

**Assessing the Publicness of Pedestrian Plazas
Built Under the 2007 NYC Plaza Program**

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by

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Abstract

The purpose of this thesis is to assess the “publicness” of pedestrian plazas under its development guidelines from the NYC Plaza Programs (NYC Office of the Mayor, 2007) through a comparative study of private and public space. Drawing from existing models of publicness, the paper proposed a hybrid model to measure publicness and then investigated how “public” the pedestrian plazas built under the NYC Plaza Programs are using a mix methods approach of geospatial data and literature review. In the process, it simultaneously challenged underlying definitions of “publicness” and the contentions around privatization in the urban environment. The study suggests that the assessment of publicness for the NYC Plaza Programs demands a context-specific model to the program where metrics are calibrated beyond a simple hybrid of existing models. Ultimately, it is recommended that future studies for measuring publicness should include on the ground observations and fieldwork to account for the individuals who are arguably the true owners of a public space.

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Chapter 1

Introduction

When a city is born, so is a public space. The capacity for spatial networks to draw people together and carry out meaningful engagement has been vital to the life of urban dwellers. It is a space that is constantly evolving, where the tangible meets the intangible and where a space grows into a place. At the center of the physical environment is the public which constitutes the people who walk the streets, breath the air, and view the cityscape. Every design choice behind a city plan is imbued with intention for moments of encounter. Publicness is what makes a city unique from a space. In urban planning, the role of the planner is to weave together the multidimensional elements of the public and add value for the individual's experience of a city. Through choice and behavior, planners are able to define public space and observe how it best functions to enhance the livability of a city.

From the right of way in streets, to the distribution of parks and open space, there are a wide range of models for public space to take form. In especially dense cities, such as New York, public space is constantly redefined. The push for increased density, mixed-use development, and multi-modal transportation forces planners to reconceptualize public space in alternative forms that are cognizant of the existing environment. However, there has been a continuous fear that public space is at a threat due to the encroachment of privatization in the public realm.

The 2007 PlaNYC set forth sustainable redevelopment of land use strategies to rebalance the distribution of open space, parks, and other public facilities necessary for a healthy community (NYC Office of the Mayor). Within the plan, a proposed Plaza

Programs initiative sought to ensure that “all New Yorkers live within a 10-minute walk of quality open space” by seeking out underutilized streets and converting them into pedestrian plazas. However, alternatives to open, public space is not an entirely new concept in NYC. The rise of privately owned public space has challenged historical conception of a public space model.

In New York City, the late 1960’s was a turning point for planners when an update to the zoning resolution allowed developers to gain extra Floor Area Ratio (FAR) bonuses through a transactional exchange of private to public space. In order to meet the needs of a fair and open space, the strategic use of privately owned public space (POPS) challenges the pluralistic definition of “the public” through its single ownership. Developers retained the right to monitor and control access of the public space since it is located on private property. This spurred a rise in the privatization of public space and what many scholars have thematically defined as a “narrative of loss” in the public realm.

The shift in ownership towards the private realm raises concerns around the debates of “who owns the city.” It forces planners to challenge their role in the intersection of public and private realms and to reevaluate regulations and metrics of publicness. The demand for de-privatization comes at a time when cities are experiencing urban growth and increased density. An imbalance between supply versus demand of public space in cities such as New York opens the opportunity for planners to reimagine models of publicness. More importantly, it begs us to ask what is the future for public space? Are alternative forms a suitable tradeoff from our conceptual

understanding of how a public space should function? How might urban planners come to terms with such alternative models in the planning process?

The inspiration for writing this thesis was born from a curiosity on how models or frameworks of understanding around publicness can help planners better assess different forms of public space. Paired with the influx of digital data, the research on mobility and behavior has new, unprecedented opportunities to inform planning processes. The paper recognizes the power of digital data as an asset to decision making and will advocate for planners to increase the integration of emerging technologies into their practice.

Contributions of this paper are twofold. First, it will build a new model for measuring publicness based on an evaluation of existing models. Using a literature review on theories of publicness and then a critical, cross comparison study, the paper will propose a hybrid framework to measure the publicness of public spaces. Along the way, a review of precedent case studies on plaza program design and planning will be critically studied. Second, it will challenge conceptual definitions of public space and theoretical frameworks of publicness to assess if plazas are a form of public space.

