When POPS Travels: The Transnational Transfer of Incentive Zoning Policy and Its Implementation in Taiwan

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POPS, as known for "Privately Owned Public Spaces", are amenity space built by private developers in exchange for additional floor area through incentive zoning ordinance. As part of 1961 New York City Zoning Resolution, their successes have drawn practitioners from local and aboard. In Taiwan, the concept of incentive zoning was first adopted in the capital city Taipei and later applied to all urbanized areas in Taiwan in 1984. Different from the original concept of "zoning" incentive with particular designated area in mind, the Taiwanese adaptation has been implemented as part of the building codes with site constraints only. What is the impact when the ordinance administered in the domain of building regulations rather than planning? Does the provision of open spaces serve in areas in need and who should hold accountable? These answers become fuzzy when the incentive zoning policy meets varying local conditions and morphological patterns. This paper takes Tainan City as a case study to examine the policy implementation in a historical yet less-densely built city. The POPS produced in lately 3 years are compiles from the building permit record system. To understand their spatial patterns at different scales, the distributions of POPS are identified in GIS and overplayed with existing socio-economic-physical variables. The types of open space, their patterns and use are examined through site visits and statistical analysis. This paper wishes to demonstrate the local adaptation of a transnational policy and develops a deeper understanding of its potential impacts.

1. Introduction

In view of the demand of urban public space and the creation of open space by private sector, the first implementation of incentive zoning regulation began in New York City in 1961. In exchange for additional floor area, private developers can provide and maintain an amenity place for public use, which so-called Privately Owned Public Space (abbreviated as "POPS"). Incentive zoning add flexibility to the traditional rigid zoning regulations, and the provision of open space drawing practitioners from local and aboard.

In Taiwan, the concept of incentive zoning was first adopted in Taipei, the capital city, and later applied to all urbanized areas in Taiwan in 1984. Different from the original concept of "zoning" incentive with particular designated area in mind, the Taiwanese adaptation has been implemented as part of the building codes with the constraints of condition of sites only. What is the impact when the ordinance administered in the domain of building regulations than planning? Does the providing of open spaces in areas where the shortage happens and who should hold accountable? These answers become fuzzy when the incentive zoning policy meets varying local conditions and morphological patterns.

The problem of incentive regulation gradually happened (Shie, 2006). Due to the dispute about the openness of the POPS, residential area was excluded from the eligible application list in 1999 in

Taipei zoning regulations in consideration the difficulties of management. However, except for Taipei City, other cities in Taiwan still adopted in building code until now, in which condition of site is the main factor of the decision whether POPS bonus is applicable instead of planning. The doubts of benefits supplied by POPS still exist, and how its impact on urban open space is still unknown.

In the past, incentive regulations are mostly analysed in capital cities or big cities. For consideration the difference between the social and substantial environment, this research investigate the phenomenon in the secondary city—Tainan by using the building application information in past three years. To understand their spatial patterns at different scales, the distributions of POPS are identified in GIS and overlaid with existing substantial space map. By analysing the location and typology of POPS, this paper aims to demonstrate the local adaptation of a transnational policy and develops a deeper understanding of its potential impacts.

2. Institutionalisation of Market-oriented Policies in POPS

Since the 1970s, the globally interconnected crises of Keynesian Fordism and East Asian developmentalism have given rise to increasing neoliberalisation (Jessop, 2002). Neoliberal scholars claim that state should vigorously reduce authority, induce a shift to market-oriented economies (Brenner & Theodore, 2002). Neoliberalism emphasis on reinventing governance, and government must guide development and release authority. With globalization and the growing power of multinational enterprise, national government become gradually powerless to control the condition of economy and society, turning national development competition into urban or regional competition. Increasingly, urban policy in modern societies has a competitive character: It seeks to achieve the highest utility of socioeconomic progress and attract private capital investment. In a situation of devolution of nation-state administrative power, cities are bound to become more entrepreneurial, more market-oriented and more international with a view to participation in global networks (Nijkamp et al., 2002).

