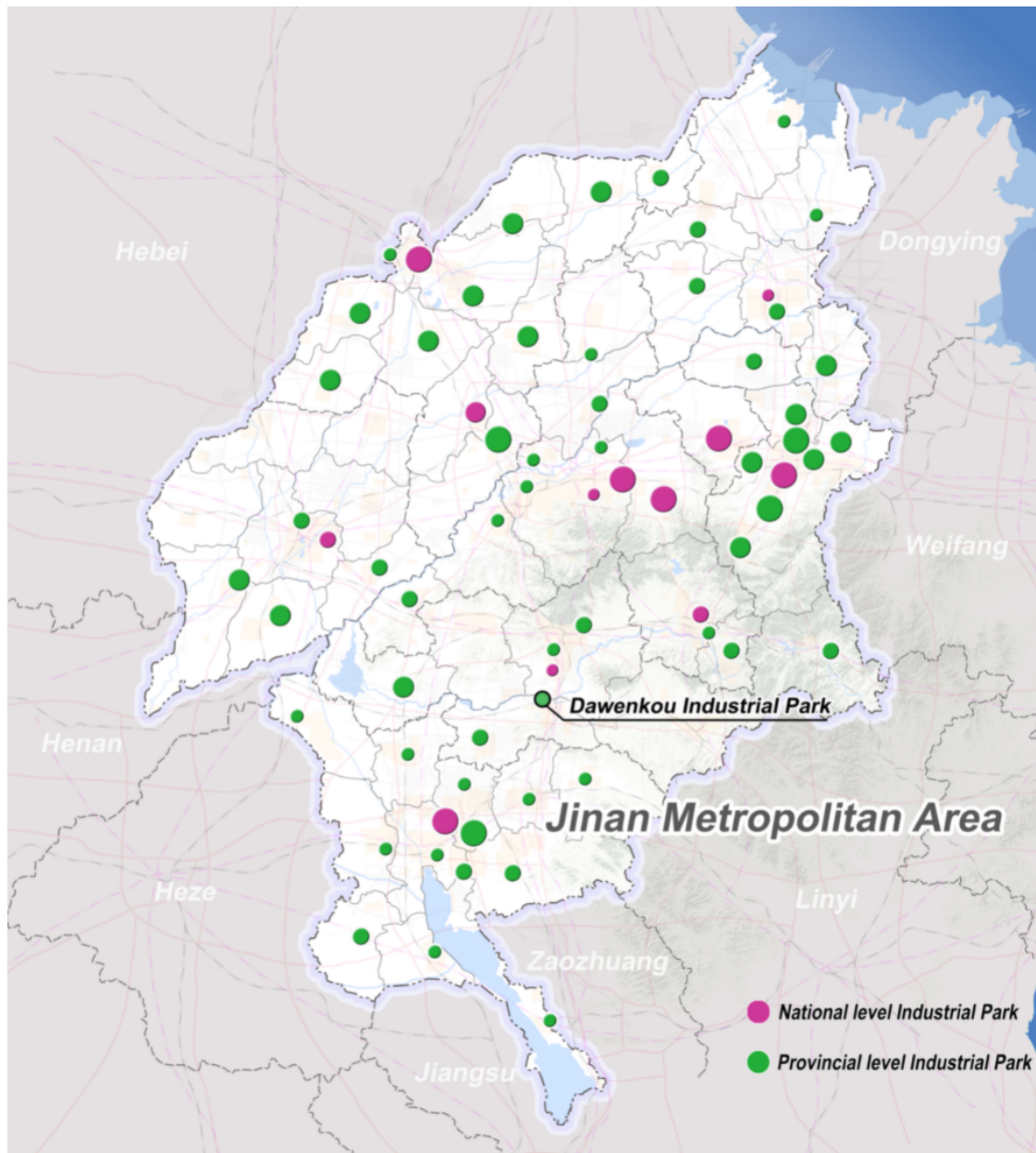
From the perspective of certification level, the application of the development zone and high-tech zone has started to blossom nationwide since the “reform and opening up” at the local scale. In the Jinan Metropolitan area where Dawenkou Industrial Park was located, there have been 68 development-oriented parks total that are densely located including 6 national development zones, 6 national high-tech zones, 43 provincial development zones, and 13 provincial high-tech zones (Table 6.3 and Figure 6.3).

Table 6.3: Number of development-oriented parks in Jinan Metropolitan Area

National Level (12)		Provincial Level (56)	
National High-tech Industrial Development Zone (6)	National Economic and Technological Development Zone (6)	Provincial Economic Development Zone (43)	Provincial Industrial Park (13)

(Sources: Adopted by the authors based on Shandong Urban & Rural Planning and Design Institute, 2019. Research on the development strategy of Jinan Metropolitan Area)

Figure 6.3: The spatial distribution of the development-oriented parks in Jinan Metropolitan area



(Sources: Adopted by the authors based on Shandong Urban & Rural Planning and Design Institute, 2019. Research on the development strategy of Jinan Metropolitan Area)

However, as confirmed by interviewee MG37, a retired former director of the economic development bureau of the DIPC, they were reminded regretfully (MG37 interviewed on 9th August 2019) that the Tai'an municipal government has supported the DIPC in applying for the Shandong provincial-level development zones in 2005. Nevertheless,

TAHZ and JNHZ were supported by the Tai'an municipal government and Jinan municipal government in relation to the application of national development zones as recognised by the State Council of China.

Table 6.4: Level of certification of DIP, TAHZ and JNHZ

	DIP	TAHZ	JNHZ
Certification level	Shandong provincial government (2006 approved)	Shandong provincial government (2006 approved) State Council (2012 approved)	State Council (1991 approved)

(Source: Adopted by the author based on the relevant information)

From the perspective of the strategic development position within urban planning, the DIP (Dawenkou Industrial Park) has been stipulated by the Tai'an municipal government as the *industrial concentration area of Daiyue district and one of the industrial groups in the south of Tai'an City*. TAHZ and JNHZ were designated by Tai'an municipal government and Jinan municipal government as *science and technology centres and part of the new industrial highland of Tai'an* and the *science and innovation corridor of Shandong Province* respectively (MG13 interviewed on 22nd July 2019).

Table 6.5: Comparison of the strategic planning positions of DIP, TAHZ and JNHZ in relation to the regional development

DIP (Manzhuang)	<p><i>Master plan of Manzhuang town 2004-2020:</i> A modern central town and a southern industrial zone of Tai'an city.</p> <p><i>Master plan of Dawenkou Industrial Park 2004-2020:</i> A new town of industry and trade development in the south of Tai'an city.</p>
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	<p>A modern new industrial park characterised by gypsum and chemical processing.</p> <p><i>Master plan of Manzhuang town 2012-2030:</i></p> <p>Undertaking the industrial relocation of Tai'an central city to increase its development as a provincial industrial park.</p> <p>Leading the regional growth and scientific and technological innovations as part of the economic development of Daiyue district.</p>
<p>TAHZ</p>	<p><i>Outline of the 12th Five Year Plan for the national economic and social development of Tai'an City:</i></p> <p>The strategic highland of independent innovation and the head of the high-end industrial belt in Tai'an.</p> <p><i>Development plan of the economic circle of the provincial capital urban agglomeration 2013</i></p> <p>An innovation-driven pilot area, industry research demonstration area, high-end service gathering area, and a new urban area with a modern atmosphere in Tai'an.</p> <p><i>Tai'an City Master Plan 2011-2020 (2017 Edition)</i></p> <p>A beautiful new area and a new city of science and technology suitable for living and working with an accelerated gathering of high-quality education, health, medical treatment, culture, and other resources.</p> <p><i>Developmental strategic plan of Tai'an's High-tech Zone:</i></p> <p>The sub-centre of Tai'an City – a green ecological new city</p>

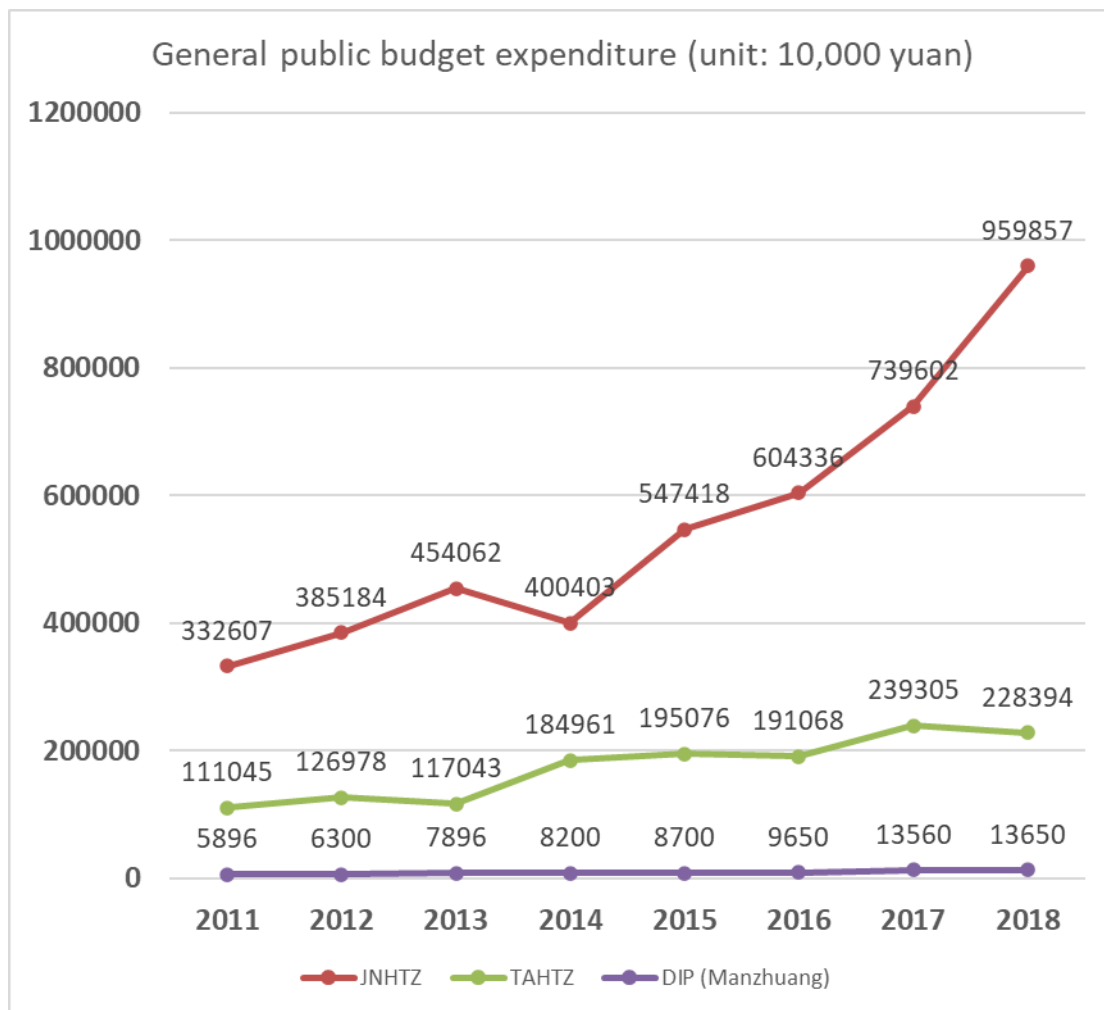
	<p>and a new industrial science and technology area.</p> <p>The main field of economic construction, the main plot of kinetic energy conversion, and the main platform of investment and talent attraction (<i>shuangzhaoshuangyin</i>) of Tai'an city.</p>
<p>JNHZ</p>	<p>The strategic plan of Jinan's urban development (2018-2030)</p> <p>A new driving force leading the zone of high-tech industry, the frontier zone of innovation and transformation, the smart and harmonious new urban area, and the new international opening-up in Jinan city.</p> <p><i>Outline of the 13th five-year plan for the national economic and social development of Jinan's high-tech zone:</i></p> <p>A world-class high-tech park serving as a great central platform for regional scientific and technological innovations in China.</p> <p>A leader in scientific and technological innovation in the Shandong Province.</p> <p><i>Opinions on implementing the national strategic action for ecological protection and high-quality development in the Yellow River Basin:</i></p> <p>Bearing area for the 'Qilu scientific innovation corridor' and the 'intelligent manufacturing corridor'.</p> <p>A place with the 'Innovation circle of Shandong Industrial Research Institute', the 'Innovation circle of Chinese Academy of Sciences' and the 'International Life Science Park.'</p>

(Source: Adopted by the author based on the relevant planning documents)

Moreover, from the perspective of the annual budget, giving the example of 2018, the

relevant data indicated that the DIP only had a public budget of 135.6 million yuan as the source of all expenditure. On the contrary, JNHZ and TAHZ have kept far more general public budgets with an expenditure up to 9598.6 million yuan and 2283.9 million yuan, respectively. Approximately, this meant that the budget of JNHZ was 70.8 times more than that of the DIP. The budget of TAHZ was 16.8 times more than that of DIP. Given the vast gap in the budget, it was indicated by interviewee MG28, the vice director of the financial and tax centre of the DIPC (MG28 interviewed on 15th August 2019), that with the absence of transfer payments from Tai'an city region state in 2018, Manzhuang was only reliant on 3.27 million yuan from Daiyue district government to improve the public facilities and services in the DIP.

Figure 6.4: The Annual General Public Budget Expenditure of DIP, TAHZ and JNHZ from 2011 – 2018.



(Source: Adopted by the author based on the statistical information offered by the survey)

In this case, to maintain the progression of economic development, the DIPC had to give up the idea of manufacturing upgrading and return to the original plan of primary industrial production and processing. This was what interviewee MG04, one of the vice directors of the DIPC who was in charge of investment promotion in Manzhuang, frankly put forward (MG04 interviewed on 23rd July 2019). Due to the anxiety of getting taxes from the industrial projects, the DIPC was open-minded about whether the rest of the land should still be reserved for new material and the pharmaceutical industries. A large number of plots in the DIP were occupied by various projects unrelated to upgrading the industrial chain. It was also confirmed that four new unrelated enterprises were the most likely to settle down in the next two years. Among them, one was a paint factory attracted from Beijing, one was an enterprise engaged in petrochemical production drawn from Shanghai, one was an enterprise engaged in rubber tire production drawn from Jinan, and one was an enterprise involved in waste metal and electronics recycling drawn from Shenzhen (DIPC, 2019). Under this scenario, the option of manufacturing upgrading was almost abandoned according to the future development pathway taking place in Manzhuang.

Table 6.6: Timeline of the manufacturing upgrading in Manzhuang

2017	<p>Formulating the chemical industry plan in which the manufacturing upgrading has been greatly stressed.</p> <p style="text-align: center;">Sending working groups for the targeted investment attraction of fine chemicals, pharmaceuticals, and new materials.</p>
2019	<p>The sidelining of the scheme of manufacturing upgrading due to the confirmation of the four big projects.</p>

(Source: Author)

In this sense, interviewee MG05, the deputy director of the DIPC, complained pessimistically that the low political-economic weight led to the failure of Manzhuang's industrial upgrading (MG05 interviewed on 24th July 2019):

'In the beginning, our DIP, JNHZ and TAHZ are similar random suburban assemblies of small towns and villages. There is no difference... But since the day when

DIP, JNHZ and TAHZ were established, each of our destinies has been almost pre-determined... Our efforts (on manufacturing upgrading) are not important anymore – because it is bound to fail.'

6.2.4 The Consequential Disqualified Local Provisions

It is debated in the literature on territorial competitiveness that comparative advantages (Jessop, 1998; Begg, 1999), urban bundle assets (Docherty et al., 2004) and (quasi-) public goods (Zhang, 2011) are conceptualised as the keys to winning the inter-locale competition for inward investment. Based on the survey, this study suggests that the gateway effect, brand effect, imaginative development prospect, and the public amenities and infrastructure as part of the particular representation of the comparative advantages, urban bundle assets or (quasi-) public goods can be used to determine the attraction felt by the pharmaceutical investors in response to the different political-economic status of DIP, TAHZ and JNHZ.

Gateway effect

First of all, the gateway effect was observed. The interviews show that the DIPC's low status in terms of administrative hierarchy has disrupted the provision of political gateway to facilitate the economic - technological support required by the pharmaceutical manufacturers.

For instance, interviewee MG03, the director of the financial and tax centre of the DIPC, mentioned the willingness of the pharmaceutical manufacturers to find a political backer when they were selecting potential locations (MG03 interviewed on 15th August 2019).

'The hidden rule is that pharmaceutical enterprises can only get support within Daiyue district level institutions or officials when they settle in our park. In comparison, the enterprises settled in Jinan High-tech Zone and Tai'an High-tech Zone can get support within municipal level institutions. Especially Jinan High-tech Zone can also get support from the provincial institutions as it is the provincial capital of Shandong...Basically, the more these pharmaceutical enterprises get contacts with higher-level governments and officials, the better state support they can obtain, including the opportunities of subsidies, bank loans, and even establishing a mixed ownership company with the state venture capitals.'