1.1 Background:

As part of Mayor Bloomberg's 2007 PlaNYC strategic plan, an ongoing effort to identify underutilized roadway spaces and convert them into pedestrian plazas has been in effect (NYC Office of the Mayor, n.d.). The vision behind the plan - NYC Plazas Program - was to ensure that "all New Yorkers live within a 10-minute walk of quality open space" (NYC Department of Transportation, 2011). The program worked in partnership with the Department of Transportation (DOT) and extended its reach with nonprofit organizations such as business improvement districts (BIDS) to identify catalytic sites.

What was profound about the plan is the partnership with the DOT where public space is under the guise of a transportation agency and street corridors are sought out for the conversion of pedestrian friendly public spaces. In the transit world, tension surrounding the "right of way" has paved conversations for the redesign of streets to function beyond the sole purpose of mobility and to prioritize multimodal transportation systems. Taking the discourse of public space into the transportation world was a highly controversial approach by the city's government and fueled criticism for threatening the public realm through its plaza application process which seemingly narrows the operation and management into a singular agent.

In economics, a "public good" has 2 major defining characteristics: First, they are non-excludable, so you cannot prevent someone from using it and second, they are non-rivalrous, so somebody using the good does not limit others' use of the good. Taking this theory into the context of a public space planning in NYC, the planning

commission resonates a similar definition in section 37-70 of the NYC Planning Zoning Resolution (2007), where public plazas are designated as “open areas on a zoning lot intended for public use and enjoyment.” It states that public plazas are intended with the follow purposes in mind:

1. To serve a variety of users
2. To provide space for solitary users while at the same time providing opportunities for social interaction for small groups
3. To provide safe spaces, with maximum visibility from the street and adjacent buildings and with multiple avenues for access

The guidelines provided by the zoning resolution is a face value assumption that pedestrian plazas built under the NYC Plazas Program adhere to these principle purposes. Precedent studies have attempted to question the publicness of the NYC Plaza Program through traditional surveying and algorithmic image detection. In 2007, Gehl Studio conducted a study on public life across opportunity zones for pedestrian plazas in NYC to help strategize and ultimately create the NYC Plazas Program. They followed up on the success of the program with another report in 2015 published in joint partnership with the J. Max Bond Center on Design for the Just City to evaluate how reclaimed street space in the form of NYC public plazas impact urban justice” (p. 4)?

Similarly, landscape architecture, urban design, and planning firm SWA also revisited the works of William H. Whyte’s (1980) plaza study entitled *The Social Life of Small Urban Spaces* but instead of using Whyte’s method of documentation through videotaping and note taking, they applied a machine learning technique to image

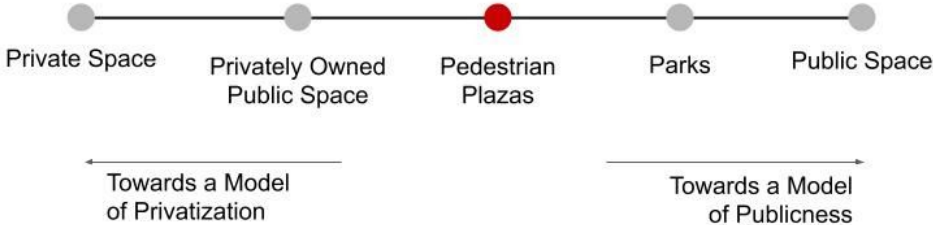
classify the patterns and behaviors of people in plazas. Reviewing these precedent studies allows the paper to critically engage with existing dialogue on the plaza program and bridge the gaps in research. Each study’s methodology and findings will be further discussed in Chapter 2A of the paper, under the precedent case studies section.

1.2 Research Aims and Questions:

Planning for public space has been a longstanding, highly contested discussion for urban planners. Given the recent rise in conversion of underutilized streetscape for pedestrian plazas, it is important to study the physical and metaphorical networks of this new form of open, public space in relation to existing forms of open, public spaces. Contested theories of public space have centered around defining publicness. Using supportive literature, this thesis will critically engage in the dialogue of public space management, ownership, and planning with the following questions in mind:

Are pedestrian plazas under the NYC plaza program a form of public space?

