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An Evaluation of Urban Renewal Policies of Shenzhen, China

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Abstract: Urban renewal is a pragmatic approach in the sustainable urban development of urban areas, and has now become an essential strategy for most metropolises in China. The question of how urban renewal can best be realized has gained the attention of urban planning researchers looking to formulate practical evidence-based urban renewal policies through policy instruments. This paper analyzes the urban renewal policies of Shenzhen, a pioneer city in China in the promulgation of urban renewal legislation. In doing so, an analytical framework is established by focusing on three main policy instruments, along with several sub-instruments within them. Shenzhen's five main urban renewal policies, issued between 2009 and 2016, are analyzed through this framework. Content analysis and pattern-matching is used in the review and analysis of the data. The results show that "Environment" side policies tend to be the most widely applied by the Shenzhen municipal government. Additionally, "Regulation Control" and "Goal-planning" policies are the two instruments most frequently adopted as sub-instruments. Moreover, it is found that the application of "Supply" side polices and "Demand" side polices needs be strengthened. These findings identify the types of urban renewal policies currently employed in China and provide a clear understanding of the current policy priorities, with suggestions and insight into further urban renewal policy initiatives for Shenzhen and beyond.

Keywords: urban renewal; urban planning; urban development; policy instruments; context analysis; Shenzhen; China

1. Introduction

Since the 1970s, large swathes of cities in China have succumbed to problems of urban decay. These problems include obsolete buildings, overcrowding, and poor environmental conditions, and these problems have become an urgent concern for local governments [1]. Urban renewal is regarded as an important priority in addressing the urban decay issue, through the promotion of land values and in cultivating innovative industries, as well as being strategically significant to the regional interest in fostering socio-economic development [2–4]. In the case of facilitating urban renewal in China, and dealing with the problems of imminent urban decay, there has been a need to establish fresh policies, programs and planning. Many countries have successfully implemented measures to facilitate the urban renewal process, including the United States, Great Britain, Singapore, Hong Kong and Taiwan [5–8]. However, as urban renewal involves diverse stakeholders, complicated

processes, and unpredictable risks, each country will be characterized by specific circumstances, as well as unique economic and political contexts. Consequently, the urban renewal policies of other countries and regions may not be suited to that of China. Hence, analyzing the evolution of Chinese contextualized urban renewal policies, based on policy instrument perspectives, is of greater relevance to understanding how urban renewal may be facilitated in this country.

Though China has made some remarkable achievements in urban and economic development, many existing built-up areas in most of large cities continue to deteriorate. Government is under increasing pressure to transform these areas with appropriate services, amenities, transportation and infrastructure, and to address the social inequality associated with impoverished districts [9–11]. Urban renewal must respond to this phenomenon, and success with this reflects on the city's intrinsic value. In the process of pursing sustainable urban development, urban renewal policies have been regarded as the essential strategies. The State Council, in January 2008, issued the "Circular of the State Council" on "Promoting Efficient and Intensive Land Use". The circular put forward rules aimed at reducing the stock of idle land and better implementing economic improvements, to facilitate better and more efficient land use. Subsequently, in 2009, as the selected pilot area for promoting efficient and intensive land use, Guangdong Province declared three transformation policy initiatives targeting "old towns", "old factories" and "old villages". Shortly thereafter, the Shenzhen, Special Economic Zone (SEZ), one of the municipalities in Guangdong Province, took the lead in promulgating urban renewal policies that put forward, for the first time, certain institutional reforms. Later, in 2015, Guangzhou established China's first urban renewal authority. In 2016, China's second urban renewal measures appeared in both Guangzhou and Shanghai. So far, these policies had made a positive impact on the promotion of urban renewal in these cities, and offered experienced from which other Chinese cities can learn. Nevertheless, urban renewal around greater China has not always progressed smoothly nor effectively; what progress there has been has taken place irrespective of the fact that the central government in China has yet to enact national urban renewal laws or establish specific organizations to oversee the process. Therefore, urban renewal policies have emerged as a significant factor in the implementation of urban renewal projects. However, complications of urban renewal polices, such as complex land usage claims, the protection of the public interest and endemic social equality, along with limited understanding of policy itself, has slowed the development of the urban renewal process across the country. Therefore, a clearer understanding of the current situation, and an appraisal of mistakes and problems, is needed.

This paper is organized as follows. Section 2 conducts a literature review concerning the evolution of urban renewal polices and the evaluation of specific instruments. Section 3 outlines the research design. The study area, analytic framework, data collection and pattern matching are explained. Section 4 reports the results through the established framework, and Section 5 discusses the implications based on the analytical results. Section 6 draws the main conclusions and policy suggestions, while also identifying the study's limitations and suggested directions for further study.

2. Literature Review

Recent studies have focused on urban renewal policies from various perspectives, tracking evolutionary paths, and comparing different countries. For example, Carmon identified three generations of policy formation, in the US, the UK, and several other European countries, based on an analysis of twenty years of policy making [12]. Verhage explored changing approaches, and the influential capacity of different actors involving public, private and civil [13]. In 2008, the Development Bureau of the HKSAR Government launched the Urban Renewal Strategy review, conducting a study of a number of Asian cities, including Seoul, Tokyo, Singapore, Taipei, Shanghai and Guangzhou, with respect to their urban renewal strategies [14]. Couch et al. made a qualitative contribution to the general theory of urban regeneration through an urban renewal comparison of Britain, Germany and France [15].