Interviewee MG29, a senior from the financial and tax centre of the DIPC, confirmed that the institution of the high-level development zone was not only capable of solving capital problems for the pharmaceutical enterprises but also that it was able to help them get technological support (MG29 interviewed on 18th August 2019):

'I heard that a very promising pharmaceutical enterprise settled in Jinan High-tech Zone called 'Huaxi', which specialises in making medical cosmetology. Its expansion needs financial support. So the committee of JNHZ acted as an intermediary that the Shandong Industrial Research Institute was introduced to cooperate with Huaxi with the one-time capital injection of 270 million yuan. And with the matchmaking by the committee of JNHZ, Huaxi can cooperate with the academician team of the Chinese Academy of Engineering in the research of new products in recent years. These things are closely related with the political backup of higher-level development zone which will never happen in our park.'

In this sense, the gateway effect could be understood as the portal role of the government as a medium or participant, allowing the pharmaceutical investors to obtain opportunities for financing and technological cooperation in which the JNHZ and TAHZ had apparently more capability to act than the DIPC.

Brand effect

Secondly, the brand effect was observed. The interviews also found that Dawenkou Industrial Park, due to the low status of the state recognition, could not provide strong brand support for the pharmaceutical manufacturers.

Interviewee DG02, the director of the economic and information bureau of Daiyue district, grumbled about the low state brand effect that Manzhuang has to rely on (DG02 interviewed on 5th September 2019):

'In terms of the recognition of the National Development Zone System, we are only a provincial development zone... However, Tai'an High-tech Zone and Jinan High-tech Zone adjacent to us are national development zones recognised by the State Council...I have seen some cases which some pharmaceutical enterprises make it very clear that

they will only make choices within national level parks. So no matter how hard we try, it is useless. In fact, we had pledged all the most favourable conditions for attracting the pharmaceutical manufacturers to Daiyue district, including the DIP. We made the commitment to provide one-stop service which was responsible for the coordination of all relevant procedures for enterprises from industrial and commercial registration to production and operation. We had also assured to adopt the most preferential tax and land policies stipulated and allowed by the national regulation. But they (Pharmaceutical investors) politely declined... The reason they left us was that the provincial development zones were too low in reputation... We could only say it is something reasonable but unexpected.

Interviewee MG01, the party chief secretary of the DIPC, also believed that the reason why many pharmaceutical enterprises did not choose Manzhuang was that they were trying to ensure that they got a politically-driven reputation as a result (MG01 interviewed on 18th July 2019):

'I talked about this when I had dinner with some potential (pharmaceutical) investors... If they enter the National Development Zone, it seems to imply that they are officially recognised by the national government, which will improve their reputation. It is conducive to their corporate image, public relations and product promotion. However, suppose they settle in a provincial development zone. In that case, they will be misunderstood for not reaching the favour of the national government for some reason, and then the reputation might be reduced... Therefore, it almost becomes the tacit option for many high-end pharmaceutical investors to only select national development zones...'

Imaginative Development Prospect

Similarly, the imaginative development prospect was observed. The interviews explored that the pharmaceutical manufacturers did not choose to locate in Manzhuang because of the disqualified local provision of imaginative development prospects.

Interviewee DG07, an official deputy investigator (*fudiaoanyuan*) from the bureau of land resources and planning in Daiyue district, disclosed that one pharmaceutical

enterprise felt that the future development of the DIP was not satisfactory after comparing the DIPC with TAHZ (DG07 interviewed on 2nd September 2019):

'One example I know is the Microgen Biotech. In 2017, when they decided to invest in Tai'an, they chose between TAHZ and us (DIP). The leaders of the two parks approached Microgen Biotech respectively and introduced the basic situation one by one... Then we were excluded, and the Microgen Biotech hinted that its future development may not be consistent with our future planning outlook, and are more satisfied with the planning outlook of TAHZ.... According to the plan, TAHZ will become a new technological city and a new industrial highland in Tai'an by 2035, while our DIP will only be regarded as the industrial concentration area of Daiyue District by 2035. . . In the end, the Microgen Biotech located in TAHZ.'

For another example, Jinan's High-tech Zone recently proposed attracting targeted investments to form a cluster for the pharmaceutical industry by taking advantage of the overlapping opportunities empowered by the national and provincial planning policies of the *Qilu science and technology innovation corridor, the China-Japan-South Korea Industrial Park, Shandong Free Trade Experimental Zone, and Jinan Comprehensive Bonded Zone*. Based on the advantages, the pharmaceutical cluster was proposed to form the Jinan Life Science City, Jinan Medicine Valley, and the new provincial growth pole in the next 5-10 years at which time the JNHZ will become one of the national core innovative areas in China (JMG, 2019). According to the information provided by MG38, a retired official who used to take part in the investment and promotion of work in the high-end industry of the DIPC, the investment propaganda from Jinan directly led to one small pharmaceutical enterprise that was originally intending to locate itself in Dawenkou Industrial Park. Instead, it moved to the Jinan High-tech Zone (MG38 interviewed on 9th August 2019):

'Despite it was small-scaled, we attracted one pharmaceutical enterprise in late 2017. We had a very constructive talk and signed the Letter of Intent. But as soon as the slogan of Life Science City from Jinan High Tech-zone was advocated, this enterprise began to suspend the investment process and then went to Jinan to learn more about the information there. As a result, they haven't signed the final contracts

with us in the end... The reality sounds a bit unfair. While we treat them like precious, the JNHZ only treat them like normal, but eventually they choose JNHZ to invest.'

In this sense, interviewee MG21, the section leader of the investment promotion unit in the DIPC, added the following (MG21 interviewed on 4th July 2019):

'I contacted several pharmaceutical enterprises and found that these enterprises felt that there was no development prospect in our place... I mean, we are all small goals, but they need ambitious goals... It seems that our visions in planning document can affect their upper development limits... Compared with the insignificant blueprint that we can provide, the planning objectives of Jinan High-tech Zone are enormous high, and the enterprises seem to be completely inspired by the local ambition there...'

Public Amenities and Infrastructure

Last but not least, as explored in the survey, it was also the disqualified local provision of public amenities and infrastructure that resulted in the pharmaceutical manufacturers not choosing to locate themselves in Manzhuang.

As confirmed in the interview, it was difficult to attract technical employees to come to work as the public services had not reached certain standards. It became a major concern for the pharmaceutical manufacturers to invest in Manzhuang. Interviewee DG08, the head of the planning section of the bureau of land resources and planning in Daiyue district, gave evidence to this end (DG08 interviewed on 2nd September 2019):

'I know a case. The DIPC has invited investment from a pharmaceutical enterprise about two years ago. But when they came, they only built an office building, and there was no production line under operation... Not long ago, they said to the DIPC that they wanted to withdraw their investment. The main reason they gave was that after they decided to move to Manzhuang, no staff would like to come after the plant was built here... Now we are ready to reclaim the land.'

In this sense, the poor public services in Manzhuang also had a negative impact on the attempt to attract pharmaceutical investors. This is because their employees have higher

requirements in terms of the local public services. There was a significant gap found in the public service of Manzhuang where there is no commercial complex, no AAA class hospital¹⁸, and no key middle school (MG11 interviewed on 19th July 2019). For instance, the medical care and facilities still fail to meet the population needs. *'The utilisation rate of medical care beds has reached almost 100% since 2005, and due to the ageing and insufficient facilities, it is impossible to guarantee the basic needs of residents for medical conditions, resulting in many patients in Manzhuang having to enter the central city for medical treatment (MG11 interviewed on 19th July 2019).'* Moreover, the educational facilities still fail to meet the needs of the population as well. As had been calculated, to raise *'the education level of Manzhuang to the level of advanced districts, the education resources still needed to be increased twice to offset the population growth (MG11 interviewed on 19th July 2019).'* In comparison, there had been seven AAA hospitals, four provincial key schools, eight commercial complexes, and around seven museum and exhibition centres built up or initialised in and close to JNHIZ. There has also been one AAA hospital (the People's Hospital of TAHZ) and one provincial key school (the south campus of Tai'an No.1 middle school) built up in TAHZ, with one commercial complex being proposed as recently as 2019.

Besides this, the DIPC has had insufficient financial resources to fund its essential infrastructure. In 2017, the DIPC proposed building one water plant, one gas station, one 110kV substation, and four 35kV Power lines for industrial production, and seven main roads for transportation (MG09 interviewed on 14th August 2019). Due to a lack of nearly 300 million yuan, the scheme was delayed for almost three years (MG08 interviewed on 14th August 2019). For the same reason, the proposal for an industrial pipeline system was postponed indefinitely after it was proposed in 2017. Interviewee MG15, the section head of the engineering unit of the DIPC, said as much (MG15 interviewed on 11th July 2019):

¹⁸ The AAA class hospitals in China are large provincial, municipal clinical, or affiliated hospitals of medical colleges. Compared with other hospitals that are medium and small that normally operate at the city, county, district or working unit level, the AAA class hospitals have the best doctor quality, medical expertise level, and facilities in the city-region.

'In terms of infrastructure, we simply don't have the money to improve it. The integrated industrial pipeline system has become the standard equipment of advanced development zones, including Jinan High-tech Zone and Tai'an High-tech Zone. But we cannot afford to build it. What's more obvious is that we even don't have the money to fix the roads right now. . . Now, when we accompany the potential investors to visit our site, we have to do some cover-up to avoid directing them to go over the road that we have not repaired. This situation makes us have no confidence in the competition with others let alone attract some high-end pharmaceutical investors from them.'

To summarise, it seems the due to the different political-economic status among DIP, TAHZ and JNHZ, the DIP (in fact, the town of Manzhuang) has consequentially had disqualified local provisions on gateway effect, brand effect, imaginative development prospect, and the public amenities and infrastructure. Thus, pharmaceutical manufacturers felt reluctant to invest in Manzhuang. Therefore, the DIPC's careful arrangement on extending (green) industrial chains has been failed.

Alongside the event of extending green (industrial) chains, the DIPC also made bold attempt to boosting leisure tourism in which making the Tianyi Lake Resort became the key focus. In the next section, major practical difficulties in the operation of Tianyi Lake Resort are going to be explored.

6.3 Inescapable Problems when Boosting Leisure Tourism - the Making of Tianyi Lake Resort

6.3.1 Rushing into Construction

Tianyi lake, formerly known as Shengli reservoir, with a storage capacity of 46 million cubic meters, was built in 1978. In 2003, Tai'an municipal government decided to enhance the function of water storage and flood control because the Shengli reservoir was overdue for repair. Still, its landscape as a tourism attraction was not yet explored. In keeping with transforming the DIP into a new eco-industrial town, the new leader of Dawenkou industrial park after taking office in 2015 hoped to put an effort into the whole town through projects with a higher topicality and timeliness (TD04 interviewed on 20th August 2019). As Manzhuang is located in the immediate hinterland of Jinan central city and Tai'an central city, the DIPC pledged to make use of this location's advantage to boost the tourism development by improving Shengli reservoir through a transformation into Tianyi Lake Resort to attract citizens from both Jinan and Tai'an (TD04 interviewed on 20th August 2019). This can enable Manzhuang's economic development to quickly get rid of both resource and industrial dependence, thus realising the transformation of the macro-economic structure (TD04 interviewed on 20th August 2019).

Soon afterwards, the discussion on the feasibility scheme of Tianyi Lake Resort was carried out in full in which three well-known consultant agencies including Zhejiang Yuanjian Tourism Design Company, Tianjin Design Institute and a design institute from the Netherlands were invited (TD04 interviewed on 20th August 2019). Because the concept of building Tianyi Lake Resort was based on transforming the industrial town into an eco-tourism town, which was very consistent with the national policy advocacy of 'ecological civilisation', it quickly got the support of the superior government. The interviewee gave a clue that after several reports and the persuasion of the leaders of Daiyue district and Tai'an municipal governments regarding the launch of Tianyi Lake Resort, it was successfully listed as the annual key project of Tai'an municipal government (TD01 interviewed on 19th August 2019).

Subsequently, more than ten persons in the DIPC conducted a nationwide project investigation for three months. The Taishan Tianyi Lake Tourism Development Company (TTLTD) was officially reorganised into the leading platform undertaking the task (TD01 interviewed on 19th August 2019). At the same time, to raise sufficient construction funds (the total investment of the project was 501.3 million yuan), the DIPC initialised a PPP scheme with Jiangsu Senhe in which 350.9 million yuan in loans were obtained through select financial institutions ¹⁹ (Bureau of Finance, Daiyue district, 2016).

The construction started in October 2015. This specifically included the construction of various scenic spots packed into the Taishan Flower Ocean project, for instance, Shili Huadi (also known as the One-thousand-acre flowers), the Tai'an Eye - Ferris wheel, Panda Island, Ruyi Art Gallery, and Shouting Spring. It also included ancillary scenic spots directly invested in by the DIPC with approximately 230 million yuan in loans injected by the Chinese Development Bank and China Agricultural Development Bank (TD02 interviewed on 19th August 2019). This was represented by the MoMA City of Vainly Hope (also known as the Dream City Wedding Photography), including Little Dream Town, Flying Experience Home, Orange Hotel, the Taishan World Classic Car Museum, the Waterfront Beach and Food-Beer Square, and the Tianyi Pavilion.

Eventually, Tianyi Lake Resort (Figure 6.5 and 6.6) opened on 8th April 2017 and it was successfully selected to be a national 4A scenic spot in the same year (TD01 interviewed on 19th August 2019). In the meantime, a series of mega-events began to be held one after another including the Dutch tourism festival, the beer-music-food festival, a summer-study tour, the Lake marathon, and one thousand people blind dating.

¹⁹ The total investment of the project was 501.31 million yuan and the proportion of registered capital was 30% (150.4 million yuan). Among them, social capital accounted for 90% (135.36 million yuan), while the state-owned capital accounted for 10% (15.04 million yuan). The remaining capital was raised by the SPV (special-purpose-vehicle) project company through bank loans, shareholder loans, funds, and other means.

In this setting, Tianyi Lake Resort was expected to receive 3 million tourists annually with a comprehensive income of more than 300 million yuan. This would be able to stimulate more than 5,000 tourism-related jobs (DIPC, 2017). With the successful construction of Tianyi Lake Resort, two former leaders of the DIPC who initiated the projects were promoted to higher positions in the Tai'an Station New Area Committee and the Shandong Lushang Land Development Group later on (MG33 interviewed on 17th June 2019).

Figure 6.5: The main entrance and tourist guide map of Tianyi Lake Resort



(Source: Author)

Figure 6.6: An overview of Tianyi lake and the lakeside beach and green space



(Source: Author)

6.3.2 The Inadequate Operating Income – Repetition, Incompatibility, and the Consumption Deficiency

However, the boosting of tourism by Tianyi Lake Resort was not a pleasure cruise. After its opening, the operation of Tianyi Lake Resort soon encountered an economic problem where the operating income was rather more unsatisfactory than expected.

According to the calculations undertaken by the financial controller of TTLTD (TD03 interviewed on 19th August 2019), the annual operating revenue of the whole scenic spot was 24 million yuan. However, the human cost and daily operations, as well as the maintenance and marketing cost, totalled about 56 million yuan. If the bank interest and depreciation are added, the cost reaches 110 million yuan. In other words, the Tianyi Lake Spot has lost at least 34 million yuan in just one year. As the only profitable project of the MoMA City of Vainly Hope, all other projects are losing money to varying degrees (TD03 interviewed on 19th August 2019). To maintain the operations and to fill in the financial loopholes from the government side, Dawenkou Cultural Tourism Development Centre intervened under the instruction of Daiyue's district government - its subordinate Dawenkou Tourism Real Estate Company had taken over the deficit to provide a cash flow to maintain the daily expenditure of Tianyi Lake Spot (TD03 interviewed on 19th August 2019).

The survey found that the three adverse factors of repetition, relevance from the supply side, and the deficiency of consumption power from the demanding side had caused the low economic performance of Tianyi Lake Resort.

(1) Repetition

It was found from the survey that the Tianyi Lake Spot had a high replicability. Despite the market scope designed to radiate the nature of the citizens in Jinan Metropolitan Area, there are nine other similar reservoir-transformed lake resorts in the Jinan Metropolitan area. This situation has caused a large number of tourists to visit the other lake resorts. Quoting one of the comments from the marketing manager of TTLTD (TD07 interviewed on 21st August 2021):

'Compared with other existing reservoir scenic spots in Jinan Metropolitan Area, our project is nothing different. We are all waterfront space, with catering, some novel buildings and projects... For tourists, there is little big-difference in experience.'