Figure 1: Publicness Scale

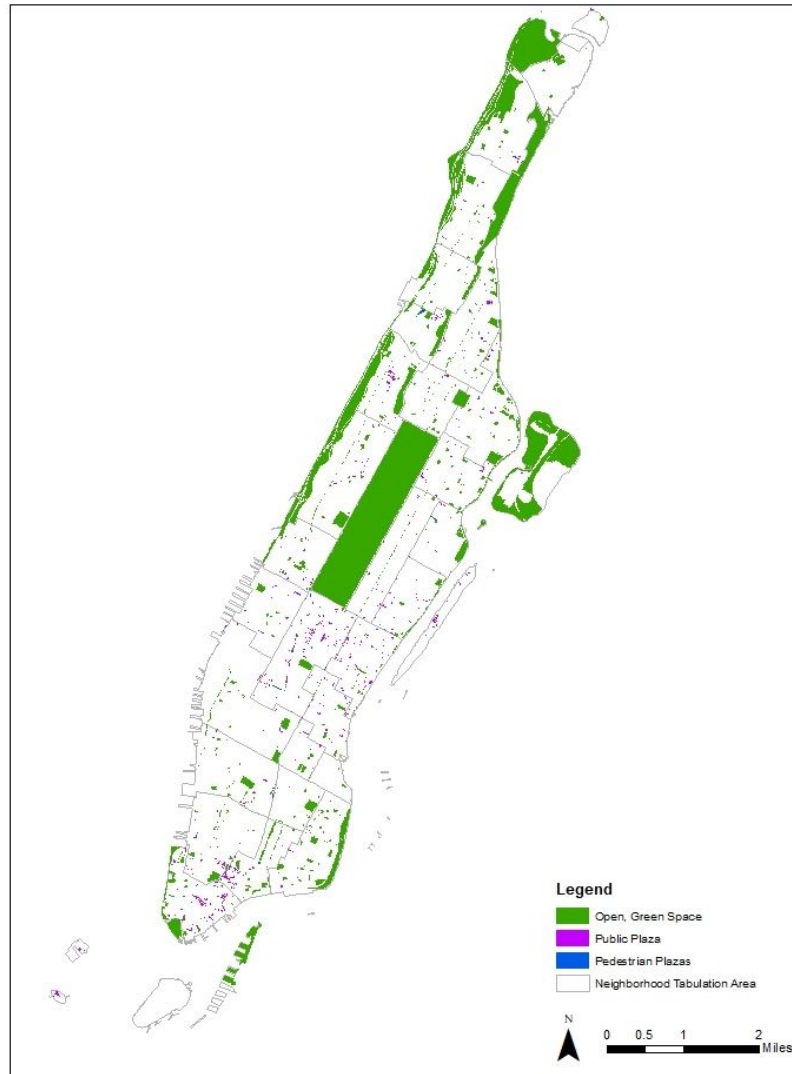


To measure how public they are, the paper will use existing models to draw up the categories by which the research question will be tested on. In efforts to do so, the thesis will explore the following subquestions:

- What are the metrics used by existing models of publicness?
- How are existing models similar and different?
- How do we measure to what extent of publicness do pedestrian plazas offer under the NYC plazas program?
- What physical and metaphorical characteristics distinguish a private space from a public space?

The hypothesis of this paper is as follows: Plazas developed under the NYC plaza programs are a form of public space but offers a different value of publicness that requires planners and other scholars to expand on their existing theories of publicness.

Figure 2: NYC Public Spaces Mapped in Relation to Neighborhood Tabulation Area



Source: New York Department of Information Technology & Telecommunications. *Open Space* (Parks shapefile]. 17 June 2014, updated 27 August 2016.

<<https://data.cityofnewyork.us/Recreation/Open-Space-Parks-/g84h-jbjm>>

New York City Department of City Planning. "New York City Borough Boundaries" [shapefile]. *Bytes of the Big Apple, Issue 16D*. 27 October 2016.