In additional, several other studies have analyzed the evolution of urban renewal policies during certain periods. For instance, Sutton summarized policies and practices in urban revitalization since 1970s in the United States [16]. In the Netherlands, 'shifts' in urban renewal policy were identified through 1960 to 2000, with successful urban renewal policies identified in the transitions from old to new [17,18]. Regarding China itself, transformational regimes, along with the social impacts of urban renewal policy, have also been explored [7,19]. There are also studies that have focused on urban renewal policy from specific perspectives, including cultural and conversation policy, role of the participator, and as a result of changes in authority [2,20–23]. While the existing literature on urban renewal is rich, there are limitations. Firstly, one such limitation is that these studies focus mainly on the evolution of specific instruments of urban renewal, such as regulations, planning, and governance, while other instruments, such as incentives, pricing systems and post-evaluation, have not been included in the analysis. Moreover, examining a complete set of policy instruments can provide a more comprehensive and systematic analysis of policies. Secondly, many studies address the qualitative impacts of specific urban renewal policy, rather than examining the nature and structure of the public policy itself through combination between quantitative and qualitative methods. Doing so would allow for a systematic evaluation of the balance of emphasis in those policies; what they were responding to, and what they hoped to ameliorate.

In an effort to address this gap, this study establishes a theoretical framework that assesses urban renewal policy, offering the capacity to analyze any structural defects. Shenzhen was selected as the case study for examination mainly because of considerations such as its unique location, pioneer urban renewal area and numerous practical projects. A content analysis and pattern-matching method were adopted in classifying urban renewal polices, through eight sub-instruments derived from the parent policy instruments. Single dimensional analysis and cross analysis among three dimensions are conducted based on the theoretical framework. This study contributes to the existing literature in three ways. Firstly, this paper builds a valid and reliable framework for analyzing urban renewal policy. In facilitating a more rigorous means of scrutinizing policy formulation activity, mistakes and problems that have taken place in the past may be mitigated through this more systematic approach. Secondly, it provides insight into changing trend patterns in urban renewal policies, revealing not only the inherent dynamics behind policy-making but also clarifying existing problems with urban renewal policies. Thirdly, urban renewal will continue to play an important role in urban development and city transformations into the future and Shenzhen's urban renewal policy process could be used as a reference for other cities in developing similar policies, reducing costly mistakes and problems. Thus, this study also serves to provide significant practical application.

3. Research Design

3.1. Study Area

While various Chinese cities have come to recognize urban renewal as an integral strategy in urban development, no national level urban renewal legislation has yet been enacted. China does not have an overall national urban renewal regime to coordinate urban renewal policies related to planning laws, land laws, or regulations on demolition or relocation of urban housing. Since it might be quite challenging to collect data and evaluate these policies comprehensively. It is for these reasons that Shenzhen is chosen for study. Firstly, Shenzhen is located on the Pearl River Delta in Southern China, adjacent to Hong Kong, which is itself an international city. Since the central government of China designated Shenzhen as a special economic zone (SEZ) in 1979, the city has been growing at an incredible pace. The population has increased five hundred-fold, from less than 20 thousand people, in 1979, to 10.4 million people, in 2015. However, the city's limited land resources means it will no longer be able to meet outstanding and future demand. Thus, the Shenzhen government has paid particularly close attention to issues of urban renewal; more so than any other city in China.

Secondly, Shenzhen may be considered a pioneer city in urban renewal. A "general old village's office", addressing the renewal of Shenzhen's original ten villages, was established as early as 1990. Sequentially, over the years to 2004, renewal plans for the old villages and old factories were published. By 2009, Shenzhen emerged as the first Chinese city to promulgate urban renewal legislation that specifically dealt with urban socioeconomic development problems arising from a lack of available land. Thereafter, in 2012, more land was released by the Shenzhen government to accommodate growth projects, systematically set out in the urban renewal policies adopted.

Thirdly, because of long-term urban renewal policies, especially since 2009, there have been more than 270 urban renewal projects completed, with around 461 projects being incorporated into urban renewal plans [24]. Since 2009, Investment in urban renewal has now increased six-fold to CNY400 billion, accounting for 16.5% of the total investment in fixed assets. Consequently, while urban renewal in China is still in its infancy, the policy instruments of Shenzhen are relatively robust. In particular, the policies set out by the Shenzhen example are notable as pioneering examples in policy crafting that have gone on to be replicated and employed across numerous other major cities in China. Lessons can therefore be learned from Shenzhen's experience in implementing these policies, and by identifying current best practices, as well as those areas that can be further improved.

3.2. Analytical Framework of Urban Renewal Policies

3.2.1. The Taxonomy of Basic Policy Instruments

In order to classify and examine Shenzhen's urban renewal policies, we follow the study conducted by Rothwell and Zegveld (1981, 1985), in which they categorize innovation policy in terms of supply (public enterprise, scientific and technical, education, and information), demand (procurement, public service, commercial, and oversea agents), and environmental (political, legal and regulation, taxation, and financial) policy instruments [25,26]. The precedent established has been widely used and accepted in other policy analyses as well [27–30], ranging from electronics, energy, sports and public sectors [31–34], and its value extends to covering broader policy aspects and social collective benefits. In additional, the sub-instruments also altered with wider employment of different sectors.

Compared with significance of analyzing urban renewal policy under different sectors, it seems to be more important to focus on policy instruments which are being implemented by governments and/or related official departments instead of these tools employed by other organizations, entities or individuals. To be clear, for the purposes of this study, urban renewal policy refers to governmental activities and measures undertaken to promote sustainable urban renewal. This study classifies urban renewal policies according to the three categories identified: environmental side, supply side and demand side [31,32]. It could be found that supply and demand side of urban renewal policies play a direct push or pull role in developing the urban renewal improvement, while the environment side of policies effect is largely indirect. Table 1 describes the definition of each policy instrument and lists an example of each criteria (practical policy measures categorized under these three headings) in order to determine the policy category to which the related policy tools belongs.

- Environmental side of urban renewal policy

The environmental side of urban renewal policy refers to government efforts to promote urban renewal via incentives, such as tax systems, laws, regulations and other similar instruments. Consequently, these policies are classified largely as goal planning, financial support, tax preferences, regulation controls, as well as other measures able to indirectly influence the development of urban renewal policy. The environment side here does not refer to pollution or carbon dioxide reduction. In respect to urban renewal, the special definitions for each type of environmental policy can be further subdivided into financial support, legal regulation, and strategic measures are presented.