The comment had revealed that the so-called novelty of the Tianyi Lake Resort made by the DIPC was a copy and paste of a standard recipe (Harvey, 1989b). The Tianyi Lake Resort is not unique in any way. As a result, it is a clone city (Law, 1993) and suffers from the cookie-cutter effect (Doucet, 2007). In such an effect, in urban entrepreneurialism, many flagship projects that are designed to boost tourism simply follow a mediocre formula duplicating previous seemingly successful developments in the hope of attracting more visitors. However, in this case, it has suffered the same fate as the attractiveness paradox where the commodification of a space that both initiators and imitators alike share end up with limited returns.

Specifically, as has been explored in this research, the Dream City Wedding photography project and the Flying Experience Home Project were directly franchised from Shanghai and Beijing respectively. Because of the budget constraints, the two projects were simplified replicas compared to most of the chains set up in other places. The Orange Hotel, as the only accommodation for visitors for overnight stays at the Tianyi Lake Resort, was a typical budget hotel operated by a franchise system. This is exactly like many identical branches across the country. The conversation with interviewee TD02, one of the vice general managers of TTLTD, provided more opinion on this worry (TD02 interviewed on 19th August 2019):

'We have tried our best to create uniqueness and hope to attract more tourists... But to be honest, nowadays, how can so many new-build projects be unique and original? They are all tacky, copied and chained. For example, our so-called new project, the dream city, is just a small chain store from Shanghai, and the pilot experience home is another small chain store from Beijing. Hotels are even more chain-like that there are hundreds of identicals all over the country... They are not new, the tourists do not come, and we can't help it.'

This comment reflected that major project components of Tianyi for the most part were heavily franchised rather than being inspired by indigenous history or nature, thereby losing its unique-attractiveness (Rodriguez et al., 2001; Simms, Kjell and Potts, 2005)

(2) Incompatibility

Manzhuang is a feature of the industrial landscape of the chemical and thermal power plants according to the DIP. This seems to contradict with Tianyi Lake being a tourist resort. The tourists can still see the towering chimneys and exhaust gases from many of the viewpoints when visiting Tianyi Lake Resort (Figure 6.7). This has seriously affected the atmosphere of Tianyi Lake as a leisure place. One of the members of staff who worked in the Flower Ocean said the following (TD08 interviewed on 21st August 2019):

‘The landscape of our scenic spot itself is very good. There are precious tree species, large lawns, fish and birds, which are as beautiful as the European countryside. However, ironically, as soon as I look up, I can see the chimneys and grey smoke not far away from us... In this way, no one will want to come here for vacation, even if the scenic spot itself is beautiful – the reason is straightforward, it cannot be clear anymore that Manzhuang on earth is an INDUSTRIAL AREA.’

Figure 6.7: An overlook of towering chimney and reaction furnace from the beach of Tianyi Lake Resort



(Source: Author)

Besides, interviewees MG12, MG13 and MG14 (MG12 interviewed on 19th July 2019; MG13 interviewed on 22nd July 2019; MG14 interviewed on 22nd July 2019), three staff from the planning unit in the DIPC also doubted the chaotic combination of the various projects in Tianyi Lake Resort. For them, some of them seemed to not be relevant at all to the local characteristics. As MG12 said:

‘ These things are combined in a mess and in a hurry, which looks very strange for me - The Ferris wheel overlooking the chemical industry zone, the two pandas suddenly popping up in the glasshouse on the island in the middle of the lake(see Figure 6.8), the Ruyi gallery with the southern Chinese architectural style instead of our local Taishan-folk-house style, the hysterical shout spring, as well as the wedding photography base with ancient castle decoration of the 16 European countries(see Figure 6.9), the classic car museum embedded into an office building (see Figure 6.10)...It's just too strange to make a profit!’

Figure 6.8: The artificial panda island and a panda in glasshouse



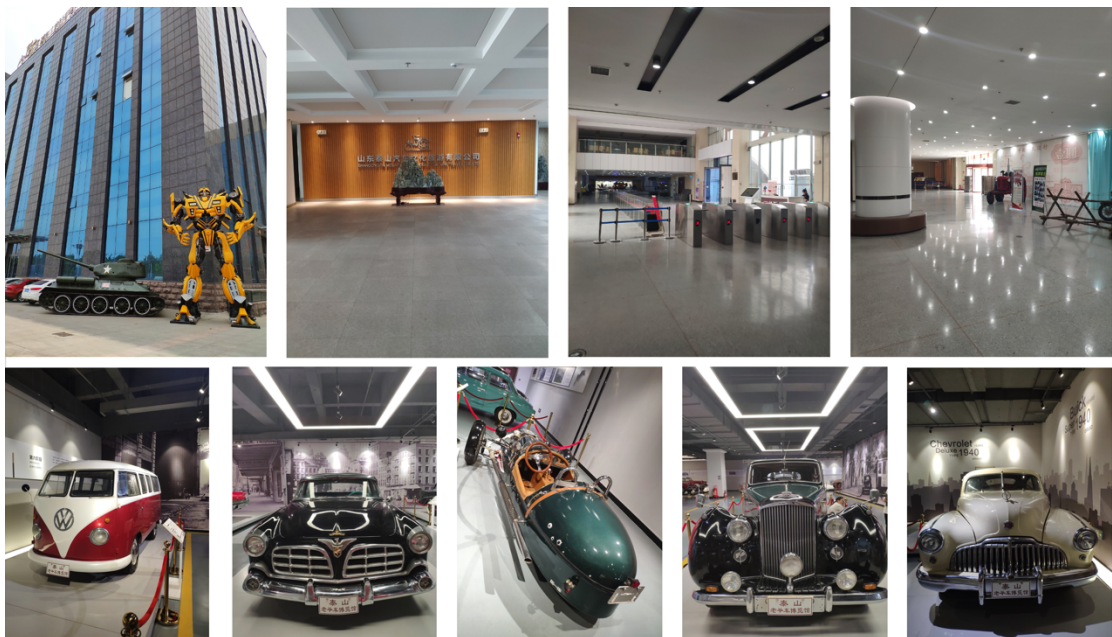
(Source: Author)

Figure 6.9: The collage of 16 European architectural styles in the wedding photography base



(Source: Author)

Figure 6.10: The vantage cars displayed in an office building



(Source: Author)

The interviewees' query reflected the major concerns regarding the visiting desirability of the various projects newly constructed at Tianyi Lake Resort since they were bizarre without representing any of the local features and therefore might make citizens feel

odd.

(3) Deficiency of Consumption

From the demand side, it was not difficult to find that the citizens nearby seemed to have a rather low desire to spend money on tourism, as evidenced by the interviews. This could be deduced from the interview with TD06, the operation controller of TTLTD (TD06 interviewed on 20th August 2019):

'We now have about 1.6 million tourists every year, but the most unacceptable thing is that the per capita consumption of tourists is too low. Our statistics show that the per capita consumption of tourists who come to Tianyi lake is less than 15 yuan. Most of them only play at our free scenes... Although many marketing methods have been adopted, and large activities have often been held, tourists usually don't choose to enter the paid spots.'

Another interviewee, TD09, who was in charge of the food and accommodation in TTLTD, provided more details (TD09 interviewed on 21st August 2019):

'There is only one hotel (the Orange Hotel) with 93 rooms along the beach of Tianyi lake, and every day our hotel has many half-price rooms... But the average daily occupancy rate is still only 30% throughout the year. Although our resort is very large and we have set up many leisure projects to extend tourists playing time, tourists still go back and forth on the same day and don't spend the night with us. Even more, half of the tourists will not even go to our Food-Beer Square for lunch to save money.'

Although the interview confirmed the fact that citizens do not spend a lot of money in Tianyi Lake's scenic spot, however, it may not be that the citizens do not want to spend money. Instead, it is because they do not have enough money to spend. Statistics show that in the Jinan Metropolitan Area, the per capita disposable income of Jinan's residents was only 41,472 yuan while that of Tai'an residents was 32,062 yuan in 2019²⁰.

²⁰ At the same time, the per capita disposable income of the residents in 2019 was 180,000 yuan in the United States, 170,000 yuan in Germany, 135,000 yuan in Britain, 115,000 yuan in Japan, and 88,200

6.3.3 Distraction Due to Mixed Considerations

If a tourism project wants to make a profit, an important basis is its feasibility which should be purely judged by a professional with the appropriate knowledge. However, as this case shows, the tourism development under urban entrepreneurialism does not keep itself dedicated to the rationale of professional insight.

The information and data collected from the survey revealed the real purpose of the project. Some of the interviewees believed that even though Tianyi Lake Resort could not be profitable as a tourism site for the time being, Tianyi Lake Resort may still be justifiable to a certain extent if the expensive cost could be offset by other economic gains and social benefits. However, it is these mixed considerations that have blurred Tianyi Lake Resort as a focused exercise to boost leisure tourism. It appears that making tourism projects is an applied art rather than a science (Falk, 1986), it is the mere self-justification of a local agency as a highly visible way of spending the budgets as part of the commitment to a place (Cheshire and Gordon, 1996).

(1) Increasing Land Price

In Manzhuang, more effort was likely to be expended on the commodification of land because it was the most vendible place-related commodity for earnings, specifically something highly tangible and associated with a place that could be directly exchanged for money (Ward, 1998). As indicated in the interviews, although building Tianyi Lake Resort itself could not create a direct land income, office complexes and gated housing, beautifying the landscape of the place in other words, could still positively affect the nearby land prices. From this perspective, in the future, it could add value to the real estate when the adjacent land is sold or rented for residential and commercial uses. For instance, MG06, the section head of the land resource unit of the DIPC, appraised the construction of Tianyi Lake Resort because of the rise of the surrounding land prices (MG06 interviewed on 1st August 2019) :

yuan in South Korea.

‘The significance of Tianyi Lake Spot is not only for it as a place of visit, but also for the increase of the land value nearby. Since its opening in 2017, the appreciation rate of residential land has reached 1 million yuan per mu, and the commercial land can also be easily leased at the price of 0.6 million yuan per mu.’

The researcher was told by him that due to the manufacturing industry in Manzhuang having provided a large amount of employment, people in other towns nearby such as Wenkou, Mazhuang, Xiazhuang and even Ningyang were willing to buy their homes there. On the other hand, due to the decline in the highway charges and the expansion of national highway G104, more citizens from Tai’an central city were also interested in purchasing a spacious second home in (post)suburbia. The DIPC therefore attempted to exchange the reserved land at the south and west side of Tianyi lake for real estate profit. Until 2017, there was a total of 5,403 mu of residential land and 1,231 mu of commercial land available for development.

The interviews found that the DIPC was quite confident that the successful land development would eventually bring a balance of at least 1.8 billion yuan into the general ledger after paying off all of the expenses for the construction of Tianyi Lake Resort (MG01 interviewed on 18th July 2019).

At this moment, the DIPC had already contacted developers on the matter. The ambitious feasibility of the proposal included a garden house project that provided citizens with small plots of cultivated land, a golf villa project, a luxurious hotel apartment project, and a pension community project that facilitated a quality life for the elderly (MG07 interviewed on 1st August 2019).

The interviews with the officials explicitly conveyed that the potential for real estate gave the DIPC the greatest incentive to make Tianyi Lake Resort.

If this ambitious land development plan happened, Manzhuang would undoubtedly get a considerable amount of income through land leasing, more than any type of tourist consumption by itself could bring. Therefore, at the outset, there has been less intention

of attracting as many tourists as regular resorts do.

(2) Telling the Story to People

First, the value of Tianyi lake was not to obtain economic returns as a tourist attraction but to help the DIPC tell a story about taking the ecology into account in its development agenda. For instance, interviewee TD02, the vice general manager of TTLTD, believed that although Tianyi Lake had been overspent on, one could not deny the ecological improvements that it brought about, therefore Tianyi Lake Resort was thought not to be a failure (TD02 interviewed on 19th August 2019):

'No matter whether Tianyi lake is profitable or not, it always does not pollute the environment, but it has created an excellent environment. Greening and ecology are also our attributes of building Tianyi Lake Resort.... If we have to measure it by the economy, many saplings bought for 100 yuan each in 2016 must be more than 100 yuan now while they grow bigger and bigger. More importantly, such a large green space has purified the air and improved the health of local residents. If you also measure the people's health and happiness in the economic term, then the making of Tianyi Lake Resort would definitely become a profitable project.'

Especially when talking about the condition of industrial pollution, interviewee MG31, the vice director of the Social Affairs Bureau in the DIPC, tended to take Tianyi Lake Resort as evidence of the DIPC's endeavour to shape Manzhuang from a town that has had a serious chemical pollution for a long time into a green and liveable town (MG31 interviewed on 10th July 2019):

'I think these projects around Tianyi lake are successful on the whole. We said that one of the keywords of this project is ecology and liveability. Because while operating the scenic spot, we are also operating a free and large green space for the local people, which means the government must subsidise to maintain such a large area of trees and flowers... From then on, we are no longer a notorious town with chemical pollution, but a green town that is ecological and liveable.'

The value of Tianyi lake was not through obtaining economic returns as a tourist attraction but helping the DIPC tell a story about its steering ability to continuously lead the local economic development. Interviewee MG02, the vice director of the DIPC who was partly in charge of the construction of Tianyi Lake Resort, emphasised that the DIPC has demonstrated the benefits of local economic growth to the local residents through the construction of a series of new projects packaged in Tianyi Lake Resort (MG02 interviewed on 18th July 2019):

‘We spent tens of millions yuan on building a Ferris wheel. You know, there is even no Ferris wheel in the city centre of Tai’an (Figure 6.11). We spent more than 20 million yuan on building the Tianyi Pavilion, where local historical documents and materials are all displayed, playing the function of a local history museum (Figure 6.12) - which of the surrounding towns can do it like we do? – to spend money on archiving and presenting local history so well? No one! ... Although the Tianyi Lake Resort is not profitable, however, it makes local residents witness the real achievements of the economic development that the DIPC has been dedicated to for 16 years. I think from this point alone, we realise the goals of the construction of Tianyi Lake Resort.’

Figure 6.11: The Ferris wheel in Tianyi Lake Resort



(Source: Author)

Figure 6.12: The Tianyi Pavilion and the local history exhibition



(Source: Author)

In a similar vein, interviewee TD01, the general manager of TTLTD, added the following (TD01 interviewed on 19th August 2019):

‘For example, the panda island, which we built an 8,000 square meter exhibition hall for two pandas, including indoor and outdoor spaces. This is the only place to see pandas in Tai’an city-region... Another example is the classic car museum. There are more than 300 vintage cars here. You can’t find a second place to see those old cars in the whole north of China, even in big cities such as Beijing, Tianjin and Jinan... These are the embodiment of our ruling ability. The local residents have also increased their knowledge by such projects.’

The above two interviewees exposed the DIPC’s attempt to emphasise the social benefits brought about by the construction of Tianyi Lake Resort despite the low level of economic performance. It seemed that the DIPC intends to prove that the local residents were sincerely cared for by the DIPC in which the ultimate goal of building Tianyi Lake Resort was to benefit the people.

This situation is similar to the Roman metonymic approach of ‘bread and circuses’, indicating a way to maintain control over population through the simple provision of a

base level of sustenance and exciting them sporadically with spectacles. This has been adopted as a tactic to instil into the population a feeling of gratitude for the ruling class, in addition to distracting them from their daily hardships and problems by indulging them in immersive urban imagery (Eisinger, 2000).

Hence, the making of Tianyi Lake Resort was not so much an attempt to make the place have immediate tourism charms but instead as a device to address ‘social stability’. By telling the story of ecology and pro-advancement to the people, the DIPC has proven how much it cares for them. In this way, the DIPC has ensured that the socio-foundation is kept stable.

(3) Reimagine the Place to Embrace Broader Development Opportunities

Through the interviews, it was also found that the DIPC’s method of ‘telling the story to people’ was concurrently seen as a way of supplanting the old and less favoured image with a more postmodern one in order to facilitate the advancement of the place (Healey et al., 1992). In the interview, the comments made by the DIPC’s staff on their actions strongly indicated their objectives and hopes that Tianyi Lake Resort’s advertising slogan of ‘green, ecological, leading, international, cultural and pleasurable could rid Manzhuang of its image as a highly polluted and uninhabitable chemical producer (MG22 interviewed on 4th July 2019; MG25 interviewed on 14th June 2019; MG37 interviewed on 9th August 2019).

It was unanimously recognised that as early as the decision-making stage, Tianyi was regarded as an expensive spend to create attractiveness for investors. For example, interviewee MG04, one of the vice directors of the DIPC in charge of investment and development, stressed that the Tianyi Lake Resort was a showcase used by the DIPC as a publicity tool to lure in investments. In his words, the real reason for doing so was not to make Tianyi Lake Resort a place to earn much money from tourists but to catch ‘big fish’. In this sense, building Tianyi Lake Resort was a ‘loss leader’ when it came to pulling in other forms of development (Harvey, 1989):

‘The construction of Tianyi Lake Resort has improved the town’s image and the business environment, which is a good thing for DIP. Now when we go to the whole

country to attract investment, we will bring the pictorial of Tianyi lake...In fact, Tianyi Lake Resort itself is a big advertisement. How can we save money on advertising to attract investment? Actually, we don't wish to earn much money on tourists, we wish to catch big fish (MG04 interviewed on 23rd July 2019).'