<<http://www1.nyc.gov/site/planning/data-maps/open-data/districts-download-metadata.page>>

Chapter 2

Literature Review

The literature review offers a synthesis of historical inquiry in related work that will help frame the paper's methodology and ultimately, answer the research questions posed. There are three main objectives of the review: first, it will outline contesting theories of what constitutes "public space" by revisiting the history of urban park planning, and open discussion on the increasing privatization of the public realm. Second, it will compare existing models of publicness to provide insight on the strengths and weaknesses of each model based on established frameworks defining publicness and public space in the first few chapters. This will help the paper formulate the best model to then assess the degree of publicness which will be tested and measured in the study site. Lastly, it will draw on precedent case studies to evaluate the gaps in literature and opportunities for research.

2.1 Defining Public Space

Public space is the center of urban life and in a democratic society, it should function as a place where democracy is worked out (Thompson, 2002). In theory, it is a social product of the surrounding community needs and priorities which subjects itself to be the spatial agents for ideological, cultural, and political practice (Lefebvre & Harvey 1991). Understanding who is using the space and how they are using the space is imperative to the notion of a “good city” where “every citizen is entitled to environmental livability and levels of identity, control, and opportunity” (Jacobs, 2011, p. 178).

The term “public space” can be defined using two differing conceptual frameworks (Brodin, 2007). One use is more metaphorical where public space is found in the empowering relationship between users and the space. The second use is more literal where the “public” is carried out by the physical space or its location. The discourse of both terms are meaningfully interrelated such that defining public space in the literal sense influences the metaphorical use and vice versa. For example, if the physical space is located in an exclusive neighborhood and only accessible to a certain population, then the metaphorical use of public space is subsequently influenced.

Brodin (2007) further argues that distinguishing between the two discourses is important to how power is carried out. He notes that “in metaphorical public space we find power in the relationships directly between human beings, while in literal public space, power is mediated by the relationship between human beings and their environment” (p. 48). Building on Brodin’s (2007) framework of an interrelated power structure, scholar Nicholas Bloomley (2001) argues that the best public spaces present

opportunities for discussion, deliberation, and unprogrammed, spontaneous encounters with those maintaining diverse viewpoints on the world (as discussed by Nemeth, 2008). These opportunities require planners to be transparent and democratic in the process which they assess and plan for a new public space. Therefore, a model of publicness to guide public space provision and management is required.

2.2 Parks as Public Space

Historically, public space was born out of early Greek agoras where plazas hosted civic facilities and places of assembly (Rubenstein, 1992). They acted as the nodes of the city structure where different social networks coincide and connect. Over time it evolved into a recreational center that enhanced livability and cultural activity. This transition became widespread during the height of the Industrial Revolution when negative externalities of technological advancements burdened urban living conditions with overcrowding, public health and safety concerns. Planners were called upon to impose order through revitalization plans which would enhance urban life (Fishman, 1982).

Urban visionaries sought out parks as a multi-facet space to bring order and added dimension of the public into open space. An early example includes Ebenezer Howard's 1892 Garden City plan in which he envisioned a "green belt" of farms and parks surrounding the urban center as the uniting borders of a harmonious, cooperative, and productive society (Fishman, 1982). While the Garden City never came to life, parks and other forms of public space exist today based on this notion of "the right to

space” where civic spirit and values of the community are brought together in recreational commons.

Howard had devised the Garden City from Frederick Law Olmsted (1980), who saw the benefits of park planning beyond the facade of nature. Olmsted believed that parks could function as catalytic sites for a wide array of public benefits including:

“serving as the ‘lungs’ of the city...necessary additions to the physical infrastructure of the metropolis, providing general recreation ground...tame human nature by providing wholesome alternatives to the vulgar street amusements, bars, and brothels that daily tempted poor and working-class youth” (Le Gates & Stout, 2016, p.366 - 367).

The expansive definition of Olmsted’s vision for parks echo themes of unity and equilateral benefits across communities which are still relevant to the conception of public space today. Planning for parks builds on the ideology that the public sphere functions as a “space of democracy” which scholar Margaret Crawford (1995) argues is a sphere that “all citizens have the right to inhabit and where all public discourse takes place;” therefore, this paper argues that parks exhibit the characteristics of a traditional public space in its form and function (p. 4).