Table 1. Classification of urban renewal policies [31,32].

Instruments		Definition
Supply side	Technical information support	Based on collecting information related to urban renewal polices, setting up information databases, and sharing urban renewal information and consultant platforms, the government provides public scientific and technological support and information services for the development of urban renewal.
	Education	Urban renewal policy is very complicated and always changing, and the whole process needs various professionals. General education, policy education as well as profession education is essential for urban renewal development.
	Public capital investment	The government dominates the process of urban renewal by publicly owned industries in specific areas, and sets up significant urban renewal units for regional coordination of development.
Environment side	Financial support	The government promotes urban renewal development via basic traditional financing instruments (loans, bonds), modern financial innovative tools and loosening of financial restrictions.
	Legal regulation	A string of laws and regulations are promulgated to set provisions for market actions, and to establish an impartial and normative marketplace.
	Strategic measure	In the case of demand for urban renewal development, the government sets various goals, determines a plan and strategic measures to achieve it.
Demand-side	Government procurement	The government purchases urban renewal projects like public housing, innovative industrial housing and public service infrastructure.
	Market cultivation	The government stimulates development of urban renewal and attracts more investment entities through selecting participating enterprises.

- Supply side of urban renewal policy

Similarly, supply side policy means that the local government should improve related supply elements directly, and facilitate urban renewal development through enacting positive and effective measures. Supply side policies could consist of the provision of public capital investment, technical information support, and education. Although these policies could increase total demand to some extent, they should aim at enlarging supply capacity and improving efficiency of implementation.

- Demand side of urban renewal policy

These policies aim at removing barriers during the entrance of market forces and reducing potential risks in the market via government procurement, trade control and other actions. They provide some necessary measures to reduce market uncertainty through the implementation of several instruments, such as government procurement, and market cultivation. Generally, the interaction of the classifications of urban renewal policies is presented in Figure 1, which illustrates graphically how the three sides of policy influence the promotion of urban renewal.
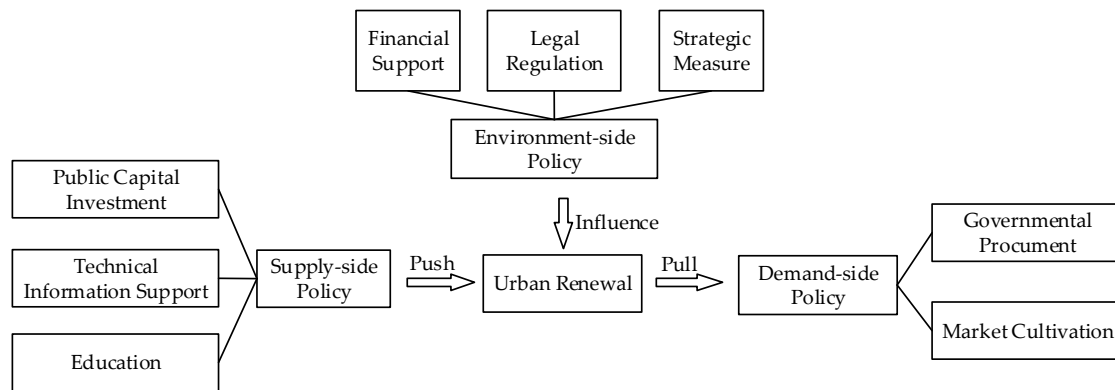
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┌──────────┐  ┌──────────┐  ┌──────────┐
│ Financial│  │   Legal  │  │ Strategic│
│  Support │  │Regulation│  │  Measure │
└──────────┘  └──────────┘  └──────────┘
           ┌──────────────┐
           │Environment-side│
           │    Policy     │
           └──────────────┘
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Figure diagram:
- Financial Support, Legal Regulation, Strategic Measure → Environment-side Policy
- Environment-side Policy →(Influence)→ Urban Renewal
- Public Capital Investment, Technical Information Support, Education → Supply-side Policy →(Push)→ Urban Renewal →(Pull)→ Demand-side Policy → Governmental Procurment, Market Cultivation

Figure 1. The interaction of classifications of urban renewal policies.

3.2.2. Analytical Framework of Urban Renewal Policies

With the purpose of this research being the evaluation of urban renewal policies, an analytical framework is needed in order to properly appraise such policies. The difficulty, however, is that there is substantial variety in the portfolio of policy instruments that are applied to urban renewal, and hence it is difficult to construct a framework as a methodology for urban renewal policy. Specifically, two difficulties exist in choosing a policy framework. Firstly, as already discussed, previous attempts to articulate such a framework focus mainly on qualitative analysis of urban renewal policies, frequently contextualized from a set specific perspective. Indeed, little attention has been given to providing a comprehensive, systematic framework based on the combination of quantitative and qualitative analysis. Secondly, as a result of multidisciplinary developments and their integration, urban renewal is now understood to incorporate different phases, several models and various participants. It is thus essential that any renewal policy framework be able to support and analyze all these interacting variables.

Thus, this research investigates the urban renewal polices of Shenzhen by developing and applying a three-dimensional theoretical framework, as shown in Figure 2. This framework includes basic policy instruments, urban renewal processes and urban renewal domains. The first or "X" dimension of the analytical framework comprises three categories: Environment-side, Supply-side and Demand-side policies. The second or "Y" dimension is defined as the urban renewal process. The third or "Z" dimension is defined as the urban renewal activity domain. Urban renewal has its own specific characteristics and implicit trends, which make the processes and the related activities distinctive. The explanations of urban renewal processes and domains, in the context of Shenzhen, China, are presented as follows:

- Urban renewal processes

The process is a vital aspect that needs to be analyzed and should be considered during policymaking. The process of urban renewal consists of four main stages in its life cycle, including Renewal Program, Renewal Planning, Construction Implementation and Post-Evaluation, according to the current regulated decision making of urban renewal in Shenzhen.