The Tianyi Lake Resort has been used not only for business conferences (e.g., Tai'an International Investment Conference) but also for advertisements in newspapers (e.g., *Qilu Night Post*, *Life Daily* and *Dazhong Daily*), television (Shandong TV Channel and Shandong Cultural and Tourism TV Channel), social media platforms (e.g., WeChat, Xigua and Douyin), and ground media such as billboard on both sides of the expressway. The total spending has been 7 million 360 thousand yuan (MG30 interviewed on 18th August 2019). In this way, the Tianyi Lake Resort served as a showcase for DIPC. They used it as a large advertising method for local promotions (Smyth, 1994).

6.4 Conclusion

This chapter has identified the structural constraints of the ecological modernisation practices in Manzhuang as exemplified by the emerging local events of extending (green) industrial chains and boosting the leisure tourism development.

In terms of extending (green) industrial chains, the data clearly shows that the chlor-alkali industry has experienced market saturation after years of increased production. Therefore, relevant enterprises in Manzhuang have no intention of increasing the production of PVC to consume the by-product of the liquid chlorine produced from the upstream. This situation has made MZ unable to extend its industrial chain to realise ecological modernisation (circular economy).

Furthermore, the survey then found that in the Jinan Metropolitan area compared with its competitors TAHZ and JNHZ, Manzhuang (DIP) has a weak political-economic status. This is reflected explicitly in the huge gap in relation to the administrative level, the level of certification, the planning direction, and the annual budget. As a result, the DIP cannot provide a high-quality gateway effect, brand effect, or imaginative prospect, as well as the public amenity and infrastructure needed when competing for pharmaceutical investors. This means that Manzhuang lacks sufficient territorial competitiveness whether it is classified as comparative advantages, urban bundle assets, or the provision of (quasi) public goods which are the key to competing with TAHZ and JNHZ. Therefore, it becomes impossible for Manzhuang to extend its industrial chain to realise ecological modernisation (industrial upgrading).

In terms of boosting the leisure tourism development, the survey revealed that after rushing into the design and construction of Tianyi Lake Resort with a large investment and loans, it suffered from an inadequate operating income. Major problems include repetition, incompatibility, and a power deficiency in terms of consumption. Meanwhile, accumulative evidence has suggested that the veiled motivations consisting of increasing the land price, telling the story to people and reimagining the place for extra development opportunities to promote a latent growth appeal and non-economic

harvest has blurred the Tianyi Lake Resort as a focused exercise to boost leisure tourism.

Chapter 7. Discussion: The Structural Problems of Local Ecological Modernisation Practices

7.1 Introduction

By considering the research aim, which is to examine the overarching problems to do with ecological modernisation practices on a local scale in China, especially in relation to the urban hierarchy of small towns, this chapter seeks to address the three major research questions by evaluating the local ecological modernisation under the trajectory of urban entrepreneurialism.

Building upon the empirical findings on Manzhuang in Chapter 6, this chapter starts with the identification and discussion of the structural problems that have affected the local attempts to the extend (green) industrial chains and boost the leisure tourism transition to better realise ecological modernisation separate from the old resource-intensive industrial production and pollution.

Afterwards, a particular focus has been given to the state's tension of China between an authoritarian socialism state to adopt capitalism arising from the local ecological modernisation practices.

Then, this chapter gives a brief response to the production aspects of ecological modernisation theory. Finally, this chapter ends with the response to the core assumptions that ecological modernisation theory has claimed in reference to its ideological conviction. The modified interpretation has been proposed in relation to the political economy of the entrepreneurial growth embodied in the historical process of capitalism development.

In this way, the significance and relevance of this research are expected to be addressed.

7.2 Discussion of Extending (Green) Industrial Chains

7.2.1 Competition-led Rapid Industrial Market Oversupply

This research argues that the inclination of rapid industrial market oversupply driven by the intense inter-locale competition under urban entrepreneurialism is the first structural problem that affects the extending of (green) industrial chains at the local level.

The empirical research in Manzhuang has provided evidence that in the initial development stage of DIP, the presumed closed-loop industrial system of chlor-alkali might be formed by the adding of PVC downstream production lines because the market at that moment still had plenty of space for the expansion. However, as indicated in the survey, both PVC and chlor-alkali production quickly reached a ceiling in about 2013. The current market oversupply has fundamentally made the ideal path of the (green) industrial chain in Manzhuang based on adding PVC production (and processing) unfeasible. In this sense, this research proposes that under the high liquidity of capital, forming a local-based (green) industrial chain has to be subject to the logical patterns of inter-locale competition that are ongoing at the larger regional-wide and national-wide scales because this is the culprit for the rapid oversupply of the industrial production market.

To explain, such a rapid industrial market oversupply of PVC and chlor-alkali production is caused by the so-called 'administrative regional economy' logic (Shu and Liu, 1994; Liu, 1996; 2004; 2006) under the transition of the national economic operation system from vertical (to-down) to horizontal (market-led) in China. The oversupply of PVC and chlor-alkali production is the presentation of self-contained economic landscape of 'large and complete' or 'small and complete'²¹ at the localities that are about to be shaped mainly according to the jurisdictional boundary. Under such circumstances, the local entrepreneurial states tend to accommodate economic activities as fully as possible within their jurisdiction by competing with the others, regardless of

²¹ The "large and complete" refers to the arrangement of full types of industrial activities within large jurisdiction; the "small and complete" refers to the arrangement of full types of industrial activities within small jurisdiction.

whether the final result contributes to an efficient regional and national economic performance or not (Yi et al., 2014). In this way, the fundamental spatial problem of boundary mismatch (Cheshire and Gordon, 1996) - that always appears once the administrative boundaries cover a significantly smaller area than the reality of a larger functional economic region - has been particularly stressed under such intense inter-locale competition under urban entrepreneurialism, leading to the rapid industrial market oversupply.

In addition, speaking from the interactive perspective between the local state and the enterprises, it seems the current industrial market oversupply as displayed in Manzhuang is engendered by the counteract between each local state and enterprise that participated. The investors and firms of PVC and chlor-alkali production lost their rationality as a result of dealing with distorted markets and the factor signals caused by the various preferential policies offered by the local governments with regulatory undercutting (Dunford 1994; Cheshire and Gordon 1996; 1998) under the game of prisoner dilemma (Huang et al., 2018).

In this vein, it can be pointed out that despite the inter-locale competition in the short term gave rise to economic growth (for instance, the rapid expansion of PVC and chlor-alkali production shown in the case), in the long-term, however, the consequential industrial isomorphism and repetition (as represented in the market oversupply of PVC and chlor-alkali production in China) reduced the TFP - total factor productivity (Deng et al., 2019). Thus, due to the final result of inter-local competition - the saturated and unprofitable market, it became economically unworkable to set up more production and processing plants at select localities like Manzhuang as an easy-to-work solution where the (green) industrial chain would consume the waste and by-products of the upstream activities. Thus, ecological modernisation (circular economy) has been ruled out as the current industrial market no longer justifies adding extra downstream production lines.

7.2.2 Growth Pole as the City-Regional Development Principle

This research argues that given the spatio-temporal constraints of the strategic resources,

the difference in territorial competitiveness at each locality resulting from the growth pole principle of the city-region is the second structural problem affecting the extension of (green) industrial chains at the local level.

The case study suggests that pharmaceutical investors have different locational preferences which are unlike the primary manufacturing industries previously settled in Manzhuang. Although the flexible accumulation, from the perspective of less reliance on a large labour supply in traditional industrial areas and insensitive to freight, is more flexible to location selection, due to the higher requirements on place-specific milieu, it is pickier when it comes to site selection than the mass production units (Scott, 1988; Scott and Storper, 1987). This means that only localities with sufficient territorial competitiveness can win the competition for pharmaceutical investors no matter whether it is categorised as comparative advantages (Jessop, 1998; Begg, 1999), urban bundle assets (Docherty et al., 2004), or (quasi) public good (Zhanghui, 2011). However, this research found that the territorial competitiveness across different places is not the same. The rise of urban entrepreneurialism in line with globalisation, marketisation and decentralisation does not make sure that all places are able to compete with each other in an even political environment. Instead, it shows a clear sign of the growth pole principle that the state prioritises some places vis-à-vis the others. Especially at the city-regional level, the local state agencies within the city-regions compete with each other through the capacities both endowed and circumscribed by the city-region state.

For a city-region state, when its strategic resources are limited, the growth pole principle that concentrates the strategic resources into a particular place can ensure the maximum competitiveness of a single point to prepare for participating in inter-locale competition on a larger scale (wider regional, national or international). However, places that have not been selected as growth poles (or only set as small growth poles) in the city-regions are gradually peripheralised for development. And to facilitate such growth pole principle, the territorial dimension of state spatial selectivity (Brenner, 2004; Li, Wu and Huang, 2015; Chen Zhang and Li, 2017; Ma and Tang, 2019) has been engaged in which the city-region state's dominant role has been indicated. Despite the state has transferred power from the nation to the local government through 'state

rescaling' making places generally obtained autonomy to address their exogenous growth in the period of urban entrepreneurialism, however, from the territorial dimension, the state spatial selectivity is heterogeneous in the city-region established as intentional rather than merely incidental by the city-region's municipal government (Peck, 2002, p. 356).

In this way, relating to the spatial organisation of state power, the city-region state first defines the growth pole through administrative restructuring. It has then affected Manzhuang's provision of the gateway effect to pharmaceutical investors as confirmed in the survey. Relating to the spatial strategy and policy of the state, the city-region state defines the growth pole through the support and approval on certificate level and urban planning direction. As a result, the differences in certificate level and urban strategic plans have affected Manzhuang's provision of brand effect and development imagination as concerned by the pharmaceutical investors as presented in the survey. Relating to the spatial allocation of national resources, the city-region state defines the growth pole through the inaction of funding redistribution. The four concepts of public facilities and services, infrastructure, fund, and budget are closely related. Without an active intervention of the city-region state to readjust the funding resources, Manzhuang will never be able to provide potential pharmaceutical investors with public amenities and an infrastructure similar to JNHZ and TAHZ. As a result, the strategic resources have been largely mobilised to localities in a selective way through political (in)action that empowers the growth poles (i.e., JNHZ and TAHZ) over the others (i.e., DIP). Eventually, there is a noticeable gap in the territorial competitiveness of various local places.

In this circumstance, it can be concluded that the places outside the growth poles of the city-regions cannot attract enough exogenous investment for the purpose of building a placed-based (green) industrial chain to achieve local ecological modernisation (macro-economic restructuring through manufacturing upgrading).

7.3 Discussion of Boosting the Leisure Tourism Transition

7.3.1 Innovation Dilemma

This research argues that the innovation dilemma, i.e., the possibility of innovation faced by each locality, is the primary structural problem affecting the leisure tourism transition.

The introduction of tourism and consumption seeks to transform the former industrial city into a 'spectacular' area for tourists and to create new consumer attractions rather than (traditional) production (Hall and Hubbard, 1996). It calls for entrepreneurship as the place needs to be constantly innovative to maintain its success in response to the inter-locale competition (Jessop, 1998).

First of all, it is necessary to note that any innovation as part of the leisure tourism transition needs to be preserved for enough time to incubate (*the dilemma of the long-term nature of innovation*). However, it may be difficult to do so due to the urgent speculation for entrepreneurial growth. As shown in the survey, led by the general annual cadre assessment criteria and the local financial shortage, the DIPC entered the tourism development in a hurry without fully preparing. The whole project took less than two and a half years of planning and design through to operation. This was found to be utterly irreconcilable with the longer time taken to develop a real innovation. As a result, homogenisation and incompatibility became unavoidable. Thus, due to the lack of time needed to incubate innovation, the making of leisure tourism to transform the local economy turns out to be a copy of the typical business model that has been used in neighbouring places. The comment revealed that the so-called novelty of Tianyi Lake Resort was a copy and paste of a standard recipe of local placemaking (Harvey, 1989b). This is because its business models - to transform the existing reservoir into scenic spots, providing waterfront beauty, amusement projects, rare animal displays, catering and vacation facilities as well as to organise some large-scale holiday activities - have already been used nine times in other (post)suburbs in Jinan Metropolitan Area. In this context, it has unsurprisingly suffered from the same fate due to being a clone city

(Law,1993), down to the cookie-cutter effect (Doucet, 2007). This implies that all places end with homogenisation and therefore lose attraction. In similar vein, it is also due to the lack of time taken for innovation, the making of leisure tourism tends to heavily rely on the application of franchises but not well-connected with the indigenous history or nature of place, thereby losing the unique-attractiveness (Rodriguez et al., 2001). As explored in the survey, the Dream City Wedding Photography Project and the Flying Experience Home Project were directly franchised from Shanghai and Beijing. Because of the budget constraints, these two projects were simplified replicas compared to most of the chains set up in other places. The Orange Hotel, as the only accommodation available for visitors for overnight stays at the Tianyi Lake Resort, was a typical budget hotel operated by a franchise system, exactly like the hundreds of almost identical branches across the country. For the same reason of time, the undertaking of leisure tourism to transform the local economy becomes quick and messy, and an illogical composition of elements. The interviewees seemed to query the desirability of the various projects constructed at Tianyi Lake Resort. For example, two caged pandas were suddenly displayed at the island, the Yuyi gallery showed a southern Chinese architectural style in the North, the hysterical shouting spring came from nowhere, the fake castle-like building surrounded by a collage of sixteen European country facade now functions as a wedding photography base, and a classic car museum was converted from a typical office building. In this regard, the leisure tourism transition, which ideally should be a well-organised longer-term innovative composition, in fact, turned out to be a hurried replica and superficial hodgepodge rushed by the local government. As a result, it failed to offer appealing indigenous idiosyncrasy but instead only unpleasant strangeness in regard to the tourist experience.

Secondly, the innovation for the leisure tourism transition needs to consider the local plausibility to fit in such transformation (*the dilemma of innovation in relation to the plausibility of place*). In other words, it seems necessary for the local entrepreneurial state to judge in the beginning whether the place-specific cultural, natural, and other characteristics are available for making a leisure tourism transition. It has been found in this research that there are as many as 112 production enterprises concentrating their manufacturing plants in Manzhuang. Despite the DIPC has made a land-use plan based on the eco-industrial park (town) concept that separates the industrial area from the

tourism area with green belt, the people could still clearly see the giant chimney of the nearby chemical plants at the sites of Tianyi Lake Resort. Perhaps as a (chemical) industrial production cluster of Daiyue district, there is no potential for Manzhuang to transform into a leisure place because the existence of high-density industrial plants itself is in fundamental contradiction to the leisable atmosphere that a lake resort should have.

Thirdly, the innovative technique undertaken as part of the local leisure tourism transition may be already exhausted (*the dilemma of urban innovation exhaustion*). In the urban system, the innovation of entrepreneurial placemaking for leisure tourism has already been created by other competitors in the region. There may be nothing more to innovate because all possible tricks have been displayed to the audience already. In this sense, potential visitors are impervious to the synecdochical and metaphorical effects of the spectacular design (Smith, 2005). As this investigation revealed, many of the tourists believed that they had seen some ‘novel’ architectural layouts and entertaining landscapes and facilities in other places many times. This led to the series of spectacular projects packaged in Tianyi Lake Resort having no freshness to them. Therefore, most visitors come to the here only one time and do not expect to be there again.

Last but not least, the emergence of practical innovation as part of the leisure tourism transition is largely accidental rather than unequivocal (*the dilemma of innovation occasionality*). The selling points appearance may be by chance. The causal relationship used to define the success or failure of innovation is too complex to see through in advance. It can only be found after various attempts have been made by the local entrepreneurial state. In this case, Tianyi Lake Resort is one of these attempts. Its construction cannot guarantee success nor can the DIPC accurately predict and control the input-output ratio before its operation. Given this, the local entrepreneurial state should be prepared to understand the risks and failures possible before undertaking any innovation to address the local leisure tourism transition.

In a nutshell, the local ecological modernisation (macro-economic restructuring by leisure tourism industry) is precarious because of the innovation dilemma existing in urban entrepreneurial placemaking.

7.3.2 Constraint of the Consumption Market

According to the outcome of this research, the author argues that the constraint of the (city-)regional demand market as featured by the finite consumption market volume and the slow-budding consumption power have become a rising structural problem affecting the leisure tourism transition.