2.3 Privately owned public spaces (POPS)

The 1961 New York City Zoning Resolution offered private developers a tradeoff of public space provisions in the form of plazas or arcades for extra floor area bonus (Kayden, 2016). This incentive allowed for new alternatives of public space to take form as privately owned public spaces or POPS. Initially, the zoning resolution documented four types of privately owned public spaces: the plaza, the plaza-connected open area, the arcade, and the front yard (City Planning Commission & Department of City Planning, 1961). Over time the typologies expanded into 12 types. Currently, there are a total of over 590 POPs across NYC with different typologies including plaza, arcade, covered pedestrian space, and through a block arcade (New York City Planning, 2019).

While POPS are offered as a tradeoff to extra FAR, developers are the sole decision makers in choosing where to locate the space. The geographic location of POPS are not subject to regulation or plan with the exception of a special district site; thus, it is argued that the underlying driving force behind the creation of these spaces stem from developer's profit protection (Kayden, 2000). This raises a contestation of how "public" are POPs if the public does not have authority in choosing the site of the space.

Furthermore, exclusion can be achieved through privatized management practices which POPS allow for. Restricted access on certain days of the week such as weekends or weekday evenings and increased surveillance through legal authority (i.e. security guards and cameras) limit the types of activities possible for use and function of a public space (Huang & Franck, 2018). This raises a contestation of how "public" are

POPs if the public does not have authority in choosing the site of the space. Previous studies emphasize the importance of management practice as a determinate for the inclusion or exclusion of a space. Such practice includes “enforcement and the placement and attitude of security” (Huang & Franck, 2018, p. 515).

In addition to the economic incentive, the location and physical characteristics are comparatively different from our traditional understanding of a public space through the form of a park. Most POPS reside in commercial corridors in collector streets with discrete visibility. As demonstrated in the comparison between figure 2 and 3, the difference of a POPS entrance and visibility from the streets compared to a traditional understanding of public space raises concerns over excessive control and regulations from the private management of POPS. On the other hand, many parks in NYC are situated on arterial roads.



Figure 2: Privately Owned Public Space

Source: Google Map and Images



Figure 3: Central Park Entrance

Scholars argue that “private interference substantially altered the nature of public spaces towards private interest” and this is proven to be true as the design is geared for profitable measures and regulations of the use of space is determined by a singular operator (Yoon & Srinivasan, 2014, p. 362). It lacks the fundamentals of a democratic space and is not representative of the public’s interest because POPS follows a siloe process that is streamlined through the zoning ordinance.

Among the scholars voice criticism of POPS as a threat to public space is scholar Cindi Katz, who argues that POPS is skewed for selective, disproportional management and maintenance (2006). Since “only selected ones, backed by privately sponsored disproportionately large budgets, are able to thrive, many located in lower-profile neighborhoods suffer from the resource deficit” (as cited by Yoon & Srinivasan, 2014, p. 362). The following table summarizes the comparative difference between a traditional public space (i.e parks) against privately owned public space.

Table 1: Public Space vs POPS

	Public Space	Privately Owned Public Space (POPS)
<i>Use</i>	Leisure activities, informal cultural spaces, recreational space	Consumption spaces which include restaurants, bars, cafes
<i>Accessibility</i>	Entrances are located on main roads with easy to read symbolic access for everyone	Limited hours of operation, Entrances are often enclosed in a “fortressed environment” with limited physical and symbolic access (Nemeth, 2008)
<i>Surveillance</i>	“Eyes on the street” (Jacobs, 1961) or the reliance on pedestrians and other citizens to watch out for one another	Official security guards and CCTV or other forms of security cameras
<i>Ownership and Maintenance</i>	Funded by city annual budgets	Private developments driven largely by market value of the private property.

2.4 Privatization and the Threat of Public Space

The rise of POPS has added to the criticism of increasing private involvement in the planning, design, and management of public space as it raises concerns of the preservation of publicness in an open space. Scholar Jerold Kayden (2000) attempts to identify necessary elements which make up "the public" in a privately owned public space by reviewing the thousands of legal instruments used for property owners to legally obtain the public space as an asset to their private space development. In his methodology, he used field surveys to assess how accessible the amenities and overall space was to the public.

He argues that "public space means a physical place located on private property to which the owner has granted legally binding rights of access and use to members of the public" (2000, p. 21). He believes that the public gain partial ownership to the privately owned space by obtaining the right to access it and as a tradeoff, the potential loss of light and open design is compromised. Overall, Kayden did not find that POPS violate or threaten the publicness of public space. Instead, he views it as a different form or subset of public space with economic value.