(1) Renewal Program is the first step of the urban renewal activity process including regional urban renewal scheme and confirmation of urban renewal subject. Here, every urban renewal project is required to belong to a single specific entity that undertakes the development. This entity may be a traditional real-estate developer, village collective or even a company comprising a variety of indigenous inhabitants, but excluding tenants. The ownership of the project is transferred to the owning entity by a process of subject confirmation, which may take the form of a two-thirds majority of traditional inhabitants agreeing to transfer urban renewal rights to the entity after reaching a compensation settlement agreement.

(2)　Renewal Planning is an important part of the process, and includes development of an urban renewal schedule and renewal plan. The scope, scale and design of the urban renewal projects occur during this stage and should be approved by the Urban Planning Bureau of local government.

(3)　This stage, Construction Implementation, may be viewed as the process found in the traditional construction of new buildings.

(4)　Post-Evaluation is the final stage of any urban renewal process. It mainly appraises the difference between the completed urban renewal projects and the original urban renewal plan, and investigates the satisfaction achieved for the various stakeholders, especially indigenous inhabitants and tenants. Post-Evaluation also reviews the administrative process, from the government's perspective, to determine what lessons could be learnt. These four stages are distinct, requiring independent analysis and evaluation, and it is for this reason that they are included in the urban renewal policy framework.

● Urban renewal domain

Urban renewal policies aim to regulate and guide a disparate range of renewal projects. Thus, the main categories of activities that are undertaken during the urban renewal process are captured in the "Z" dimension of the framework. For example, urban renewal may take the form of commercial projects, industrial or residential urban renewal projects from the perspective of land use type. Moreover, they may be market-oriented, government-oriented or resident-oriented urban renewal projects, relying on related stakeholders. This paper, however, classifies urban renewal projects into Demolition and Reconstruction, Functional Retrofit and Comprehensive Renovation. This categorization is employed here because it is derived specifically from the Shenzhen government's policy, "Detailed rules for implementing the urban renewal measures of Shenzhen Municipality" (Decree No. 1, 2012), which applies to the governmental oversight of all urban renewal projects. The definitions of urban renewal domains are presented as follow.

(1)　Demolition and Reconstruction, as the name indicates, means demolishing old buildings and rebuilding new real estate projects.

(2)　Functional Retrofit refers to the partial altering or upgrading of the overall function of all the buildings in a specified urban renewal area. Here, the land-use rights of owners and their lease durations, as well as preservation of the original structure of buildings, is preserved.

(3)　Comprehensive Renovation of urban renewal projects improves fire-fighting devices, public facilities and infrastructure, as well as renovating the facade or upgrading the utilities and services of existing buildings. The core structure and function of the buildings remain intact. Therefore, by examining these variables, it can be illustrated that the main focus of policies occurs in regards to the nature of the urban renewal activity, and the activity's dimensions can be explored to determine the implementation mechanism of urban renewal policy instruments, along with the strength of their impact.

● Reasons for establishing the framework

This study investigates the urban renewal policies in Shenzhen by developing and applying a three-dimensional theoretical framework, as depicted in Figure 2. This policy framework is established and why it may be useful in urban renewal policies analysis can be elaborated as follows:

(1)　This three-dimensional theoretical framework offers a more comprehensive range of policy tools. Various types of urban renewal polices can clearly be identified across the three axes, categorized and plotted within this theoretical framework.

(2)　Unlike qualitative descriptions, which do not lend themselves to discrete numeric conclusions, the comparative analysis of this study requires the combination of qualitative and quantitative data across the different dimensions in order to be meaningful. This framework is suited to such

an aim since it relies on a pattern-matching approach of policy instruments. The proportion of different urban renewal policies could be regarded as a method to comprehend the priorities of current policies in Shenzhen, along with these each category of existing framework.

(3)   The theoretical framework and interaction of urban renewal policies, as presented in Figures 1 and 2, illustrate the relationship between policy and urban renewal. This structure also offers some references for decision makers in government to alter the purposes and focus of enacting policies from a comparative perspective. Policy data collected, when applied to the framework, will identify the degree of concentration of policies across the three-dimensions of the framework, revealing when certain policy types are densely represented, and also where policy types have little or no representation. Such a framework will show where policy-makers are both focusing overly on certain issues, and similarly identify where they may be neglecting certain types of policy. With that information at hand, urban renewal policy makers will be better equipped to ascertain whether policy emphasis adjustments are needed. That objective is the aim of this study.
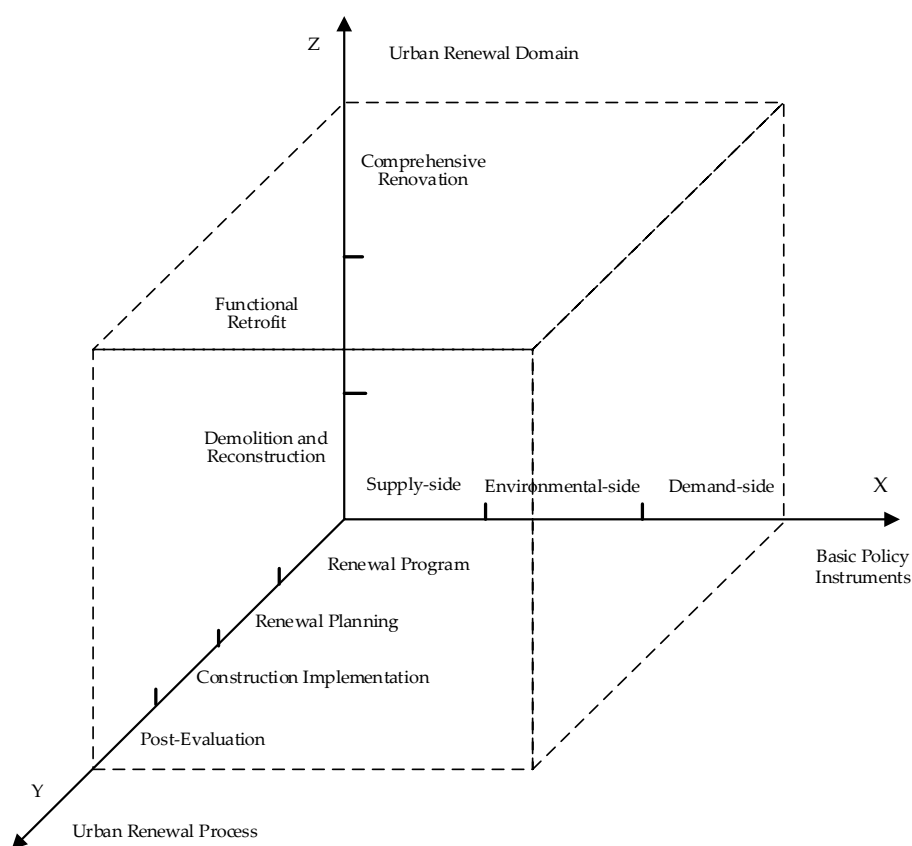