Influenced by liberalization and privatization of urban policy caused by the emergence of the neoliberalism, environment of urban political structure and governance mechanism is generally formed to being friendlier to developers and the alliance of real estate. However, these enterprise are profit-driven, causing urban growth coalition often trumps public-oriented planning actions. Neoliberalism brings conflicts and paradox of urban reconstruction, creating challenges of socioeconomic polarization, uneven geographical development and gentrification (Brenner et al. 2012, Jessop 2002, Pickvance 2012).

Public sector and private sector have already realized that both of them can't afford the responsibility of social operation by their own, wherefore to seek new cooperation relationship under the trend of neoliberalism (Wu, 1996). At the same time, due to fiscally strained of government and popularization of privatization, the public sector has to cooperate with the third-party to achieve public goals. The number of planning practices where collaboration models applied has rapidly increasing. In particular, public-private partnership solutions have become popular in the areas of infrastructure provision (for example, parking facilities), affordable housing constructions, and urban redevelopment and revitalisation projects.

Public-private partnerships (abbreviated as PPPs) become a popular strategy and rhetoric in the context of neoliberalism. PPP provide a unique perspective on the collaborative and network aspects of public management. PPPs can be defined as 'co-operation between public and private actors with a durable character in which actors develop mutual products and/or services and in which risk, costs, and benefits been shared' (Klijn and Teisman, 2003). PPPs put spirit of business management into

administrative system, making public sector more efficient, marketability, and entrepreneurial. It's not only a pure mutual relationship, but also a win-win game of integral resources. The essence of PPPs are privatization and economic decentralization, may result in the malady of local policies controlled by enterprise, causing private sector gain profit with cost put upon the citizens.

Policies are not physical objects that can be transferred with their content intact (McCann, 2011). Since neoliberal governance is improvisational and produces locally unique forms of urban governance wherever it takes hold, there is an identified need for informed case studies on how 'actually existing neoliberalism' is produced in situated settings (Brenner and Theodore, 2002) Evidence of neoliberalisation in Taiwan is increasing, ranging from relaxation of regulations on land supply and planning procedures to provide public goods by the private sector. We focus on examining how a series of 'keenly negotiating, processual, and space-mobilizing constructions' (Wilson, 2004: 780) have driven incentive zoning mechanism as a deregulated, market-based policy. The aim of this research is to discover whether quality of substantial amount of POPS achieve the original goals of the policy, and the adaptation of incentive zoning policy in Taiwanese practice through investigating its implementation in Tainan City.

3. Spatial Influence of the Policy

Floor area control, or floor area ratio (FAR) is part of the zoning regulations. The main purpose is to control the intensity and distribution of urban development, ensuring the quality of living environment and the provision of public facilities. However, due to rapid urban development and fiscal crisis of the local government, problems such as lacking of urban public facilities, difficulties of promoting public infrastructure, and low quality of public facilities is becoming more serious.

To solve the shortage of public services provided by the public sector, governments increasingly tend to improve the urban environment by public-private partnership mechanisms, where " incentive zoning" is one of the solutions for the shortage of open space provision in traditional "land use planning" (Yang, 2007). The mechanism of incentive zoning encourages private sector to provide open space in exchange with extra floor area space of their development projects.

3.1 Policy and the provision of POPS in the United States

As the originator of incentive zoning regulations, New York City implemented open space bonus FAR policy in 1961. The program encouraged private developers to provide spaces for the public by allowing extra floor space in certain districts. In the New York City, the policy of POPS was influential to the cityscape, especially in the commercial districts. During the past five decades, the incentive mechanism of POPS has created 85 acres of public open space in the boroughs of Manhattan, Brooklyn and Queens (Schmidt et al., 2011). The open spaces provided by POPS in New York City are claimed to be beneficial and influential to citizens' daily life.

As part of 1961 New York City Zoning Resolution, their successes have drawn practitioners from local and aboard. With the extensive application of incentive zoning, many local governments realized that the mechanism has to consider comprehensively. To make the incentive policies complement one another in a city, local governments should quantify the goals of policies, ensuring the necessity of incentive, arrange the priority and making differences of inducement (Yang, 2007).

Using incentive mechanism without consideration of the overall effect will cause the zoning regulations be destroyed, resulting in the chaos of urban function and the disorder of real estate market, which used to happened in Seattle and Portland (Yang, 2007). Therefore, many local

governments in the United Stated set goals of each incentive mechanism, with the development location been decided and the standard of FAR bonus been designed purposely. The priority be reorganized based on the political target each year, and the total amount of incentive zoning will also be regulated. Government will rectify relative regulations regularly to ensure each policy reach the targets.