On the other hand, scholars such as Richard Sennett and Michael Sorkin (as cited in Crawford, 1995) argue that public space has lost its publicness given the shift in governance from state to private individuals. On the surface, this appears to be true as POPS are allowed to issue limited public accessibility hours and some POPS include on-site surveillance either in the form of digital sensors or hired security guards. However, sociologist Henri Lefebvre (as cited by Van Melik, Van Aalst, & Van Weeseep

2007) notes that “public spaces are not solely the product of planners and architects.... [rather] produced by and within a society.” This makes it difficult for scholars and theorists to conclusively argue that public space has lost its publicness. There needs to be a framework or a model which researchers can contest their theories and observations against while controlling for variables of public space characteristics.

2.5 Measuring public space

Traditionally, planners are able to understand how a space is used through user surveys, on site observations, and geographic information system analysis. A well designed public space has been thoroughly studied by predecessors in the planning field that ascribed elements of the built environment to attractive use of the space. Kevin Lynch (1960) talks about the image of the city as an individual’s experience with the built environment. He notes that “nothing is experienced by itself, but always in relation to its surroundings, the sequences of events leading up to it, the memory of past experiences.” His findings established how social and physiological norms are interwoven in the built environment and carried out through interaction in public life.

Most notably, William Whyte (as cited by Elsheshtawy, 2015) famously studied how people use public spaces through video and note taking documentation on the trends and behaviors people acquired through interaction with the built environment. Whyte used a 16 mm film camera to capture a time lapse of the people visiting plazas in Manhattan at different time intervals of the day. He diagrammed how people moved

through the space, how long they stayed in the space and how they used the physical environment for seating and other leisure activities (1980).

Around the same time, Jan Gehl's (1971) book, "Life Between Buildings: Using Public Space" was published and advocated for the physical dimensions of planning and urban design to be reflective of the sense of place that the public space embodied. Gehl used a similar method as Whyte where he observed different bench designs and other aspects of the built environment to study how the physical space influences behavior and interactions. He found that a successful public space can be measured through an individual's time spent in the space as the longer the time spent reflects upon the enjoyment of using the space. Together, their observations revealed the impetus of urban form on social behavior.

In a utopian city, public participation is at the forefront of an urban planning agenda. The idea that a multitude of perspectives would be represented and safeguarded through a communal space to serve the needs of our social welfare is highly desired by idealists. While planners might be far from envisioning a utopian city, the rise in information technology has enabled visionaries a new way of reading public participation and behavior in cities through geotagged data.

Interactions in the physical space are translated to observation points through the data collected from Global Positioning System (GPS) location signals embedded in wireless devices. There are two types of behavior choices that data can be collected from. The first are explicit, direct actions of shared experience including sharing pictures with the public, commentating opinions and thoughts through microblogging and other

interactions by viewers including “liking” a post or re-posting it elsewhere. Second, there are indirect actions such as connecting to a wifi network in a coffee shop or traveling to a destination and sending signals to the nearest cellular data tower. Both types of behavioral choices contribute to the ubiquitous computing which blurs the boundary between digital and physical space. The geospatial data can be beneficial for planners to understand the life embodied in public spaces and speculate what influential properties of the built environment help shape the experience of a city. Furthermore, the “public” is subsequently represented through interactions in the virtual space.

Previous studies of real-time information have focused on the spatial and temporal patterns captured through crowdsourced data. Planners have been able to trace the digital footprints through cell phone network data and global positioning system (GPS) services and understand mobility patterns and how long people are staying in one location point before moving on (Krings, Calabrese, Ratti,, & Blondel, 2009). The robust quantity of data collected in comparison to mechanical, human surveying methods can be leveraged to empower decision making because it covers a wider array of users and citizen participation in the city. Compared to traditional methods of taking a sample of the population to measure, big data collected through the medium of cellular networks are more closely aligned to real-time patterns of urban life.

Speculations about what users are doing after they travel to their destination and what accounts for varying stationary time frames at the destination is still unclear. This in large part, is a result of the lack of public data available and a robust methodology to gain insight to the use of a space. However, the scale at which researchers are able to

quantify and understand how people access and use public spaces is advantageous compared to traditional field surveys because it gives us greater scale and diversity of users.