Figure 2. An analytical framework of urban renewal policies.

3.3. Data Survey and Pattern Matching

3.3.1. Data Survey

The data for this study was collected from historical documents and official websites, over the period from the beginning of 2009 to the end of 2016. Specifically, this paper collected 41 urban renewal policies enacted by the Shenzhen municipal government. Collection steps were as follows: officials of the urban renewal department in Urban Planning, Land & Resources Commission of the Shenzhen municipality were interviewed, and 19 copies of urban renewal policies were reviewed. The next step was searching government websites, such as the Shenzhen Government Online, Department of urban renewal in Shenzhen, Shenzhen Urban Renewal Enterprise Association, as well as the websites of

urban renewal professionals, such as "urbanrenewal.com". This led to the identification of 22 urban renewal policies, primarily by using the keywords "urban renewal", "demolition", "reconstruction", "urban villages", "old villages", "old industrial park" and "vacant land".

To ensure the correctness and feasibility of the selected policies, there were two major considerations in determining how to proceed with the analysis of those policy documents. Firstly, while some policies represent new initiatives, others are merely updates of existing statutes. These updates were filtered out in order to avoid duplication of numerical tallies. Secondly, over time, there is obviously an evolution in the types of renewal policies enacted, and the concerns they address. A review of the shifts in policy formulation over time is beyond the scope of this study and is not considered here. Rather, all policy documents that required compliance from practitioners were examined, regardless of chronological considerations. Furthermore, a pilot study was conducted in order to select a more comprehensive and relevant set of urban renewal policies prior to coding and pattern matching. Specifically, three professionals, including a government official from the Urban Planning, Land & Resource Commission of Shenzhen Municipality and two experienced managers representing the firm of "Gemdale Group" and China Vanke Co., Ltd. (Shengzhen, China), were interviewed (See Table 2). The purpose of the interviews was to classify policies into two categories including comprehensive side or specific side. The focus group investigated six multidimensional policy documents (See Table S1 in Supplementary) consisting of a comprehensive list of policies that have shaped urban renewal in Shenzhen. The six urban renewal policy documents are: (1) "Urban renewal measures of Shenzhen Municipality" (Decree No. 211, 2009), (2) "Recommendations of the Shenzhen Municipality on further advancing urban renewal work" (Decree No. 193, 2010), (3) "Detailed rules on the implementation of urban renewal measures" (Decree No. 1, 2012), (4) "Notices of specific actions plans for accelerating urban renewal" (Decree No. 244, 2012), (5) "Provisional measures for strengthening and improving urban renewal implementation" (Decree No. 8, 2014), and, (6) "Provisional measures for strengthening and improving urban renewal implementation" (Decree No. 38, 2016).

On examination, the above "fourth" urban renewal policy proved to be a duplication of the "third". Consequently, this fourth policy document, "Notices of specific actions plans for accelerating urban renewal" (Decree No. 244, 2012), was deleted from further examination. Therefore, only five policies were selected for the analysis for the analysis in Table 3.

Table 2. The detailed information of interviewees for choosing target polices and conducting pattern matching.

Purpose	Items	Organization or Company	Introduction
Choosing target polices	Governmental official	Urban Planning, Land & Resource Commission	Enact related urban renewal policy and approve urban renewal projects.
	Operation manager	Gemdale Group	It has implemented many urban renewal projects in Shenzhen.
	Marketing manager	China Vanke Co., Ltd.	It has become a leading real estate company in China.
Conducting pattern matching	Head of urban renewal department	Urban renewal Bureau Luohu District, Shenzhen	It is in charge of dealing with related urban renewal in Luohu District.
	Investment manager	Urban Renewal Group, Kaisa	It has concentrated attention on urban renewal for 17 years.
	Urban planner	Urban Planning & Design Institute of Shenzhen	It has compiled various urban renewal plans.

Table 3. Urban renewal policy text content analysis examples, for City of Shenzhen.

Policy Names	No. of Units	Num.	Concluding Sentence	Encoding
(1) Urban Renewal Measures of Shenzhen Municipality (No. 211, 2009)	50	Section 1, Article 1	Determining the goals of urban renewal measures	1-1-1
(2) Suggestion of Shenzhen Municipality on further advancing of Urban renewal work (No. 193, 2010)	21	Section 3, Article 5	Enhancing the efficiency of approval	2-3-5
(3) Detailed rules for Implementing the Urban Renewal Measures of Shenzhen Municipality (No. 01, 2012)	76	Section 1, Article 3	The main duties of the municipal department and the district department	3-1-3
(4) Provisional measures for strengthening and improving Urban Renewal implementation (No. 08, 2014)	25	Section 3, Article 4	Old industrial parks, which refers to construction of public service facilities and infrastructure, are exempted from administrative fees	4-3-4
(5) Provisional measures for strengthening and improving Urban Renewal implementation (No. 732, 2016)	30	Section 7, Article 4	The district governments should regularly clean up the urban renewal plan	5-7-4

3.3.2. Content Analysis

The objective of this paper is to provide a comprehensive analysis of Shenzhen's urban renewal policies, inclusive of all its policy instruments, domains and processes. In order to achieve this objective, an analytical framework of urban renewal policies is developed. Qualitative content analysis and descriptive statistics were conducted to examine the five target urban renewal polices. Content analysis is defined as the systematic research method that provides a qualitative description of the content with specific information attained through content-by-content encoding of semantic information and statistical analysis [35], it therefore can be one of main methods employed to receive a better understanding of policy instruments involved the urban renewal process comprehensively. Even though the datasets may not be statistically representative. Meanwhile, the main characters of urban renewal polices are explained through conducting descriptive statistics quantitatively.