3.2 Policy and the public space in Japan

Basically, the planning system in Japan followed that of the Western countries. These zoning regulations are used to deal with reconstruction after disasters, such as earthquake (Liu, 2009). Unlike the United State, incentive mechanism in POPS isn't only applicable in commercial districts, but also in residential and industrial area as well (Gao, 2001). Japanese POPS is implemented in two regulatory system: both zoning and building code regulations.

The urban population rapidly growth in the late 1950s, caused deterioration of urban environment, especially in commercial area. To prevent the further deterioration, Japanese government modified zoning regulation, setting a new zone where the density regulation is flexible. The FAR bonus will be implemented in this new zone if the open spaces created during development. Although this new regulation considerate the location of FAR bonus and surrounding area from the view of overall urban development, the decisions are practically made by governments, causing questioning of legitimacy due to the absence of public participation (Chen, 1995).

The further expansion of FAR bonus into the building code system was to stimulate the real estate market in Japan in 1970s. The Japanese government modified building codes in 1970, allowing development site exceed certain size to be eligible for gaining FAR bonus of the provision of open space, traffic and safety can be accommodated in the project. The incentive in the building code system has being adapted more often than zoning in Japan due to its greater flexibility. Yet the regulation broadens FAR only with limited site constraints, without considerations surrounding land use and capacity of public facilities. The provision of POPS were distributed unevenly and caused serious burden of public facilities in some areas (Chen, 1995).

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3.3 Policy and the public space in Taiwan

The planning and regulatory system in Taiwan was highly influence by Japan and the United States due to the colonial governance and post-World war II assistance respectively. Due to the colonial governance by Japan, Taiwanese incentive mechanism was at first significantly influenced by Japanese regulations, especially in the building code system. With the aid from the State during the post WWII, the planning system and zoning concept becomes the core of land use planning in Taiwan. Influence from both countries result in a hybrid-nature in the development control system in Taiwan. When a new policy is about to propose, we often see a strong tendency of looking after two country's models among scholars and officials to find a proper balance in between.

Taiwanese incentive mechanism was first implemented in Taipei City in 1983. As capital of Taiwan, urban planning in Taipei started in 19 century during the era of Japanese colonization. To coordinate the demand of urban construction and development, Taipei City first adopted FAR control in 1967, and then, to complement the shortcoming of zoning, the government introduced the mechanism of urban design deliberation and incentive zoning, aiming to improve the rigidity of zoning and to a create better urban environment. The initial goals of the policy adoption in Taipei City were as followed: encourage integration of site and overall development, provide urban public open space,

give flexibility of building design, promote disaster prevention function, and regenerate old downtowns etc..

Similar to that of Japan, incentive mechanism was first introduced in zoning regulations in 1983 in Taipei City and later integrated into part of the national building code in 1984. As part of the building codes, the FAR bonus is applicable to anywhere in every cities with restrictions of site area. The key restrictions of FAR bonus applicable site are street-width (greater than 8 meters) and minimum size of site (1,000 square meters in commercially-zoned area and 1,500 square for residential). According to the regulations, open spaces are specified as a space for pedestrian passage and leisure function for public at certain size. Type of open space includes 'pedestrian space' and 'plaza', where different incentive coefficients are given to calculate the extra FAR bonus gain from the open space provision.

The problem of the lack of management of incentive regulation has gradually emerged. Due to the social dispute about the accessibility of the POPS in the residential projects, 'residential zone' was excluded from the applicable list in 1999 in Taipei's zoning regulations (Shie, 2006). However, incentive mechanism of POPS still applied everywhere through building code system in other Taiwanese cities until now. As the result, the locations of the POPS are then determined by the site conditions and less concerned about the overall provision of public space to meet the planning and social goal. This pattern bring up our main questions of inquiry: What are the patterns of distribution of these POPS with the spatial constraints by building codes? Are these POPS located in the area in need?