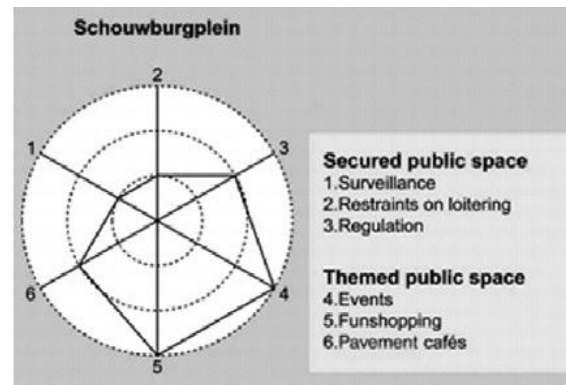
2.6 Models of publicness

This thesis relies heavily on the model of publicness which will be used to assess plazas under the NYC plaza program, so it is pertinent to critically study existing models of publicness. Four existing models will be reviewed and compared. The overall comparisons of all four models are summarized in the table below:

Table 2: Comparison of Existing Models of Publicness

Model of Publicness	Metrics	Operational Definition (the numbers are corresponding to the metric numbers)
Tri-axial (Nemeth & Schmidt, 2011)	<ol style="list-style-type: none"> 1. Ownership 2. Management 3. Use 	<ol style="list-style-type: none"> 1. Is the space owned by government body (public) or corporation (private) 2. How is the space controlled and maintained? What type of indicators are undertaken to encourage the freedom of use, access, and behavior or vice versa? 3. Is there diversity of uses and users of the space?
Cobweb (Van Melik, Van Aalst, & Van Weeseep, 2007)	<ol style="list-style-type: none"> 1. Security 2. Theme 	<ol style="list-style-type: none"> 1. Does the space minimize feelings of fear and increase safety measures? 2. How is (if it all) the space designed with intention of attracting people for leisure and entertainment functions?
Star Model of Publicness (Varna & Tiesdell, 2010)	<ol style="list-style-type: none"> 1. Ownership 2. Control 3. Physical Configuration 4. Animation 5. Civility 	<ol style="list-style-type: none"> 1. Is the space publicly owned with public function and use or is it privately owned with private function and use? 2. Is the space of free use or under high, oppressive surveillance? 3. Is the space well connected and located with major circulatory paths with obvious entrances? 4. Does the space support for a diversity of use and activities? 5. Is the space well-kempt and managed in the interest of the community with a balance of different community needs and groups?
OMAI Model (Langstraat & Van Melik, 2013)	<ol style="list-style-type: none"> 1. Ownership 2. Management 3. Accessibility 4. Inclusiveness 	<ol style="list-style-type: none"> 1. Legal Status of the place 2. How is the place cared for on a day-to-day basis and what are the extent of "control" present (i.e. CCTV and security guards) 3. What does the physical connectivity of the space look like and are the entrances obvious? 4. To what degree does the space meet the needs of different individuals and groups

1. Cobweb (Van Melik, Van Aalst, & Van Weeseep, 2007)



Source: Van Melik, R., Van, I.A., & Weeseep, J.V. (2007) Fear and Fantasy in the Public Domain: Development of Secured and Themed Urban Space, *Journal of Urban Design*, 12:1, 25-42, DOI: [10.1080/13574800601071170](https://doi.org/10.1080/13574800601071170)

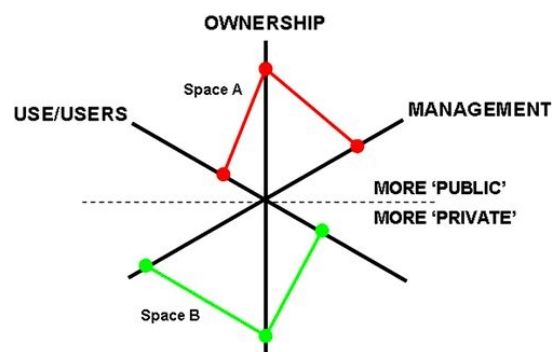
By re-examining social precedents in public space planning, scholars Van Melik, Van Aalst, and Van Weeseep have narrowed down the direction of major historical redesign projects into two main trends: secured space and themed space (2007). Secured space is manifested in the feeling of fear and desire for safety and themed space takes after public space designed with the intention of attracting people for leisure and entertainment functions (2007). In their research, the authors used secured space interchangeably with the term “fear” and themed space interchangeably with the term “fantasy.” The two directions are not dichotomies of one another, but rather “of the same tendency towards greater control and predictability of activities in public space.”