In the process of content analysis, the analytic unit was set as the clauses within each policy document, and these were encoded. Of the five urban renewal polices, the number of units retrieved were 50, 21, 76, 25, and 30 respectively. Some examples of coding are shown in Table 3. Apart from the first policy, the remaining four were published in Chinese only. Consequently, these had to be translated into English. In order to ensure accurate pattern-matching, clauses were rendered as a single sentence, giving due regard to specific context, the legal system, as well as language; these are listed in Table S2 (in Supplementary).

3.3.3. Pattern Matching

This study also adopts a pattern-matching approach to fit the analytical units of urban renewal policies collected into the theoretical policy framework according to the unit's practical influence on every category of three dimensions. As discussed above, the definition of every dimension in the framework developed was employed to decide the policy category to which the related policy tools belong.

During the process of pattern matching there were two rounds of discussion. In the first, three experienced experts determined the appropriate relationship of each analytical unit in the three-dimensional framework. Specifically, the experts included the head of the "Urban Renewal

Bureau Luohu District, Shenzhen", an experienced urban planner at the "Urban Planning & Design Institute of Shenzhen", and a manager representing "Urban Renewal Group, Kaisa", a firm that has played a major role in implementing urban renewal projects in Shenzhen. If the three professionals agreed on where the unit belonged in the framework, that is where the unit was placed, and no further discussion was needed. The details are presented in Table 2.

However, where there was disagreement, a second round of discussion was entered into. The aim here was to reach a consensus by in-depth evaluation. Generally, the evaluation process involved several stages. These were, encoding the contents as different analytical units, tabulating the qualitative statistics of units into policy instrument tables, explaining reasons, determining the characterizing policy instruments, identifying their shortcomings, and providing recommendations for future policy development. Each of the three dimensions of the framework were analyzed using descriptive statistics based on Table S2. Furthermore, cross analysis was conducted between the "XY" dimensions and the "XZ" dimensions, in order to identify the key problems within the urban renewal activity domains and processes.

4. Results

4.1. "X" Dimensional Analysis of Urban Renewal Policies

A total of 202 urban renewal clauses were identified in the five policy documents. The findings from the analysis illustrate that the highest number of urban renewal policies fell into the category of Environment-side policies, with 70.30%. Next was Supply-type policies, with 15.84%. Demand-type policies were the smallest proportion, with only 13.86%. With regards to subdivision instruments under Environment-side policy, Legal Regulation had the highest proportion, with 42.08%, while Strategic Measures and Financial Support accounted for 18.81% and 9.41% respectively. The percentage of the three subdivision instruments under Supply type policy showed Technology Information Support, Public Capital Investment and Education to be 6.93%, 8.42% and 0.50%, respectively. Finally, the percentage distribution of the two instruments under Demand type policy were Market Cultivation at 10.40%, and Government Procurement at 3.47%.

4.2. "Y" Dimensional Analysis of Urban Renewal Policies

4.2.1. "Y" Dimension Analysis

As Figure 3 shows, Renewal Program has the highest percentage of the total policy counts, with 42.08%. This is much higher than the other three stages including Renewal Planning (32.67%), Implementation Construction (21.78%), and Post-Evaluation (3.47%). The findings indicate that the policy focuses mainly on renewal programs and some focus is placed on the earlier stages of the project lifecycle. However, the post-evaluation phase is rather neglected.
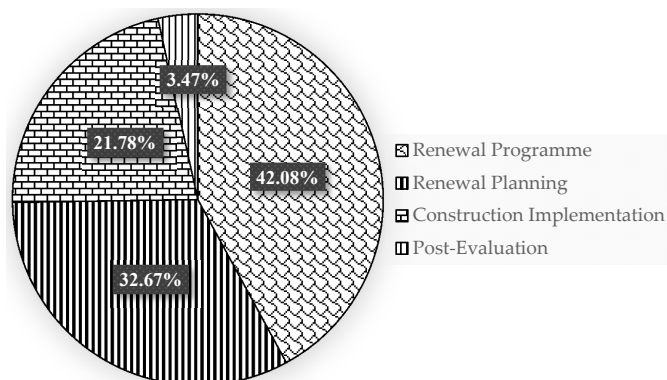

Figure 3. Percentages of urban renewal activity processes.