The local government's initialisation of tourism development on a temporary or permanent basis might be regarded as an urgent attempt to bid for a new market position in the regional division for consumption. However, the (city-)regional consumption market volume is finite. Under urban entrepreneurialism, the inter-locale competition has led to the serial production of many types of flagship project, such as world trade centres, waterfront developments, and shopping malls in the urban system (Green, 1988; Judd, 1999; Harvey, 1989; Booth, 2019). Considering the finite market volume, there are too many places competing for too few visitors. It is simply not possible for every city that wants a major tourism flagship to have one (Evans, 2005). It is almost an iron-clad law that any endeavour designed to make a particular place more appealing as a consumer centre will always be quickly imitated elsewhere and everywhere under urban entrepreneurial competition, rendering any success within a system of cities ephemeral (Harvey, 1989). Both initiators and the subsequent imitators alike have all ended up with diminishing economic returns because of the consumption market redundancy (Coles, 2003). Hence, the seemingly 'crowding' phenomenon observed is essentially a consumption version of severe inter-locale competition (see 7.2.1). Extrapolating from the evidence, there was already an oversupply of suburban lake resorts when considering the current consumer purchasing power in Jinan metropolitan area. It is then no surprise that places like Manzhuang have earned little attention from tourists as one of the suburban lake resorts in the Jinan metropolitan area.

Moreover, China's slowly rising local consumption power is still deficient and not fully capable of fuelling urban entrepreneurialism on spending money for leisure. It has been pointed out that under the trajectory of urban entrepreneurialism, approaches to place marketing are increasingly prone to setting budgets for image construction under the trend that the capitalist aesthetics and lifestyle tend to be postmodern and consumerism

focused (Paddison, 1993; Gold and Ward, 1994). This implies that there is a need for affluent consumption power in advance to sustain a series of repackaging actions in which various types of tourism and consumption space are then built.

However, this research found that places in China may still be in the early stage of consumption development (i.e., post-modern consumerism is just about to rise). The amount of disposable money that citizens have for spending on leisure tourism is still at entry-level. For instance, the survey found that the consumption power in Jinan Metropolitan Area is still insufficient. Visitors tend to enjoy free treats while resisting paid programs such as staying overnight in hotels, going to restaurants, or playing ticketed games. Thus, Manzhuang has been unable to profit from these tourists. This is because of the different development stages of the domestic accumulation between China and Western nations, which is essential to feed urban entrepreneurial growth. As Mai and Zhang (2013) argue, Western developed countries have already completed their industrialisation and urbanisation before the rise of urban entrepreneurialism. And so their urban entrepreneurialism predominately serves to deal with the transition of the social production-consumption mode from Fordism to post-Fordism (post-modernism). On the other hand, China is in the middle stage of rapid industrialisation and urbanisation. The task of urban entrepreneurialism is more complex and changeable.

Therefore, despite of these attempts to bid for the new market position for the regional division of tourism consumption, the local ecological modernisation (macro-economic restructuring by the leisure tourism industry) is constantly restrained by the finite consumption market volume and the slow-rising consumption power in the localities in China.

7.3.3 Tourism Transition as a Complicated Device for Multi-Purpose Speculation

This research also exposes the third structural problem that the inclination of the leisure tourism transition under urban entrepreneurialism is likely to turn out to be a complicated political-economic device for multi-purpose speculation.

To maximise growth, urban entrepreneurialism is multi-purpose speculation that the

local state manoeuvres simultaneously in multiple fields relating to production, consumption, living, and national redistribution (Harvey, 1989a; Jessop and Sum, 2000). The critical point is to attract both ‘frictionless’ flows and more concrete ‘frictional’ flows (exogenous investment and talents, etc.) to a place (Anttiroiko, 2014). Then the increased revenue is thus expected to be spent on the next round of placemaking so as to enhance, or at least maintain, the local position and to get a further speculative return (Harvey, 1989a; Hall and Hubbard, 1996).

This research found that regarding the attempt at a tourism transformation, the boosting of leisure tourism by the local entrepreneurial state is not only to attract specific tourists but also to situate this change as a catalyst to increase the possibility of local development opportunities in more general fields. It was found in this research that the local government used the leisure tourism transition as a loss leader to result in a positive effect to entice other investments. The leisure tourism transition has been used to convey to the outside investors and people that it is not just an industrial town with declining low-end and polluting industries. It has become a new town with vitality and differences, and it is therefore able a successful lure to attract more inward investment and a greater population to live and work (Short et al., 1993; Wilson, 1995). The new image offered by the iconic leisure tourism transition of the place is supposed to be saleable and marketable (Doucet, 2007). The survey shows that Tianyi Lake Resort has been constantly used in advertisements in the media and as part of conferences related to investment attraction works.

Furthermore, this research confirms that pursuing a local leisure tourism transition is particularly designed to benefit from capitalist land consumption-occupation consisting of a range of real estate-related developments (Leitner and Sheppard, 1998). As shown in the survey, the DIPC has tried to tie tourism development into real estate. To some extent, Tianyi Lake Resort is precisely tailored for acquiring a massive range of property-led benefits by leasing the surrounding land to developers. In addition, according to this research, the local leisure tourism transition has also acted to get national investments. As shown in survey, the DIPC managed to apply for loans from the national banks in the name of Tianyi Lake Resort.

Therefore, rather than a fundamental economic transformation towards leisure tourism, the local entrepreneurial state uses the development of leisure tourism as a complicated political-economic device for multi-purpose speculation. Consequently, it neglects potential risks of the innovation dilemma (7.3.1) and market limitations (7.3.2). In this sense, the local ecological modernisation (macro-economic restructuring by the leisure tourism industry) is bound to be at risk.

7.3.4 Tourism Transition as a Complicated Device for Maintaining Social Stability

This research also proposes that the making of the leisure tourism transition is inclined to be adopted by the local state as a complicated political-economic device to maintain social stability. It has become the fourth structural problem that blurs the leisure tourism transition.

The fundamental motivation of local steering is to ensure long-term power. This requires the local state to constantly maintain the legitimacy of its rule and to ensure that it is not challenged, especially under the rapidly changing socio-economic conditions of urban entrepreneurialism. This research has exposed *the logic of the appreciation* of the leisure tourism transition where it is used as a tool for acquiring local support from the local population towards the entrepreneurial pathway. It has been argued in terms of ‘bread and circuses’ that the making of spectacles should be regarded as a deliberate behaviour to show the citizens the benevolence of the city marketing by the local state. It functions to improve the quality of their daily life, giving them civic pride, reducing their sense of anomie, and thus persuading them to support the local steering and to join the historical process of entrepreneurial growth (Harvey, 1989; Doucet, 2007; Cook, 2004; Loftman and Nevin, 1995; Eisinger, 2000). It has been found from the survey that Tianyi Lake Resort beautifies the public spaces with large quantity of trees, lawn, and ground field that the local people interact with every day, thus enhances the quality of local life. The annexe constructions, represented mainly by the classic car museum with the most extensive collection in Shandong Province and the only panda display and big wheel in Tai'an city, undoubtedly has resulted in a greater sense of civic pride among the local people. The Tianyi Pavilion functions as the Manzhuang memorial hall. It includes carve writing articles about the local history

on the wall so as to counteract the sense of alienation and anomie resulted from modern city life with adding a sense of belonging. The interviews suggested that local residents were satisfied with the DIPC's achievements with an overwhelming support for the local development and the DIPC. The 'bread and circuses' approach in Manzhuang can be found in the making of Tianyi Lake Resort as a whole to help the local people gradually realise and appreciate the real benefits brought about by the growth possible under urban entrepreneurialism. The DIPC managed to get the local residents to embrace the entrepreneurial pathway that it chose with great satisfaction.

This research has also exposed how the leisure tourism transition was mobilised to divert the focus of the local residents from a crucial local problem (*the logic of diversion*). This meant that the local entrepreneurial growth could be kept unchallenged. From the interviews with the officials, it can be seen that the construction of Tianyi Lake Resort was basically to provide a green story in which they hoped to divert the public's attention and criticism from the local severe industrial pollution problem. It was noted in the interviews that the officials avoided saying that Manzhuang was heavily polluted. Instead, they always emphasised that Manzhuang was an ecologically oriented town. They showed this by exemplifying the high quality of the ecological services that had been provided to the local residents through the making of Tianyi Lake Resort. The officials believed that the environmental damage caused by the industrial pollution could be covered up by the facelift of the environmental-related landscape, such as through Tianyi Lake Resort. Apparently, the local government was using a new built environment to divert society's attention from the deep-seated industrial pollution because the pollution problem was difficult to solve completely. The manipulation of the leisure tourism transition reflected the local state's calculation in contrast with the potential social conflicts tied into the local industrial pollution under rapid development and the immediate cost of expensive projects of image construction (Waitt, 2001). The local entrepreneurial state tried to persuade the local residents about how green the development pathway was by addressing the leisure tourism transition, thereby countering the anger due to the real environmental problem of accumulative industrial pollution brought about by the local entrepreneurial state in the past.

From the perspective of the above-mentioned two logics, the seemingly boosted

tourism development to address local economic restructuring is actually a political-economic complicatedness to cope with the local state's anxiety of maintaining social stability. Despite a more sophisticated steering being possible to sustain, it simultaneously reduces the local state's attention on the innovation dilemma and demands market limitations when making tourism projects. In this sense, the local ecological modernisation (macro-economic restructuring by the leisure tourism industry) is bound to be at risk.

7.4 The Tension of an Authoritarian Socialism State to Adopt Capitalism in the Form of Urban Entrepreneurialism

In response to globalisation, the state of China has carried out reforms on decentralisation, marketisation and privatisation upon which the urban entrepreneurialism has risen in various local places. The Chinese society thereby shows the development feature of neoliberal-capitalism to a certain extent. However, rather than western capitalism states' adjustment to urban entrepreneurialism, the Chinese adjustment to it is immanently (authoritarianism-)socialism embedded. It has been argued that the incomplete nature of China's neoliberal reform and the preservation of the socialist centralised control legacy are the uniqueness in Chinese urban entrepreneurialism (Wu, 2003; 2016). Thus, the urban entrepreneurialism in China is a variant version because it combines the planning economy and market economy. It is '*planning centrality and market instrument*' as a product of '*state-orchestrated rescaling*' process (Wu, 2016c; 2017). It seems there is still inherent clash between the (authoritarianism-)socialism state and the adoption of (neoliberal-)capitalism. In this sense, this section interrogates the state's complicity of the Chinese socialism command-and-control regime to impact the delivering of local ecological modernisation under urban entrepreneurialism. In other words, the influence of a (authoritarianism-)socialism state character on local ecological modernisation is going to be examined in this section.

(1) The Chinese state's complicity on inter-locale competition and competitiveness

First the (authoritarianism-)socialism state of China has intensified the boundary mismatch between the administrative jurisdiction border and the optimal regional economic performance border. Traditionally, the operation of China's socialism planned economy is based on the fundamental law that the administrative jurisdiction boundary is as the rigid geographical (city-)regional economic management unit. On the other hand, in the more robust free market economy, the geographical boundary of the regional economy is relatively unfixed and changes from time to time, meaning that it has not been pre-determined by the boundary of administrative jurisdiction. Although China's socialism regime has carried out the reform towards urban entrepreneurialism, it has little steering experience in dealing with the complexity of the free market economy. This shortcoming makes the local governments more easily take advantage of their strengthened power to induce investment to produce the spatial production patterns based on their own administrative boundaries. Therefore, the boundary mismatch phenomenon that has long occurred in the urban entrepreneurial growth in the western countries is not alleviated but worsened by the planning economy tradition in which the rigid geographical (city-)regional economic management unit is standing predominant in China.

With the time goes by, the final result is just as what the chlor-alkali of Manzhouling has indicated, that the production industries at national(regional) scale soon end up with low efficient saturation under the inter-locale competition across places, leaving no extra room for the considerations on the ecological modernisation of building local circular economy. In fact, not only the production patterns, due to the same cause, the consumption-oriented image construction projects led by the local governments are facing a similar situation. The final results are the rapid saturation under the inter-locale competition, as exemplified in the excessive making of suburban lake resorts in the Jinan Metropolitan area that Manzhouling participates. Thus makes the ecological modernisation of macro-economic restructuring by boosting tourism and consumption less possible.

Secondly, the (authoritarianism-)socialism state of China has amplified the growth pole principle. Due to the reservation of the territorial administrative hierarchical system derived from the socialism command and control logic, the national resources are still instinctively distributed to the localities via the persistent channel of administrative hierarchy despite under China's urban entrepreneurialism. In this sense, this socialism channel has become the amplifier of the growth pole principle. As has been explored in this research, the Chinese state has actively facilitated the regional growth pole principle of the (city-)region by the territorial hierarchical hinged manipulation on gateway effect, brand effect, imaginative development prospect as well as the public amenities and infrastructure. In this cause, the territorial competitiveness of various places within the territorial administrative hierarchical system has been differentiated to an absolute extent and so the inter-locale competition become uneven in the beginning. Thus, when it comes to the manufacturing upgrading, places like Man Zhuang with lower position in the territorial hierarchical system may immediately rule out from such development direction for ecological modernisation of macro-economic restructuring.

(2) The Chinese state's complicity on image construction

First, the (authoritarianism-)socialism feature of China state is in contradiction with entrepreneurial innovation. As the tradition of state steering is top-down decision-making and implementation, the bottom-up entrepreneurial innovation is never the heritage of a socialist authoritarian state, but a strange trial to it for pursuing the growth whichever relying on entrepreneurship and innovativeness. But one has to remember that the socialism authoritarian system does not completely devote itself to encourage local states to innovate - the internal instinctive requirement for it is to thoroughly follow the confirmed planning and implement orders from the superior. Moreover, the China's the pro-growth collations at local scale to promote urban entrepreneurialism are mainly consists of tiers of local Communist political cadres. Therefore, their comprehension of entrepreneurial innovation may be comparably amateur and compromised. This is very different from the pro-growth collations in western countries where the private elites and businessmen participate dominantly, indicating the entrepreneurial innovation is blended into their consideration since they were born. In

this regard, it can be said that the entire (authoritarianism-)socialism state of China appears inexperienced to cope with the innovation dilemma that has been explored by this research. Therefore, this makes the local image construction project that intends to boost the tourism industry likely to be unsuccessful, and so the ecological modernisation in this way cannot be delivered firmly.

Second, the (authoritarianism-)socialism state of China fuses the overambitious quasi-governmental institutions at local scale. In China, the implementer of urban entrepreneurship is closely related to a hybrid regime model composed of different tiers of local government (Chien and Wu, 2011). As shown in this case, the local pro-growth coalition is constituted by the municipal government, district government, and the town government. The place-based management committee as its representative in place is a streamlined state agency where the marginalisation of environmental concerns is regarded as ‘combined government and business’ (Wu and Phelps, 2011) and ‘super corporations’ (Kang, 2006). It reflects the ‘development zone fever’ under China’s land revenue logic seeking to maximise economic growth through land expansion (Cao, Peng and Bi, 2016). In this sense, it can be said that due to China’s socialism centralisation system itself has the characteristic of the dominant state strength on possessing and allocating resources, the local pro-growth state institutions subsequently have become the full-fledged super company that combine the government and business since under urban entrepreneurialism to gear the rapid local development and urbanisation. Crucially, this modality sharpens local states’ ambitions and give them overconfidence to believe they are capable to take full control of the whole including any local development agenda. So instead of sticking to a single option for growth, it led them to expand boldly to integrate various options simultaneously. Thus, some single mega-project of image construction has been eagerly engaged by the urban entrepreneurial state to link with the numerous growth purposes altogether, because of the overambition assured by the (authoritarianism-)socialism regime. In this case, the encouraged local pro-growth institutions automatically act versatile to not only attract consumers, but also lure inward investment, appeal financial support from the superiors, and acquire the land leasing backed by the monopoly status of the state on national land market. Just as shown in Manzhuang, the DIPC has been effusively sure to spend

money on Tianyi Lake Resort and expand this expensive tourism project into a multi-purpose tool for any potential growth. Hence, the provoked overambition induced by the everlasting state dominance inherent from the authoritarian socialism regime seems to blur the single purpose of boosting leisure tourism with many other growth temptations. Accordingly, the ecological modernisation in this direction has been imperceptibly hindered.

Further, the (authoritarianism-)socialism state of China deepens the logic of social control upon the ruled class. One of the fundamental thinking of the ruling class is to sustain its dominant position by the means of social control. It is especially pronounced in China because an authoritarian socialism regime obtains the legitimacy of its rule by establishing the unchallenged national authority rather than relying on vote-based democracy. That is to say, any growth and route change in China can not impair the social stability, if not increase. Thus, it seems that the image construction throughout the whole urban entrepreneurial manoeuvres in China tends to be served the request of social stability under the current ever-turbulent political economic trajectory. Hence, as this research confirms, the extra consideration in the logic of local appreciation and diversion have been spontaneous supplemented into boosting leisure tourism by making Tianyi Lake Resort, which makes ecological modernisation project rather discursive.