4. Data and Methodology

This paper takes Tainan City as a case study to examine the policy implementation in a historical yet less-densely built city. The study area covers the developed centre of Tainan, consisting of East Dist., West Central Dist., North Dist., South Dist. and Anping Dist.. There are 53 building permit applications involved in POPS from May 2012 to March 2015 being analysed in this study. The data is compiled from the building permits issued by Department of Buildings Management of Tainan Public Works Bureau. This study synthesized and analysed the information of these 53 cases, including the administrative area, zoning, the developed merchandises, the type and area of POPS, quantity of FAR bonus and whether its applied TDR.

The empirical analyses are divided into two steps. We first mapped the 53 projects sites applied for POPS by geocoding each project and overlay with the figure-ground of existing city to see its geographic distribution. Second, we investigated the planned and current states of public open space in each district to compare their differences and to identify the districts in need of POPS in supplementing open space provision. By comparing the two we intend to identify if there is a spatial mismatched pattern in provision of POPS as a neoliberal policy. By these two steps of analysis, this study examines the preliminary effects of POPS policy in Tainan, Taiwan.

5. POPS Analysis—Empirical Study in Tainan City

5.1 The Distribution of POPS in Tainan

There are a total of 53 projects applied for open space FAR bonus in the past three years, and in total account for a provision of 7.07 acres of new POPS in Tainan. Among these projects, 18 cases are located in Anping Dist., 13 cases in West Central Dist., 12 cases in South Dist. and the rest of them distributed in two other districts. As the number mentioned above, the area amount of POPS in Anping Dist. is the largest (2.33 acres), followed by South Dist. (1.96 acres) and West Central Dist.

(1.34 acres). The research measure the area of POPS in each cases, finding that the average area of area per case in East Dist. is the largest (2,252 square meters in each case), while the average area of POPS in North Dist. is the smallest (634 square meters in each case).

Table 1. Projects with provision of POPS in District in Tainan between 2012-2014

Administrative district	population	Number of New Projects	Number of projects applied TDR	Area of POPS (M^2)	Average area of POPS per person (M^2)	FAR Bonus by POPS (M^2)	Potential increased residents by POPS floor bonus
West Central Dist.	78,064	13	10	13,388.13	0.172	30,406.55	278
North Dist.	132,459	5	5	3,170.50	0.024	6,689.93	69
Anping Dist.	64,745	18	16	23,331.26	0.360	45,345.22	440
East Dist.	190,360	5	0	11,257.89	0.059	14,625.81	108
South Dist.	125,650	12	12	19,592.00	0.156	24,310.53	445
Total	591,278	53	43	70,739.78	0.154	121,378.04	1,340

The actual distribution of the POPS showed a much evident pattern as compared to the aggregated data presented by administrative district. In the figure below, we identified the spatial distributions of POPS in GIS and overlay it with figure ground map of Tainan. Most of the 53 POPS are located in or near the periphery of the cities where more vacant space available, instead of located in earlier developed area near the core of the city.