4.2.2. Cross Analysis of "XY" Dimensions

When we cross analyzed the "X" and "Y" dimensions (see Figure 4), it was seen that the highest total frequency under Renewal Program was for Legal Regulation policy, with, 44 counts. Strategic Measures also received 21 counts under Subject Confirmation. This presents that the policies mostly focus on Renewal Program and Renewal Planning, while there is no policy instrument in regards to Post-Evaluation.
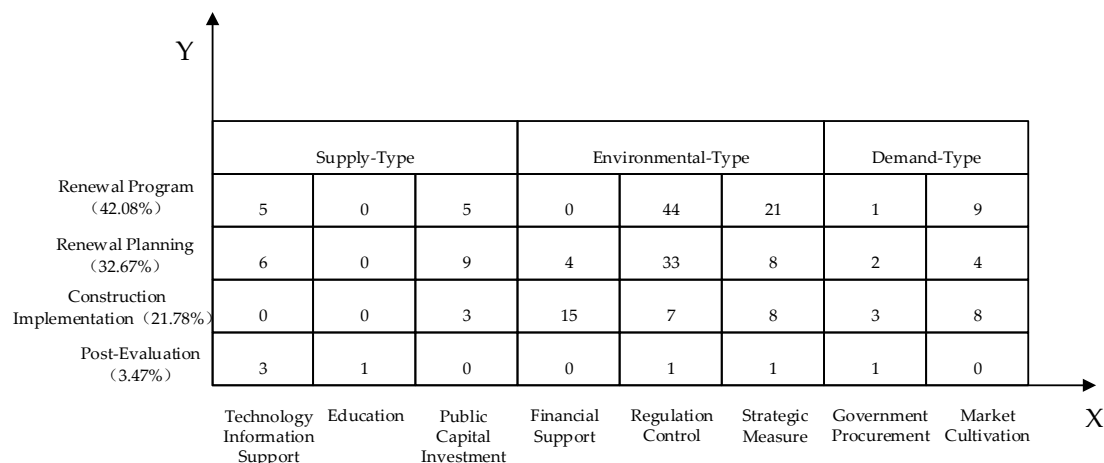
Y	Supply-Type			Environmental-Type			Demand-Type	
Renewal Program（42.08%）	5	0	5	0	44	21	1	9
Renewal Planning（32.67%）	6	0	9	4	33	8	2	4
Construction Implementation（21.78%）	0	0	3	15	7	8	3	8
Post-Evaluation（3.47%）	3	1	0	0	1	1	1	0
X	Technology Information Support	Education	Public Capital Investment	Financial Support	Regulation Control	Strategic Measure	Government Procurement	Market Cultivation

Figure 4. Cross analysis of "XY" dimensions of urban renewal activity.

4.3. "Z" Dimensional Analysis of Urban Renewal Policies

4.3.1. "Z" Dimension Analysis

The three major activity domains of the basic policy tools, i.e., Demolition and Reconstruction, Functional Retrofit, and Comprehensive Renovation, account for 70.48%, 14.29% and 15.24% respectively (See Figure 5). Considering the high demand for land, government uses demolition and reconstruction as the primary approach while the other two policy instruments are secondary approaches. Although the policy tools related to Demolition and Reconstruction activities are relatively complete, taking into account the future of urban renewal in Shenzhen, in all likelihood the ratio of the three activities may change in regards to their role and importance.
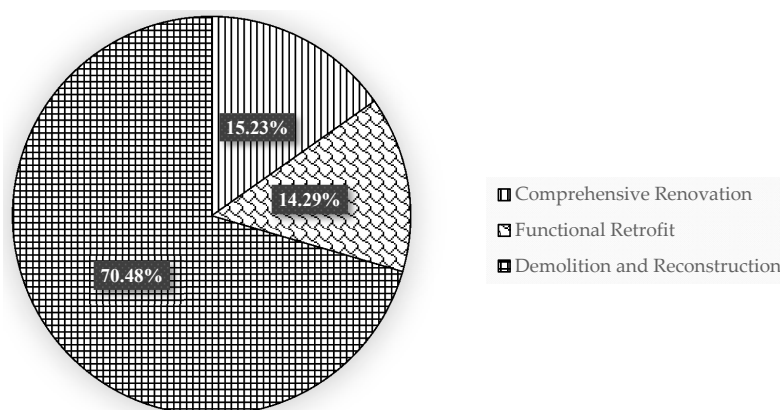

Figure 5. Percentages of urban renewal activity domains.

4.3.2. Cross Analysis of "XZ" Dimensions

As shown in Figure 6, Legal Regulation accounted for the greatest frequency among Demolition and Reconstruction, Functional Retrofit, and, Comprehensive Renovation, scoring 68, 9 and 7 respectively. The second most important policy instrument was Strategic Measures, with numbers in the different domains being 22, 8 and 13. However, less usage of Government Procurement and Market Cultivation might result in limited support and low performance from policy instruments, which might also demand more impetus in Functional Retrofit and Comprehensive Renovation types of urban renewal projects.

	Supply-Type			Environmental-Type			Demand-Type	
Demolition and Reconstruction（70.48%）	7	1	15	12	68	22	6	20
Functional Retrofit（14.29%）	2	0	1	4	9	8	1	0
Comprehensive Renovation（15.23%）	0	0	2	3	7	13	0	1
	Technology Information Support	Education	Public Capital Investment	Financial Support	Regulation Control	Strategic Measure	Government Procurement	Market Cultivation

Figure 6. Cross analysis of "XZ" dimensions of urban renewal activity.

5. Discussion

Based upon the results presented through "X", "Y", "Z" dimensional analysis and cross analysis of "XY" and "XZ" dimensions, some major findings regarding urban renewal polices are discussed in this section.

Firstly, legal regulation is the most significant policy tool for urban renewal policy. Looking at the analysis in Table 4 and Figure 3, the factor shown to have the highest proportion within policy instruments was Legal Regulation. However, the percentage of Strategic Measures was significantly lower than Legal Regulation; nevertheless, it had the second highest percentage and was higher than other sub-instruments. What this means is that official departments could continuously lower the threshold for entering into urban renewal processes, simplify the approval process for urban renewal plans, and adjust other related management measures by formulating regulations and planning to promote urban renewal projects which owe their existence to low operational costs and inherent governmental behavior [36]. The main purpose of "Legal regulations" is to set rules in the process of urban renewal program and planning, as shown Figure 4. While it has been highlighted that the government is pushing hard to promote urban renewal programs, they are generally implemented as a short-term strategy and undertaken within limited timeframes. Consequently, these programs are difficult to implement due to the lack of foresight as well as the limited operational ability of the government, particularly during the policy design stage. In addition, the high proportion of environment side policy instruments could be the result of the introduction of continuous amendments of existing policies. Similarly, the high frequency of Strategic Measures instruments might result from the government's optimistic bias during the early stages of urban renewal activity, where governments misjudge the complexities and risks. Many urban renewal objectives fail because of complicated land property rights, higher expectations for compensation, long-cycle approval processes, and unstable market risks for developers [37].