Lastly, it should be noted that the (authoritarianism-)socialism state of China has a weak historical foundation to driving a consumption-oriented society. The state of China, as a socialism regime, its long historical practice of a planned economy after the establishment in 1949 has arguably resulted in an economic catastrophe and low wages. It seems that the rapid entrepreneurial growth engaged since the 1980s by the state has not been enough to make up for this historical state deficit. As has been explored in the operation of Tianyi lake Resort in Manzhuang, the current dispensable income of local residents is still insufficient to feed a rise of mass consumption on leisure tourism. It is likely that the local entrepreneurial steering cannot yet count on a sustained growth through the substantial dividends of consumerism, meaning that ecological modernisation by boosting leisure tourism is temporarily difficult.

7.5 Responding to the production aspects of EMT

The ecological modernisation of the circular economy links to industrial ecology ideas by expanding the focus to the inter-company levels (Mol, 1999). The closed loop industrial system of industrial symbiosis in by-products, energy, and the waste exchange between upstream and downstream is the ultimate solution to cleaner production with zero emissions in which the socio-institutional aspects of forming a circular economy should be seen as the top priority (Cohen, 2000; Gibbs, 2003; Gibbs, Deutz & Proctor, 2005). However, driven by the inter-locale competition under urban entrepreneurialism, this assumption is highly suspicious to be fulfilled. What happened in Manzhoung informed us that the local states are competing with each other overwhelmingly to lure inward industrial investment, dashing towards rapid market oversupply. This concern overrides any factors that could facilitate forming an industrial closed-loop system at the localities. Hence, the conception of transforming the existing local industrial configurations towards eco-industrial parks from being crisis and process-oriented to chain-oriented unfolds within a wider socio-technical determining (dis)enablers (see Chertow, 2000; Dijkema and Basson, 2009; Koppen and Mol, 2009; Yu et al., 2014) has lost its standpoint. Therefore, a circular economy seems not to be a consistently convincing method in China through which to realise ecological modernisation locally.

The ecological modernisation of macro-economic restructuring expects there to be a successful delinking of the national economy from energy and resource-intensive industry to acquiring the environmental gratis effects of the nation (Simonis, 1988; 1989; Gouldson and Murphy, 1997). However, in the growth of urban entrepreneurialism, there may still be places within the nation unable to initiate industrial upgrading because of the poor local competitiveness that is less endorsed by the state under the growth pole principle of the city-region. This phenomenon has been clearly exemplified in the differentiated territorial competitiveness among the DIP, TAHZ and JNHZ. Because some other places with more state endorsement (like the TAHZ and JNHZ) have managed to address this delink, overall, the national economic restructuring has appeared to take place as a whole. The de-link in some places where there is more of a state endorsement has obscured the fact that the economic structure

in many other places outside of the growth pole of the city-region with less local competitiveness (places like Manzhuang) remains unchanged. Frankly speaking, the places that fail to achieve local economic restructuring have not harvested any of the environmental gratis effects, even if the transformation of the economic structure is undeniable at the national level. In this context, stressing ecological modernisation as a form of macro-economic restructuring only at the national level is sketchy and unreliable because much of the obstructing details at the sub-national levels have been neglected. Localities in China, which are set up to be politically heterogeneous, have to complete under the same temporal and spatial context to attract limited high-end manufacturing investors. Many places that cannot provide solid territorial competitiveness will rule out entry when it comes to manufacturing upgrading to allow them to get the environmental gratis effects.

Moreover, the ecological modernisation of the macro-economic restructuring needs to pay more attention to ‘local tourism pretenders’ under urban entrepreneurialism. It is crucial to examine how many spectacles and events in the name of leisure tourism development can ensure financial balance. Under urban entrepreneurialism, the making of tourism attractions was easily interrupted by the confrontation of the innovation dilemma, the consumption market limitations or it was otherwise dominated by other political-economic purposes in the form of multi-facet speculation and maintaining social stability. Where boosting leisure tourism transition leads to local financial collapse, it becomes a mirage that ecological modernisation at a local place is real in appearance but unreal in substance.

7.6 Responding to the Ideological Conviction of EMT - Confirming the Tempo-spatial Overlap between Ecological Modernisation and Urban Entrepreneurialism

EMT argues that a capitalist modern industrial society should and will undergo an ecologically rational institutionalisation of production and consumption on the basis of a changing relationship between the economy and ecology to ultimately create a win-win situation for economic development and ecological protection (Huber, 1982; 1985). After learning from the empirical findings and discussions in this research, this section tries to revisit and reassess the propositions of EMT by linking its pragmatic dimensions to the ideological convictions.

EMT argues that ecological modernisation will start off once a modern society has attained a threshold level of material affluence in which the marginal economic increases cease to bring about commensurate returns. This is where a win-win situation can be achieved through the capitalist dynamic of self-modification/correction without interrupting the established capitalism development trajectory (Huber, 1985; Janicke et al., 1989; Janicke et al., 1989; Simonis, 1989a; Weale, 1992; Hajer, 1995; Mol, 1995; Gouldson and Murphy, 1997; Mol, 2001). This environmentally concerned institutional change to the capitalist industrial society has been called an 'ecological switchover' in the phase of super industrialisation (Huber, 1982; 1985b; 1991), as well as either the forward escape of industrialisation (Janicke, 1993) or the re-embedding of environmental rationale (Mol, 1995).

However, this ideological conviction seems dubious because the causal details (confrontations) that may affect the transition towards ecological modernisation in capitalism's development have been skipped. To make it clear, this research links local ecological modernisation with the general trajectory of the urban entrepreneurial growth mode.

Since the 1970s, the development of capitalism has undergone a series of changes stemming from its political-economic roots. This refers to the dialectical interplay between the deterritorialisation characterised by time-space compression and the

reterritorialisation in which the state rescales towards the urban entrepreneurialism that it has actively engaged with (Brenner, 1999). This double-edged dialectical process is the political-economic reality that contemporary capitalism entails that can be conceived from multi-level facets.

From the global capital level, finances, the market and technology alongside the waning cost and dissemination of faster transportation and instant communication in globalisation has reduced the space barrier. It has increased the mobility of capital, commodities, money, people, and information in which capital and other flows can go anywhere in the world in a foot-loose fashion. Therefore, a slight difference between places could lead to the shift in these flows (Harvey, 1989a; 1989b; 1990).

From the domestic level of capital accumulation, after the Fordism production market began to reach saturation, new economic growth known as post-Fordism - which was distinguished by flexibility when producing and consuming, in labour relations, and interfirm cooperation which has had a huge contrast compared to Fordism rigidity - had been introduced into production processes (Lipietz, 1986; Leborgne and Lipietz, 1988; Cooke, 1988; Albertsen, 1988; Storper, 1989; Harvey, 1990; Milani, 2000; Chen, 2003; Kumar, 2009). By the same token, it concomitantly pushed the acceleration of commodities and services based on the consumption within the siege of postmodern culture, thus indicating that a common feature of contemporary capitalism is the production of aesthetics and symbols, rather than material and content in the city space (Harvey, 1990; Scott, 2004).

The confluence of capital accumulation tendencies when turning to globalisation, post-Fordism production and postmodernism culture has created the movement of time-space compression under the current capitalism development. Meanwhile, as part of a capitalist territorial organisation, the state has rescaled itself to highlight the urban levels featured by the emergence of urban entrepreneurialism in response to the capitalism trends.

In China, with the objective of taking part in globalisation, state rescaling has been captured. As for the national state level, the Chinese central state has made a

tremendous change from a socialist planned economy catastrophically provoked by Mao's cultural revolution to a socialist market economy since Deng's 1978 reform and opening up. This was followed by serial deregulation, mainly in marketisation, fiscal decentralisation, and political devolution²² (Chien 2008; Wu 2003; Wu and Ma 2005). It is against this backdrop that the entrepreneurial governance is largely promoted by the state at the local scale as a form of reregulation. The local states become speculative when it comes to utilising their expanded powers to generate more GDP, accommodate inward investment for the purpose of economically mitigating the local financial burden, and personally getting promoted in the party-state ranks (Blanchard and Shleifer, 2000; Jin et al., 2005; Chien, 2007, 2010a; Chien and Wu, 2011; Wu and Phelps, 2011).

At the local state level, the role of the urban-regional states has been greatly refined. Consequently, the capital bypasses the national state and directly interacts with the local state. It intensifies the interplay between the highly mobile capital (and other flows) and relatively fixed locality (i.e., the local state). Hence, the local state must become entrepreneurial to compete for growth. The political-economic tensions to deliver such growth have inevitably arisen in and are faced by each locality.

In this vein, the local steering of ecological modernisation has had to be conducted precisely under the trajectory of entrepreneurial growth mode. There is a tempo-spatial overlap between ecological modernisation attempts and urban entrepreneurial growth mode in the historical process of capitalism development. The case explored throughout the thesis has exactly reflected such clear practical overlap between the attempts of ecological modernisation and the trajectory of urban entrepreneurial growth mode. Urban entrepreneurialism is the mode under which the ecological modernisation takes place. Further, urban entrepreneurialism acts as a device of duality in the process of urban entrepreneurialism in China. On the one hand, it has driven the rapid development of the local economy and thus accumulated a basic material foundation for local ecological modernisation. On the other hand, the inherent political-economic

²² which also includes a series of bold regulatory reforms mainly represented by the household registering system (*huji zhidu*), the paid use of land (*tudi youchang shiyong*), the housing commercialisation (*Zhufang shangpinhua*) and the cadre evaluation system (*guanyuan kaohe zhidu*), etc.

challenges that the entrepreneurial growth mode faces towards the extending of (green) industrial chains and boosting of leisure tourism (i.e., the structural problems identified in 7.2 and 7.3) has been disrupting the local realisation of ecological modernisation as exemplified in the case of Manzhuang.

The relative gradual approximate of Ecological Modernisation under Urban Entrepreneurial Steering

Nevertheless, the author also acknowledges that the extant evidence in this research is still enough to demonstrate that at least a weak form of ecological modernisation (Christoff, 1996) has appeared at the local scale in China.

Given the national policy intervention of the ‘ecological civilisation’ and ‘environmental protection inspector’ by the central state to surge eco-transition, the urban entrepreneurial steering was forced to turn to entrepreneurship (Phelps and Miao, 2020), a progressive government (Zhou, 2003), being innovative-driven (Qiu, 2017) and a virtue circle (Keating and Loughlin, 2013) by exploring new way of incorporating environmental concerns in its continued growth. This research suggests that due to the ever-stricter local pollution control, the extension of (green) industrial chains and the development of the tertiary industry represented by leisure tourism have both been selected by the local entrepreneurial state as the new growth directions.

Although, due to the structural problems mentioned in 7.2 and 7.3, ecological modernisation has not been achieved substantially in a strong form, its tentative practice is a prominent marker indicating that the curtain of the socio-institutional transformation towards an ecological society has undeniably risen in select space practices of China, even down to the level of small town. In this sense, this research has highlighted that the progress of local ecological modernisation under urban entrepreneurship is complex and zig-zagged. The transition from acquisitive modernity to ecological modernisation implies graduality rather than instantaneity. The process of ecological modernisation to achieve its goals is relative in practice that the outcome of it appears to be gradual approximate rather than instant and definite.

7.7 Conclusion

By bringing the empirical findings of the case study and theoretical debates from the extant literature on urban entrepreneurialism together, this chapter has critically analysed and discussed the data to address the major research questions by exploring how the local attempts at ecological modernisation have failed under urban entrepreneurialism along the lines of extending (green) industrial chains and boosting leisure tourism.

To summarise, this chapter (see 7.2) has identified two major structural problems that impact the extension of (green) industrial chains at the local scale: (1) the competition-led rapid industrial market oversupply and (2) the growth pole as the city-regional development principle. This chapter (see 7.3) has then identified four structural problems that impact the successful boosting of leisure tourism development to transform the local economy: (1) the innovation dilemma, (2) the limitations of the demand market, (3) tourism development as a complicated device for multi-purpose speculation, and (4) tourism development as a complicated device for maintaining social stability.

After that the state's complicity of China as an authoritarian socialism regime has been examined in particular. It seems such state feature of China might increase the difficulties to deliver the successful local ecological modernisation at some places.

After proposing a modification to the production aspects of EMT, this chapter has eventually interrogated the visionary claims of EMT as a social theory based on ideological conviction. It has been pointed out that there is an overlapping relationship between the trajectory of urban entrepreneurialism and ecological modernisation in practice. It is essential to understand the realisation of ecological modernisation in the historical process of capitalism development through in a way of gradual approximate rather than affirmed instantaneity.

Chapter 8. Conclusion

8.1 Introduction

This research has explored the structural problems of local ecological modernisation in China. By focusing on the case of Manzhuang - a suburban small town characterised by (chemical) industrial production located on the fringes of a medium-size city named Tai'an - a link between the local ecological modernisation attempts and the urban entrepreneurialism trajectory has been made.

This chapter starts with summarising the key findings with respect of the major research questions. The five contributions of this research are then shown regarding to ecological modernisation and urban entrepreneurialism. Then, this chapter identifies the limitations of this research and provides suggested directions for future studies. In the end, the reasons of not proposing policy recommendation have been given.

8.2 Responding to the Research Questions

Through the macro-scale trends of production and the consumption mode changes, the state of rescaling in China has engendered urban entrepreneurialism at the local scale in which places have been pushed to the frontline to promote growth independently. This is done by competing with each other to attract inward economic opportunities. It has been found in this research that when triggered by the national policy intervention to urge an eco-transition, the local entrepreneurial state has been attempting to change the development pathway from resource-intensive growth towards an environmental-friendly development in which pollution control, extending the (green) industrial chains, and the development of tertiary industry have become the practical anchors. On the one hand, the state has been reassuring the public of the importance of the ecological environment in economic development through changing the steering ideology represented by the concept of ecological civilisation. On the other hand, the state has restrained its extensive industrial production due to the damage done to the natural environment through the direct stricter regulations by the introduction of an environmental protection inspector. This has forced places to turn to pollution control, thus greatly reducing the possibility for the local entrepreneurial state to squeeze further economic benefits from resource-intensive (chemical) industrial production. Therefore, the placemaking of urban entrepreneurialism increasingly tends to hinge upon the extending of (green) industrial chains and the boosting of tertiary industry.

In this sense, research questions 1 and 2 were raised.

Research Question 1

Under urban entrepreneurialism, to what extent does the urban competition and competitiveness patterns shape the win and lose of local ecological modernisation of circular economy and industrial upgrading? (i.e., What makes the local attempt to extend the (green) industrial chains simply become impossible?)

First, this research exposes that under the growth of urban entrepreneurialism, the intense boundary-based inter-locale competition has tended to drive the whole

industrial market into rapid oversupply. Therefore, the setting up of more production and processing plants became economically unworkable for localities as an easy-to-work solution of extending the (green) industrial chains.

Furthermore, as the strategic resources are limited within the city-region, the growth pole principle that channels the strategic resources into a certain place can ensure the maximum competitiveness of a single point to prepare for participating in the territorial competition on a larger scale (national or international). In this manner, the city-region state defines the growth pole in the form of selective empowerment through administrative restructuring, through the control of certificate level and urban planning direction, and through the inaction of funding redistribution. As this research points out, the price of doing so is that the development of places that have not been selected as growth poles (or only selected as small growth poles) in the city-region are gradually peripheralised due to the weak territorial competitiveness, losing out the chance to extend the (green) industrial chain.

Research Question 2

Under urban entrepreneurialism, how does the place making towards image construction fail to deliver the local ecological modernisation through macro-economic restructuring towards tertiary industry such as leisure tourism? (i.e., Why is the boosting of the leisure tourism transition finding it difficult to bring about fruitful outcomes but incurring a financial burden?)

First, this research has exposed the dilemma of the long-term nature of innovation, the dilemma of the innovative plausibility of place, the dilemma of urban innovation exhaustion, and the dilemma of innovation occasionality. This is due to the prevalence of making tourism developments under urban entrepreneurialism that localities cannot escape from.

Secondly, it has been pointed out by this research that the consumption market volume is finite where under the urban entrepreneurialism growth conditions, both initiators and the subsequent imitators alike have all quickly ended up with diminishing economic returns when the consumption market become redundant. Meanwhile, the slowly rising

local consumption power is still deficient and is not fully capable of fuelling the urban entrepreneurialism in China to pursue consumption opportunities.

On the other hand, it seems that the local boosting of the leisure tourism transition is not just a means to rush into the spatial division of consumption so as to restructure the local economy. Rather, the leisure tourism transition has been adopted as a complicated political-economic device for multi-purpose speculation in localities to entice broad economic activities, for real-estate profit, and for securing national investment. Moreover, the leisure tourism transition has also been adopted as a complicated political-economic device for the maintenance of local social stability through the logic of appreciation and diversion. In this sense, the innovation dilemma and demand market limitations have been deliberately overlooked by the local entrepreneurial state.