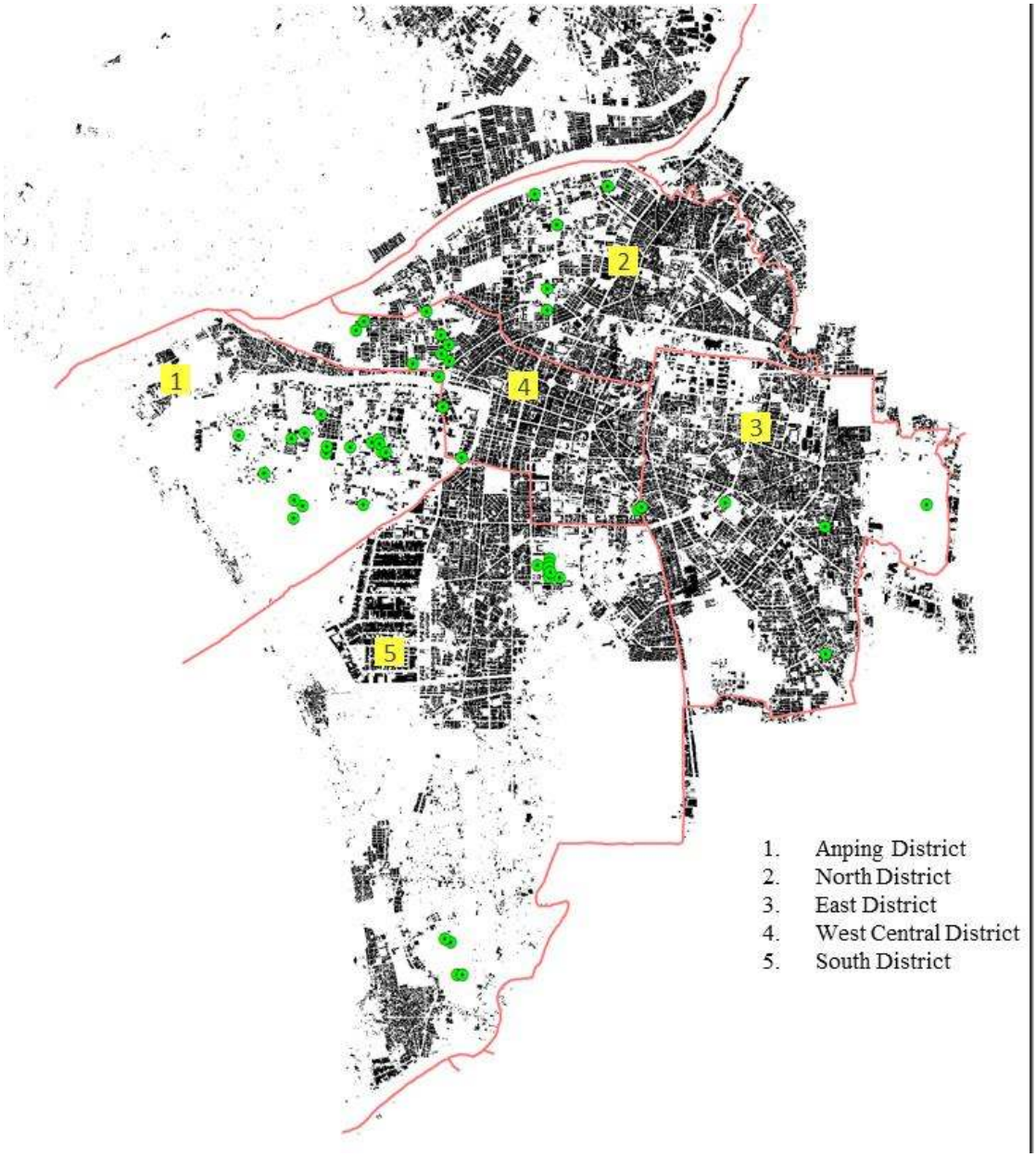

Figure 1. Location of Projects with Provision of POPS

We further analyse the distributions of POPS based on zoning and the primarily land use of each project. From the zoning perspective, more than 70% (39 cases) are located in residential zone and 30% are located in commercial zone. However, the publicness of POPS may differ by its primary land use. We examine the details and found out only 2 out of 51 cases are commercial properties (hotels). The rest are 25 mixed-use projects with residential plus ground commercials, and with the rest are purely-residential properties. The publicness of private-owned public space usually decreases from commercial to residential. In the case of Tainan, the POPS in commercial properties are less likely to be friendly or accessible for public with hotel uses. The one are more likely to open for public are those mixed-use projects, which account for only about 50% of the total POPS cases.

5.2 The mismatched of the provision of POPS and the Needed Area for Open Space

As one of the oldest city in Taiwan, Tainan City was colonized by different nationalities (such as Dutch, China and Japan) since seventeen century. It used to be the center of colonial government, making itself transformed from undeveloped region into a city. With the construction of commercial harbour and the government buildings, West Central Dist. was developed earliest in Tainan City. With urban development and expansion of the city, areas such as East district, North Dist. South Dist. And Anping district have been incorporate as part of urban area from its earlier rural conditions.

The initial goal of the POPS is to improve the overall urban environment by provide public space for the area in need. To measure its effectiveness of POPS in Tainan, we further examine the allocation of existing public-owned public space. What we included in the open space calculation are park, green space, playground and plaza. We found out that the overall provision of open space in Tainan City is unevenly distributed and highly correlated with its history of development. Older area on average has less open space than newer area. Geographically, the amounts of urban open space provided in central district are less than other surrounding districts.