Table 4. Comparison of the numbers of policy instrument applications, for City of Shenzhen.

Types	Instrument Names	Num. of Policies	As a Percentage	As a Grouped Percentage
Supply-side	Technology Information Support	14	6.93%	15.84%
	Public Capital Investment	17	8.42%	
	Education	1	0.50%	
Environment-side	Financial Support	20	9.90%	70.30%
	Legal Regulation	85	41.58%	
	Strategic Measure	38	18.81%	
Demand-side	Government procurement	7	3.47%	13.86%
	Market Cultivation	21	10.40%	
Total		202	100%	100.00%

Secondly, the proportion of Supply side as well as Demand policy instruments remain relatively low. Compared with Environment-side policy instruments, Supply-side and Demand-side policy instruments seem to be more flexible and direct, which might, to a certain extent, eliminate unreasonable market-oriented mechanism problems. In addition, these two policy types could effectively promote urban renewal development and distribute profit more equitably between various stakeholders [38]. Nevertheless, the percentages of these two types of instruments were rather low, accumulating only 27.19% of the total, which indicates that there is a lack of balance overall in the policy instruments. This may be because urban renewal promotion has not been the top priority in government expenditure, nor has an alternate suitable approach to accelerate urban renewal been found. Particularly, Market Cultivation (8.74%) ranks the fourth highest percentage. It is regarded as an innovative sub-instrument of urban renewal policy that the focus group identified as effective at breaking through problems in land supply. In China, land-use rights and ownership of land are separated because the state owns all land in the urban area legitimately. Developers can only obtain land-use rights through auction or tender [39]. Yet, in spite of the process of acquiring land through auction or tender, it still remains that renewal projects to be raised on the acquired land must be negotiated with the indigenous inhabitants, village collectives, and government. These types of policies help attract many private developers to urban renewal since they gain higher returns than normal real estate projects through adjustment and transfer of the gross floor area [40].

Thirdly, Demolition and Reconstruction policies remain a high proportion of the policies evaluated. Similarly, Post-Evaluation attracts less attention in the overall urban renewal process (see Figures 4 and 6). Admittedly, Demolition and Reconstruction seems to be an effective approach in Shenzhen for accomplishing short-term goals. This is despite the negative impacts of breaking community connections, failing to protect the rights and benefits of low-income inhabitants, demolishing original cultural heritage buildings, and so on [41]. As a result, this distribution of urban renewal policy complies with the current situation, since the challenge for the government is to balance the benefits between different participants while accelerating urban renewal development, and at the same time conforming to broader urban transformation strategies. Furthermore, maintaining the current pace of implementation may dilute the quality of urban renewal to a great extent. The government undoubtedly neglects Post-Evaluation polices from a lifecycle perspective, and as a result may just end up enacting policies that are inefficient. Reviewing and rethinking recent urban renewal outcomes by conducting Post-Evaluation, might be a valuable way to take stock of the effects of existing policies, and provided a beneficial way to tailored them towards better outcomes.

6. Conclusions and Suggestions

Until now the existing studies on the evaluation of urban renewal polices in Mainland China have not yielded conclusive results, especially in quantitative analysis; this paper fill this gap in the literature. This paper establishes an analytical framework based on the policy instruments, addresses

the composition of policy instruments for urban renewal, and explores the existing problems of urban renewal policies in Shenzhen, China. According to the cross-analysis performed above, it can be seen that several measures can be applied to facilitate urban renewal implementation. What is clear from the research is that the urban renewal policies are robust; however there are also opportunities for further improvement.

Firstly, the government should rationalize the announcements of urban renewal and planning policies in ways that limit their number, even though Environment-side policy made significant impacts on promoting urban renewal projects, while ensuring that those that are issued are carefully crafted to be optimally effective. Currently, factors such as the land pricing system and approval process change constantly over the urban renewal process. Thus, the government should investigate the micro situation of urban renewal in order to streamline these issues to ease feasibility of implementation.

Secondly, a further measure would be to increase the number of demand and supply types of policies. Compared to environmental side polices, supply side and demand side policies are more responsive to market-oriented mechanisms. As for supply-side policies, the government may provide sufficient incentives through technological information support by building a dynamic database and information platforms for public participation in urban renewal projects. In addition, a three-level integrated decision support system consisting of macro-corporatism programs, meso-corporatism planning and micro-corporatism projects could be developed. The government should also focus on personnel training that would strengthen the capabilities of urban renewal professionals to develop skills specific to urban renewal projects. In relation to supply-side urban renewal policies, the urban renewal not only includes real estate and industrial parks, but also covers renewal of municipal infrastructure and transportation facilities. Thus the government should cultivate greater market participation in general urban renewal projects. Furthermore, the government should place emphasis on procurement systems that allow the goals of urban renewal projects to be in line with the goals for Shenzhen's urban development. These procurement systems can guarantee the land-use for industrial innovation and public housing, in order to sustain Shenzhen's competitiveness.

Finally, the third significant measure is to attach importance to the systematization, synergy and compatibility of the various urban renewal policies. In order to generate a more systematic regime, the legal framework which guides urban renewal activities should be integrated across the whole urban planning system. In addition, although backup policies for urban renewal projects have been published in regards to industrial buildings, municipal engineering, planning standards and land pricing systems, policies regarding the organization and financing of urban renewal projects need to be improved further.

As an explorative study, this paper has some limitations. One such limitation is that the taxonomy of basic policy instruments are regarded with equal weight, even though they are not all likely to have an equal impact on promoting urban renewal development in the process of policy instruments' pattern matching. Furthermore, all the urban renewal policies are only Chinese versions, which may generate ambiguities if translating into an English version. Thanks to different institutions and specific contexts, one concluding sentence replaces and stands for every specific clause during the process of pattern matching. Due to these limitations, the findings of this study may not easily be generalized to other regions. The quality of the research will also depend on the individual skills of the researchers and is more easily influenced by the researcher's personal biases and idiosyncrasies. These limitations will raise starting points for the future study of urban renewal.

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