Based on addressing the previous research questions, research question 3 further interrogates the broader correlations between ecological modernisation and urban entrepreneurial growth in a local place as a unique historical course that characterises the contemporary capitalist development.

Research Question 3

How does the complex political-economic situation in the general capitalist trajectory of urban entrepreneurialism relate to the ecological modernisation at local places? (i.e., How can we understand the macro-political economic coherent relationship between the urban entrepreneurial growth mode and ecological modernisation practice?)

This research intends to illustrate that there is synchronicity between ecological modernisation and urban entrepreneurial growth. Ecological modernisation and urban entrepreneurial growth are synchronic in the historical process of capitalism development in which the urban entrepreneurial mode plays a role of duality. On the one hand, urban entrepreneurialism has driven the rapid development of the local economy and thus accumulated a basic material foundation for (local) ecological modernisation. On the other hand, the inherent political-economic challenges it faces during the entrepreneurial eco-transitional growth (i.e., the structural problems

identified in 7.2 and 7.3) have been disrupting the local realisation of ecological modernisation.

In this sense, this research has highlighted that the capitalist progress of local ecological modernisation is complex and zig-zagged. It may be understood that the transition from acquisitive modernity to ecological modernisation implies a kind of graduality rather than instantaneity. This involves enduring political-economic confrontations to deal with under the trajectory of the urban entrepreneurial growth mode.

8.3 Contribution of the Research

8.3.1 Contribution to Ecological Modernisation

The outcome of this research has made three contributions to academia by adding place-based and political-economic knowledge to the literature on ecological modernisation.

(1) A place-based thematic study

At present, the majority of influential case studies on ecological modernisation practices focus on exploration based on the industry level (cf. Mol, 1995; Sonnenfeld, 2000; Smink, Van Koppen and Spaargaren, 2003; Sarkis and Cordeiro, 2012), as well as at the national policy and governmental sectoral level (cf. Murphy and Gouldson, 2000; Cohen, 2000; Phuong and Mol, 2007; Mu, 2019). The academic community have not devoted sufficient attention to ecological modernisation from the perspective of localities, as if the notion of place is less relevant. Until now, there has been no comprehensive case study that has thematically explored ‘place’ as an independent observation subject.

This research has tried to re-orient the empirical study of EMT from the national (policy) base, governmental sectoral base, and industrial sector base towards the place base. To do so, it managed to conduct one place-based case study looking into Manzhuang to address the combined transformational process towards ecological modernisation in terms of cleaner production, a circular economy, and macro-economic restructuring.

By doing so, an overall understanding of the local ecological modernisation at the place has been grasped.

(2) A political-economic analytical perspective

This research has introduced a political-economic analytical perspective to the studies on ecological modernisation through which the macro trajectory of urban entrepreneurialism has been engaged as a growth mode to articulate the ecological modernisation practices at the local scale. As such, it has bridged the studies of EMT originating from the environmental sociology field with the urban study of political economy. In this way, the structural problems affecting the realisation of local ecological modernisation have been found out (see 7.2 and 7.3).

By doing so, this research has clarified the overlap between ecological modernisation and the urban entrepreneurialism growth mode in the process of capitalist development that the existing EMT studies have skipped (see 7.6). Moreover, a revised understanding of the production aspects of ecological modernisation (mainly the circular economy and macroeconomic restructuring aspects) in the urban entrepreneurialism scenario has also been supplemented in the conceptualisation of EMT (see 7.5).

(3) Clarification of the usage of ecological modernisation in Chinese academia

At present, research on ecological modernisation in China is primitive. It is stuck in the bottleneck phase of (a) listing and reviewing Western literature (cf. China Ecological Modernization Report, 2007; Pan, 2008) and (b) fragmented interpretation based on a smattering of knowledge (cf. Li, 2009; Cao, 2015; Li and Li, 2017; Lin, 2017). The studies cited are relatively inconsistent and lack theoretical reflection. When discussing eco-transition in specific places, the buzzword of ecological modernisation has been easily misused in which the interpretation has been actually developed under the eco-city concept and its planning centred around the establishment of an indicator system (cf. Shen, 2009; Liu, 2007; Chen, 2010). As a result, ecological modernisation in China has been downplayed as a rather vague and deceitful gimmick. This research, from the integrated literature review and research design to the empirical study of a Chinese small town, has formed a coherent whole for the understanding of EMT that corrects

the misuse of this concept in local eco-transition studies in Chinese academia.

8.3.2 Contribution to the Studies on Urban Entrepreneurialism

Regarding urban entrepreneurialism studies, this research has made two major contributions.

(1) Theoretical Scope Enrichment

The main body of urban entrepreneurialism studies is constructed using the political economic interpretation from the Regulation School tradition (Hall and Hubbard, 1996, pp. 156). This is strongly influenced by neo-Marxism and regime theory. Hence, major urban entrepreneurialism studies tend to focus on the criticisms on the consequential social (justice) problems brought about by the overarching urban entrepreneurial growth. The introduction of EMT in this research can be regarded as a theoretical enrichment of the main literature on urban entrepreneurialism studies. To some extent, it opens up a new research focus for urban entrepreneurialism studies to examine the realisation and importance of the production aspects of ecological modernisation (i.e., cleaner production, circular economy, and macroeconomic restructuring) under urban entrepreneurial transitional growth.

(2) Stressing the significance of a small town

Under the multi-layer interaction, the capital has bypassed the national state and directly entered local places. Each local state must then compete for various developmental opportunities under the mode of urban entrepreneurialism. So far, the dynamics of urban entrepreneurialism in China have been generally examined. This includes a wealth of literature on large cities such as Beijing, Shanghai, Hangzhou, Guangzhou, Lanzhou, and Shenzhen (see Wu, 2003; Duckett, 2006; Wu and Zhang, 2007; Qian, 2011; Zheng, 2011; Wu, 2011; Guo, 2020; Song, Stead and de Jong, 2020), small and medium sized cities such as Changzhou, Kunshan, Lijiang and Jiyuan (see Mai and Zhang, 2013; Chien, 2013b; Su, 2015; Zhang and He, 2015; He et al., 2018), and several works from the city-regional perspective (Xu and Yeh, 2005; Li and Wu, 2012; Wu, 2016b). Except for a few pioneer studies on local state corporatism (Oi, 1989, 1992) and local governments as industrial firms (Walder, 1995), current research

consisting of urban entrepreneurialism studies on small towns located in the vast hinterland of China is rare to see. However, although small towns are not generally concerned with, it does not mean that they are not important.

In fact, small towns play an irreplaceable role in urbanisation. Rondinelli (1985) pointed out the locational efficiency offered by small towns, saying that it allowed for clusters of services, facilities, and infrastructure that could not otherwise be economically located in small villages and hamlets to serve a widely dispersed population from an accessible central place. Courtney et al. (2007) summarised three reasons for highlighting the role of small towns in regional development. First, it allows for potential economic development through new constructions within a confined pre-existing built area and minimises the need to commute to preserve the environment and landscape of the countryside. Second, given the already concentrated clusters of local communities and institutions, it had the capacity to carry out national and regional initiatives in a reliable and accountable pattern. Third, it was likely to take advantage of agglomeration economies which enabled the spread effect to benefit the hinterlands. Satterthwaite and Tacoli (2003) and Tacoli (2017) highlighted the four important functions of small towns in the rural-urban continuum - (a) market supplier for various products, (b) goods and service supplier in the surrounding rural area, (c) non-farming activity and employment especially for the younger generations, and (d) rural migrant attractor to contain rural migrants who tend to move locally, easing the migration burden on the larger cities.

Hence, when relating to the important role of small towns in urbanisation, this research can be regarded as providing a recent case of small towns in the context of urban entrepreneurialism where the transitional growth is taking place due to the local entrepreneurial state.

8.4 Limitations of the Research and Future Research Suggestions

8.4.1 Limitations on Generalisability

Empirically speaking, by adopting a political-economic perspective to examine local ecological modernisation in Manzhuang, this research has generated insightful case-based evidence to explain why and how the extension of (green) industrial chains and leisure tourism transition is problematically initiated by the local entrepreneurial state. It has accordingly drawn a political-economic correlation between ecological modernisation and urban entrepreneurial growth.

However, China is a very vast and diversified country. The case study of this research is a small (chemical) industrial town located in the (post)suburb of a medium-sized city in northern China. It is argued that the success of urban entrepreneurialism depends on four elements, specifically the historical-geographical trajectories, embeddedness, political favouritism, and personal charisma of its leader (Leitner and Sheppard, 1998; Chien, 2007). Urban entrepreneurialism cannot be accurately understood only from the general mode of change and the state top-down implications without a proper consideration of the diversified local contingency. It must be investigated in a bottom-up way, case by case (Yu and Zhu, 2009). Other places with different indigenous entrepreneurial conditions and endeavours for the purpose of eco-transitional growth might bring about a different outcome of ecological modernisation. This means that the research findings cannot be generalised to other places. Regarding to this limitation, more empirical studies on local ecological modernisation practices with different entrepreneurial contingencies should be carried out in the future.

8.4.2 Limitations on the Adopted Perspective

This research explores the structural problems that hinder the practice of local ecological modernisation from the perspective of a political economy in which an extensive literature from urban entrepreneurialism has been engaged.

In fact, the urban entrepreneurialism-based political economic interpretation only provides one of many perspectives through which to study the structural problems of local ecological modernisation. Despite the paramount urban entrepreneurialism marked by a contemporary urban governance with a sharp difference from the previous version, the selling of the city by the local state to pursue a profit is in fact as old as the city itself (Hall and Hubbard, 1996 and Wards, 1998). Therefore, this perspective

should be understood in a non-absolute manner.

Moreover, EMT, as an embryonic social theory through which to conceptualise the environment-concerned institutional transition of modern industrial society, is still absorbing knowledge from other disciplines to enrich the research approaches. Future research may find it fruitful to try to use other theoretical entry points to learn the nuances of local ecological modernisations. For instance, the local environmental governance analytical framework can be adopted to study local ecological modernisation in terms of the cleaner production aspect. The study approaches to industrial ecology (how to better promote the formation of industrial symbiosis) can be adopted to explore the local ecological modernisation in terms of the circular economy aspect. The new industrial district theory and tourism development theory can be used to analyse the local ecological modernising in terms of its macroeconomic restructuring aspect. Alternatively, future research may also adopt the classic analytical model of industrial locational theory to study all attempts at local ecological modernisation related to the site selection of economic activities.

Compared with the political-economic approach putting the local ecological modernisation practices under the grand spatial-temporal trajectory of urban entrepreneurialism, the aforementioned approaches utilise a microscope analytical framework and specific explanatory power regarding specific production aspects of ecological modernisation. Due to the length constraints, this research could not cover them.

8.5 Reasons of Not Proposing Policy Recommendation

When it comes to policy recommendations, this research tends to hold a most prudent stand by not proposing any of them to the authorities of China concerning its unclear domestic consequences.

Actually, to speak in a conventional manner, the most regular policy recommendations that have been suggested by the scholars would be the establishment of somewhat

regional coordination mechanisms as the institutional flanking systems to alleviate the growth frictions brought by urban entrepreneurial place making at localities (exemplary studies on the matter of regionalism, see Zhang and Wu, 2006; Jonas, 2012; Li and Wu, 2018).

However, this research points out that judging from the equalitarianism doctrine of the regionalism, such suggestion is very likely to drag down rather than promote the realisation of local ecological modernisation on a regional scale. Taking circular economy form example, due to the quantity of downstream industries is finite, any perfect setting of regional coordination policy will certainly not be able to ensure all the places holding the upstream industries to acquire adequate number of matching downstream industries - because those downstream have been evenly scattered across the places due to such policy. In term of industrial upgrading, if the competitiveness of places across the region are equalised by the regionalism policies, then the likely result is that the high-end manufacturing industries which are extremely sensitive on place specific advantages will not come to any of these places but flow to place in another region with more territorial competitiveness where such equalitarianism regional policies have not been employed. In addition, if the consumption destinations are forced to evenly distributed through the regional coordinative guidelines, the resulting outcome is likely to be the reduction of tourist numbers in every place in regional space, making the operation of all places unprofitable due to the diluted number of tourists.

Besides, this research also points out that from the appeasement doctrine of the regionalism, any excellent policy recommendations only give the pre-advantageous places the opportunities to obtain the desired ecological modernisation opportunities. Other places will be automatically deprived from the realisation of ecological modernisation. For circular economy, assuming that there are upstream in several places within a region waiting for downstream so as to build their circular economy, the cost of the downstream industries entering few (maybe the most suitable) places is that they do not enter other neighbouring places that are also in need of them as well (but maybe only a slightly less suitable). As for the industrial upgrading, the entry opportunities for high-end manufacturing are relative limited compared to the almost-

everywhere primary manufacturing especially in the developing countries like China. Once the regional policies are launched to concentrate the territorial competitiveness on few selected places, the competitiveness of other places in the same region cannot be strengthened by the state apparatus. Thus, there will be no similar opportunities for them at all. For the switch to consumption, one has to know that the involvement of regional mechanisms may mean that when some places (probably more naturally and artistically endowed) are designated as the destinations, receiving steady stream of tourists, other places meanwhile become the single providers of outward tourists whose surplus are being continuously absorbed by the destination places in the form of consumer spending.

Therefore, the abovementioned scenarios have manifested the so-called policy recommendations advocating either the equalitarianism or the appeasement doctrine of regionalism to become a cause to fail the ecological modernisation. In this vein, the projects of ecological modernisation should be understood in a partial manner (achieved in some places), not a total manner (achieved in all places). The rise and fall of each locality are inextricably inter-related and subjected to competition. Given the contemporary reality of broader capitalism political economy and the relevant pervasive urban entrepreneurial steering, one completion of ecological modernisation project in a place means that it does not take place in another place on the regional (domestical) scope. There is no harmonious geographic equilibrium that all the places enter or keep the perfect situation of ecological modernisation hand in hand baptised by some miraculous social equations. Thus, from perspective of domestic geographical scale, the so-called strong ecological modernisation in this context become a self-consolation and fragile exposition put forward by the EMT scholars to only make this theory morally appropriate (or alternatively phrased, to fill the theoretical omission so as to make the EMT has a better appearance).

Thus, the intervention of the national policy is far from omnipotent. As has been argued, the national policy on regionalism can neither allow every place in the country(region) to obtain sufficient opportunities for ecological modernisation. To the most extent, what

it can do is to trigger a certain degree of ecological modernisation at the specific local places case by case but leaving the unsured patterns to the complicated political economy of capitalism competition in the form of urban entrepreneurialism, as displayed in Manzhuang. So, based on the above judgements, this research tends not to recommend the convenient policies in the framework of regionalism to the Chinese authorities.

8.6 Conclusion

This chapter has summarised the main research findings by responding to the three major research questions. It has indicated the main contributions of this research to both ecological modernisation and studies on urban entrepreneurialism. This chapter also acknowledges that the research had limitations in terms of its empirical generalisability and the adopted perspective among which some potential scope for future studies has been suggested. Meanwhile, the reasons of not proposing policy recommendation have been given in the end.

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10. Appendix

Appendix 1. Interview Topic Guides

环保督查下的污染防治治理：

Topic 1 (Discard) - Pollution Control by the Environmental Protection Inspectorate:

1.能否描述环境保护督察下的垂直环境治理结构的流程？你能谈谈这个过程吗？

1. Describe what is the process of vertical environmental governance structure under the Environmental protection inspectorate? Can you talk about this process?

2.描述引入环境督察制度后如何实施环境处罚？处罚是什么？频率呢？

2. Describe how are environmental penalties carried out after the introduction of Environmental inspectorate? What are the penalties? and the frequency?

3. 您能否评估环保督察自上而下的环境配置如何在大汶口工业园管委的治理范围内规范和推动环境整合？

3. Could you evaluate how the top-down environmental configuration of Environmental protection inspectorate has regulated and propel the

environmental integration within the governance of Dawenkou Industrial Park Committee?

4. 企业是否设定了环境保护指标？地方政府和企业能否完成目标任务？有什么困难吗？

4. Are indicators of environmental protection assigned in enterprises? Can local governments and firms fulfil their target tasks? Are there any difficulties?

5. 环境改善的互动中，你能评估政府和企业之间关系的变化吗？

5. Could you evaluate the changes in the relationship between government and firms in the interactions of environmental improvement?

6. 你对大众媒体作为公众参与的媒介有什么看法？你能否就大众媒体、官方信访投诉渠道作为监测企业污染的方式发表一些评论？

6. What is your opinions about the mass media to act as the intermediary for public participation? Could you give some comment on the mass media and official letters and complaints channels as the ways to monitor firms' pollution?