Viewing the average open space per resident in each district, the amount of service level of West Central Dist. is the lowest, followed by East Dist. and North Dist. The newest development areas, including Anping Dist. and South Dist., share the largest amount of open space per residents on average. The open space each resident shared in South Dist. (9.25 square meters per resident) is five times greater than in West Central Dist. (1.61 square meters per resident).

Table 2. Provision of Public-Owned Open Space by District in Tainan

Administrative district	Population in prediction	Population in reality	Total area (acres)	Planned open space (acres)	Area of open space per resident (planned) (m^2/person)	area of open space per resident (current) (m^2/person)
West Central Dist.	107,600	78,064	628.87	17.28	1.61	2.21
North Dist.	177,050	132,459	985.48	70.92	4.01	5.35
Anping Dist.	96,500	64,745	603.98	44.02	4.56	6.80
East Dist.	243,200	190,360	1,430.54	80.49	3.31	4.23
South Dist.	160,000	125,650	2,714.92	147.98	9.25	11.78
Total	784,350	591,278	6,363.79	360.69	4.60	6.10

If POPS play an important role for supplementing of public-owned open space, we should see the old center receive the largest amount of POPS. Comparing Table 1 and Table 2, it is evident that POPS in West Central District do not sufficiently supplement the lack of public space in this area. While Anping and South districts where the greater amount of open space on average are received also get more POPS on average than the city center.

5.3 The analyses and impact of POPS

POPS does not take place in the right location and right property in Tainan. Due to the existing saturation of downtown, there are rarely large-area undeveloped site in West Central Dist. and East Dist.. Requirement of scale of site are in building code regulation is a possible key factor causing the

lacking of POPS in the right place. Urban fringe or other sites without land assembling issues are preferable sites for tall building development that applied for POPS incentive FAR bonus. In addition, these spaces are mostly privatized place for residential properties. Compare to the Capital City Taipei, the population density in Tainan is a lot less, about 1/10 of that in Taipei. The commercial developments primary take place on the street-level retails, with very little commercial real estate on office development. As the result, most of the tall building developers prefer residential properties because of its marketability in real estate market. Compare to the general application of other countries in commercial area and offices, whether the public benefits and accessibility of POPS are in line with the expectation may become an issue in the future study.

POPS are not free meal. Each comes in exchange of floor area space for additional development in each project. These 53 cases in total applied for about 121,000 square meters of bonus floor area for the open space it provided for public use. This extra space could accommodate at most extra 6,086 living units and 16,000 residents. In addition, the research also discovers that about 80% of these POPS cases are also the receiving site of transfer development rights (TDR). The total amount of extra FAR these projects applied is able to accommodate about 2,840 additional residents, adding about 17.5% more of new residential population that does not included in the land use planning. The additional residents come with the floor area bonus which may influence the carrying capacity and lower the service standard of public facilities in each district.

6. Conclusion

Policies are not physical objects that can be transferred with their content intact (Therdore, 2010), instead, imported policies are stripped down to their administrative or methodological 'essence' and then re-embedded into local contexts (Peck and Theodore, 2001: 435). Through the Taiwanese experience, the study discover that the regulations consisting of different spirits of the United States and colonial government make site condition become the main factor which decides whether incentive of open space is applicable. Practically, the locations where POPS happens are not the location where the demands are strongest, which disobey the original goals of the regulation, since the development location can't be decided by spatial planning and the public goods provided by market without management.

This situation of POPS in Tainan responding to the real exist neoliberal marketed-oriented public policy in cities. The observation is a powerful indicator that real estate capital fully exploits market-oriented POPS policy in pursuit of profit, causing provision of POPS didn't set in the demand location where the public services is difficult being provided by public sector. The development of POPS didn't reach the initial policy goal, which is providing urban open space in poor public service region and promote urban regeneration in old downtown by public-private partnership.

In conclusion, the incentive mechanism of POPS has been significantly diverted from its original utility as open space provision in commercial area in New York City. This research investigates the impact of locally adapted POPS in Taiwan, verifying that urban development under neoliberalism become more uneven, inhomogeneous and polarization. The neoliberal effects identified in our analysis contribute empirical depth to the scholarship on urban policy mobility, which remains theory and process-oriented.

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