Topic 2 - Extending (green) Industrial Chains:

延伸（绿色）产业链

1. 谈一谈你们作了哪些延伸产业链的尝试？这个决策是如何决定的？

1. What are your attempts to extend the industrial chain? How was this decision made?

2. 有没有产业升级的计划？有没有循环经济的考虑？在政策、资金、管理上有哪些投入和调整？

2. Is there any plan for industrial upgrading? Is there any consideration of circular economy? What are your inputs and adjustments in policies, funds and management?

3. 作为一个小城镇如何吸引各类产业入驻的呢？

3. As a small town, how to attract all kinds of expected industries?

4. 这些计划有哪些成功了，哪些没有成功？您能否举例，然后谈谈这个过程吗？

4. Which of these plans have been successful and which have not? Can you give an example and then talk about the process?

5. 您认为企业没有选择满庄而选择其它地方的主要原因是什么呢？能否举例说明？

5. What do you think is the main reason why enterprises choose other places instead of Manzhuang? Is there any example?

6.在执行中有没有遇到什么困难？你认为造成这个的原因是什么？你们有哪些应对措施呢？

6. Have you encountered any difficulties in implementation? What do you think is the reason for this? What countermeasures do you have?

7. 宏观市场因素是否对延伸产业链造成了影响呢？能否举例，具体谈谈这个过程呢？

7. Have macro market factors affected the extension of the industrial chain? Can you give an example to talk about this process?

8.周边开发区的竞争是否对延伸产业链造成了影响呢？能否举例，具体谈谈这个过程呢？

8. Has the competition in the surrounding development zones affected the extension of the industrial chains in Manzhuang? Can you give an example to talk about this process?

Topic 3 - Development of the Tertiary Industry (leisure tourism)

发展第三产业（旅游业）：

1.为什么满庄选择向旅游业转型呢？能否谈一谈这一决策过程？

1. Why does Manzhuang choose to transform to leisure tourism? Can you talk about this decision-making process?

2.你们有哪些具体项目？这些项目是如何运作的？投资多少？目前能否盈利？

2. What specific projects do you have? How do these projects work? How much is the investment? Is it profitable now?

3.为什么你们如此匆忙的宣布要进行旅游转型呢？

3. Why does the transformation of leisure tourism in such a hurry?

4.建设这么多景区，除了发展旅游，还有别的目的吗？

4. By the building of a series of tourism attractions, are there any other purposes besides developing tourism?

5.这些项目在规划、设计上有何独到特色呢？能否举例说明？

5. What are the unique features of these projects in planning and design? Can you give me an example?

6.景区运营有哪些挑战和争议呢（比如商业模式上，客源上，资金上，管理上）？面对挑战，您们是如何应对的呢？怎样确保可以在与其它地方的景区竞争中获胜呢？

6. What are the challenges in the operation of scenic spots (such as business model, source of tourists, cash flow and management)? How do you cope with the challenges? How can you win the competition with the scenic spots in other places?

7.您对景区建设取得的成果满意吗？您认为达到了转型的预期了吗？为什么？

7. Are you satisfied with the outcome of making leisure tourism transition? Do you think the expectation of transformation has been met? Why?

Appendix 2. List of Interviewees and Interview Dates

Interviewees	Post Title	Sector/Company	Interview Date
MG01 (Mr. Zhu)	Director of DIPC & Chef Secretary	DIPC committee board	18 July, 2019
MG02 (Mr. Si)	Vice Director of DIPC & Director of Construction Bureau	DIPC committee board	18 July, 2019
MG03 (Mr. Li)	Vice Director of DIPC & Director of Financial and Tax Centre	DIPC committee board	15 August, 2019
MG04 (Mr. Wang)	Vice Director of DIPC & Director of Economic Development Bureau	DIPC committee board	23 July, 2019
MG05	Deputy Director	DIPC committee board	24 July, 2019
MG06 (Mr. Zhu)	Unit Leader	Land Resource Unit, Construction Bureau	1 August, 2019
MG07 (Mr. Kui)	Staff	Land Resource Unit, Construction Bureau	1 August, 2019
MG08 (Mr. Chen)	Office leader	Construction office, Construction Bureau	14 August, 2019
MG09	Staff	Construction office, Construction Bureau	14 August, 2019
MG10	Staff	Construction office, Construction Bureau	14 August, 2019
MG11 (Mr. Guo)	Unit Leader	Planning Unit, Construction Bureau	19 July, 2019
MG12	Staff	Planning Unit, Construction Bureau	19 July, 2019
MG13	Staff	Planning Unit, Construction Bureau	22 July, 2019
MG14	Staff	Planning Unit, Construction Bureau	22 July, 2019

		Construction Bureau	
MG15 (Mr. Zhao)	Unit Leader	Civil Engineering Unit, Construction Bureau	11 July, 2019
MG16 (Mr. Lu)	Unit Leader	Environmental Protection Unit, Construction Bureau	16 August, 2019
MG17 (Mr. Li)	Staff	Environmental Protection Unit, Construction Bureau	25 July, 2019
MG18 (Mr. Li)	Staff	Environmental Protection Unit, Construction Bureau	10 July, 2019
MG19	Staff	Environmental Protection Unit, Construction Bureau	2 August, 2019
MG20	Staff	Environmental Protection Unit, Construction Bureau	2 August, 2019
MG21	Unit Leader	Investment Attraction Unit, Economic Development Bureau	4 July, 2019
MG22 (Mr. Zhang)	Staff	Investment Attraction Unit, Economic Development Bureau	4 July, 2019
MG23 (Mr. Wang)	Staff	Investment Attraction Unit, Economic Development Bureau	8 July, 2019
MG24	Staff	Investment Attraction Unit, Economic Development Bureau	8 July, 2019
MG25 (Mr. Tian)	Unit Leader	Economic and Information Unit,	14 June, 2019

			Economic Development Bureau	
MG26	(Mr. Wang)	Staff	Economic and Information Unit, Economic Development Bureau	25 June, 2019
MG27	(Mr. Liang)	Staff	Economic and Information Unit, Economic Development Bureau	25 June, 2019
MG28	(Mr. Zhu)	Vice Director	Financial and Tax Centre	15 August, 2019
MG29		Staff	Financial and Tax Centre	18 August, 2019
MG30		Vice Director	Publicity Office	18 August, 2019
MG31	(Mr. Ming)	Vice Director	Social Affairs Bureau	10 July, 2019
MG32		Staff	Social Affairs Bureau	16 July, 2019
MG33	(Mr. Wang)	Vice Director	General Office	17 June, 2019
MG34		Head of Station	Statistic Station of Manzhuang Town	19 June, 2019
MG35	(Mrs. Sun)	Vice Director	Letter and Visit Office	16 August, 2019
MG36		Former Staff of Economic Development Bureau	Retired	5 August, 2019
MG37	(Mr. Liu)	Former Director of Economic Development Bureau	Retired	9 August, 2019
MG38		Former Staff of Construction Bureau	Retired	9 August, 2019
TD01	(Mr. Yue)	General Manager	Taishan Tianyi Lake Tourism Development Company	19 August, 2019
TD02	(Mr. Zhao)	Vice General Manager	Taishan Tianyi Lake Tourism Development Company	19 August, 2019

TD03	Financial Controller	Taishan Tianyi Lake Tourism Development Company	19 August, 2019
TD04	Vice General Manager	Taishan Tianyi Lake Tourism Development Company	20 August, 2019
TD05 (Mr. Wang)	Manager of Flower Ocean	Taishan Tianyi Lake Tourism Development Company	20 August, 2019
TD06	Operation Controller	Taishan Tianyi Lake Tourism Development Company	20 August, 2019
TD07	Marketing Manager	Taishan Tianyi Lake Tourism Development Company	21 August, 2019
TD08	Frontline Staff	Taishan Tianyi Lake Tourism Development Company	21 August, 2019
TD09	Frontline Staff	Taishan Tianyi Lake Tourism Development Company	21 August, 2019
DG01	Vice District Head	Daiyue District Government	30 August, 2019
DG02 (Mr. Bai)	Director	Bureau of Economy and Information in Daiyue District	5 September, 2019
DG03	Vice Director	Bureau of Economy and Information in Daiyue District	5 September, 2019
DG04 (Mr. Zhang)	Vice Director	Bureau of Ecological Environment in Daiyue District	4 September, 2019
DG05 (Mr. Zhao)	Deputy Leader of Inspection Brigade	Bureau of Ecological Environment in Daiyue District	4 September, 2019
DG06	Vice Head of Total	Bureau of Ecological	4 September,

	Pollution Control Office	Environment in Daiyue District	2019
DG07	Deputy Investigator	Bureau of land Resources and Planning in Daiyue District	2 September, 2019
DG08	Head of Land Spatial Planning Section	Bureau of land Resources and Planning in Daiyue District	2 September, 2019
DG09	Deputy Head of Land Spatial Planning Section	Bureau of land Resources and Planning in Daiyue District	2 September, 2019
CI01 (Mr. Feng)	Head of the Production Line	TS	2 August, 2019
CI02 (Mr. Xiao)	Vice General Manager	TS	2 August, 2019
CI03	General Manager Assistant	TS	2 August, 2019
CI04 (Mr. Guo)	Vice President	SH	25 June, 2019
CI05	Environmental Specialist	SH	25 June, 2019
CI06	Head of the Production Line	SH	25 June, 2019
CI07 (Mr. Liu)	Vice General Manager	HW	13 June, 2019
CI08 (Mr. Song)	President	JH	27 June, 2019
CI09 (Mr. Zhao)	Head of Production Section	BY	28 June, 2019
CI10 (Mr. Ran)	Environmental Specialist	LT	2 July, 2019
CI11 (Mr. Shi)	Vice General Manager	GR	4 July, 2019

Appendix 3. Consent Form with Chinese Translation

受访同意书

Consent Form

研究人员：贾宁（博士生）

所属机构：英国卡迪夫大学地理与规划学院；中-英生态城市与可持续发展研究中心；
山东省城乡规划设计研究院

Researcher: Ning Jia (PhD Candidate)

School of geography and Regional Planning, Cardiff University

China-UK Research Centre for Eco-Cities and Sustainable Development

Shandong Urban and Rural Planning Design Institute

研究导师：于立教授

所属机构：英国卡迪夫大学地理与规划学院；中-英生态城市与可持续发展研究中心；
中国城市科学研究会

Supervisor 1: Dr Li Yu

School of geography and Regional Planning, Cardiff University

China-UK Research Centre for Eco-Cities and Sustainable Development

Chinese Society for Urban Studies

研究导师：史葛奥福教授

所属机构：英国卡迪夫大学地理与规划学院；英国住房证信合作中心；英国威尔士社
会与经济研究院

Supervisor 2: Dr Scott Orford

School of geography and Regional Planning, Cardiff University

UK Collaborative Centre for Housing Evidence (CaCHE)

Wales Institute of Social and Economic Research, Data and Methods (WISERD)

本次访问是在英国卡迪夫大学地理与规划学院研究伦理委员会正式批准之后进行的。作为同意的受访程序，受访者可保留一份受访同意书。如阁下对此研究的内容有任何疑问，欢迎向本人提出。在受访前，请您仔细阅读以下资料：

The interview is conducted after the formal approval of the Research Ethics Committee of the School of Geography and Planning, Cardiff University. As the consent procedure indicated, respondents may retain a consent form. If you have any questions about the content of this study, please let me know. Before being interviewed, please read the following materials carefully:

研究主题：

探讨中国城镇发展转型期山东省满庄镇的生态现代化进程

Research Topic：

Ecological Modernisation of Small Towns under the Changing Context of Urbanisation in China: The Case of Outskirt Small Town, Manzhuang

研究目的:

1. 了解满庄地方政府在地方环境治理中将环境理性纳入以经济理性为主导的现有制度的过程；
2. 明确影响满庄镇大汶口工业园区矿产化工企业发展循环经济的有利和不利因素；
3. 外推满庄政府为宏观经济结构调整创造的理想双赢局面，即多个行动者为矿产化工

业与第三产业的结合而斗争；

Purpose of interview :

1) to understand the process of the Manzhuang local governments' integration of environmental rationale into existing institutions which are used to be dominated by economic rationale in environmental governance at local level;

2) to explicit the favourable and unfavourable factors that affect local mineral based firms in Dawenkou Industrial Park of Manzhuang town to develop circular economy;

3) to extrapolate an ideal win-win scenario that Manzhuang local government create for a macro-economic restructuring in which multiple actors struggle over the combination of mineral based industrial with tertiary industries.

受访事项:

- 访问内容包括矿产化工的生产和加工日常情况和访问者对矿产化工政策、地方环境治理的看法。
- 受访者必须在受访之前签署受访同意书。
- 访问所需时间约四十五分钟。
- 访问是自愿性的，受访者有权随时退出访问。
- 访问之前，研究人员会问受访者是否愿意进行录音。
- 你是否愿意于访问时进行录音? _____ 会， 不会 _____ (请以 X 作记号作选择)

Interview Items:

- The interviews include the daily situation of the production and processing of mineral based industry and respondents' views on industrial policies and local environmental governance.
- Respondents must sign the consent form before being interviewed.
- The time required is approximately 45 minutes.
- The participation is voluntary, and the respondent has the right to withdraw from the interview at any time.

- Before the interview, the researchers would ask respondents if they would like to make a recording.
 - Would you like to make a recording at the time of the interview? _____ Yes, _____ No.
(Please take X Make a mark to make a choice)
-

受访风险管理：

直至目前为止，本人没有发现任何风险。搜集数据只作本人的博士论文写作之参考，本人将不会向任何人或其它机构公开受访者资料。所有访问调查原始数据将会放入一个密封的纸信封内。研究人员将会签署和写下密封的日期，以保护您的私隐。所有调查资料将保存在一个有锁的文件柜。调查数据的电子文件将会存放在指纹与密码加密的电脑硬盘中。三年之后，受访者的所有数据将会被销毁。

Risk Management:

So far, I have not found any risk. The collection of data is only a reference for my doctoral thesis, and I will not disclose the respondents' information to any person or other institution. All interview data will be placed in a sealed paper envelope. The researcher will sign and write down the sealed dates to protect your privacy. All information will be kept in a locked filing cabinet. Electronic files of data will be stored on a computer hard drive encrypted with fingerprints and passwords. After three years, all data from respondents will be destroyed.

向参访人提供的信息

- 在接受访问之前，研究员必须获得受访者书面同意和签署；
- 在接受访问之前，研究员必须说明访问是自愿性的，受访者有权随时退出访问；
- 若受访者提出，受访者的身份可由匿名或化名代替；
- 研究人员将提供联络方法，以便受访者作出任何查询；
- 所有资料只作研究员的博士论文写作参考，研究员不会将受访者资料向第三者或其它机构公开，以保障受访问者的私隐；

Information provided to respondents:

- Before receiving the interview, the researcher must obtain the written consent and signature of the respondent.
- Before receiving an interview, the researcher must state that the interview is voluntary, and that the respondent has the right to withdraw from the interview at any time.
- If the respondent proposes, the identity of he/she may be replaced by anonymity or pseudonym.
- The researcher will provide contact details in case that the respondent makes enquiries.
- All information is used as a reference for the researcher's doctoral thesis and related publications, and the researcher will not disclose the respondent 's information to a third party or other institution in order to protect the privacy of the respondent.

签署 (书面同意):

你的签署表明你 1) 明白参与此研究的目的和角色, 2)且愿意成为受访者。由于受访者参加访问出属于自愿性质, 在任何情况下, 不能向调查员、资助机构或何参与机构追讨任何法律或专业责任。如受访者不愿继续进行访问, 可以随时退出。

Signed (Written consent):

Your signature shows that you 1) Understand the purpose and role of participating in this study,2) And willing to be interviewed. Due to the voluntary nature of the interviewees ' participation, no legal or professional liability can be recovered from the investigator, the subvented institution or any participating institution under any circumstances. If the respondent does not wish to continue the interview, he/she may withdraw at any time.

研究员姓名 (Name of researcher) : _____ 贾宁 _____

受访者签署 (respondent signature) : _____

受访日期 (Date) : _____

如受访者对本人的研究有任何意见或查询，可透过以下方法联络本人：

贾宁，（电话） +44 7410368420/+86 13165319275，（电邮） Jian1@cardiff.ac.uk

或联络以下人士：

于立教授，（电话） +44 2920879333/+86 15321952939，（电邮） YuL@cardiff.ac.uk

史葛奥福教授，（电话） +44 2920875170，（电邮） orfords@cardiff.ac.uk

If you have any comments or enquiries about my research, please contact me through the following methods:

Ning Jia, (tel.) +44 7410368420/+86 13165319275, (E-mail) Jian1@Cardiff.Ac.uk

Or contact:

Dr Li Yu, (tel.) +44 2920879333/+86 15321952939, (E-mail) YuL@cardiff.ac.uk

Dr Scott Orford, (tel.) +44 2920875170, (E-mail) Orfords@cardiff.ac.uk