The Cobweb model measures if “fear” and “fantasy” are overlapping dimensions or distinct characters that influence public space developments. A total of six quantifiable and observable subdimensions - three for each dimension - are identified as criteria for measurements. These six subdimensions also serve as the variable in their research and are measured through three levels of intensity: low, medium, and

high (2007). The authors based their findings on the degree which these dimensions occur and overlap in public spaces through studies of observation, literature research, and analysis of policy documents.

The Cobweb model is limiting to the purpose of this study because it leaves out metrics to calibrate the extent of democratic ownership in the public space. Looking at regulation alone is not suitable because the selected site of where the public space is located prior to its formation is critical to the distinguishing character between a privatized public space and a truly public space. Therefore, metrics from the cobweb model will not be considered in this study.

2. Tri-axial (Nemeth & Schmidt, 2011)



Source: Németh, J., & Schmidt, S. (2011). The Privatization of Public Space: Modeling and Measuring Publicness. *Environment and Planning B: Planning and Design*, 38(1), 5–23. <https://doi.org/10.1068/b36057>

The Tri-axial model is one of the more simple conceptual models of publicness amongst all four models in this chapter. The authors, Jeremy Nemeth and Stephen Schmidt (2011) recognize that “no single space should be expected to meet the needs of all users at all times”(p. 9). Thus, the tri-axial model is rooted in three core criterias that was previously outlined by scholar Margaret Kohn (2004): ownership accessibility,

and intersubjectivity, which is defined as the kind of encounters and interactions that space facilitates.

Adding to Kohn's (2004) criteria, the authors allow for a bracketing of one or more axes, so axes are interrelated. "Each component represents an axis that intersects and interacts with the other two components" (Nemeth & Schmidt, 2011, p. 10). It is measured in binary values so ownership is defined as either public/government or private/corporate, management is defined as either inclusive/open or exclusive/closed, and use/users ranges from diverse/collective or homogenous individuals. In the initial test of this model, the authors determined how to measure ownership and management using an index that is divided into four major dimensions:

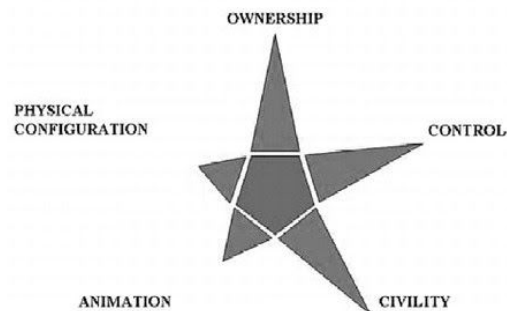
- 1) Laws and rules governing the space
- 2) Surveillance and policing present in the space
- 3) Design and image-building techniques which literally and symbolically dictate appropriate behavior
- 4) Access restrictions and territorial separation to control space

By selecting public spaces that exist on both ends of the axis - publicly owned and operated on one end and privately owned and operated on the other end - where able to categorize the index group into binary values of hard, active control and soft, passive controls using index grouping techniques from scholars Anastasia Loukaitou-Sideris and Tridib Banerjee (1998). For their analysis, the authors compared the total index scores for publicly owned spaces against privately owned spaces to "determine whether the latter tend to discourage use and control behavior more than the

former” (Nemeth & Schmidt, 2004, p. 15). Then, the authors examined the ownership of each space to see if there are differences of “the extent to which they either encourage or discourage use.” Finally, using the binary dimensions of: law/rules, surveillance/policing, design/image, and access/territoriality, the authors examined how publicly and privately owned spaces have a significant difference between the two types of space in the various dimensions mentioned.

A weakness of this model is that it generalizes the dimensions into limited binary values. Scholars Florian Langstraat and Rianne Van Melik (2013) pointed out that “a potential drawback of this particular representation is that it is not exactly clear what the middle of the diagram represents, or where on the axes a particular node should be located” (p. 434).

3. Five Star Model (Varna & Tiesdell, 2010)



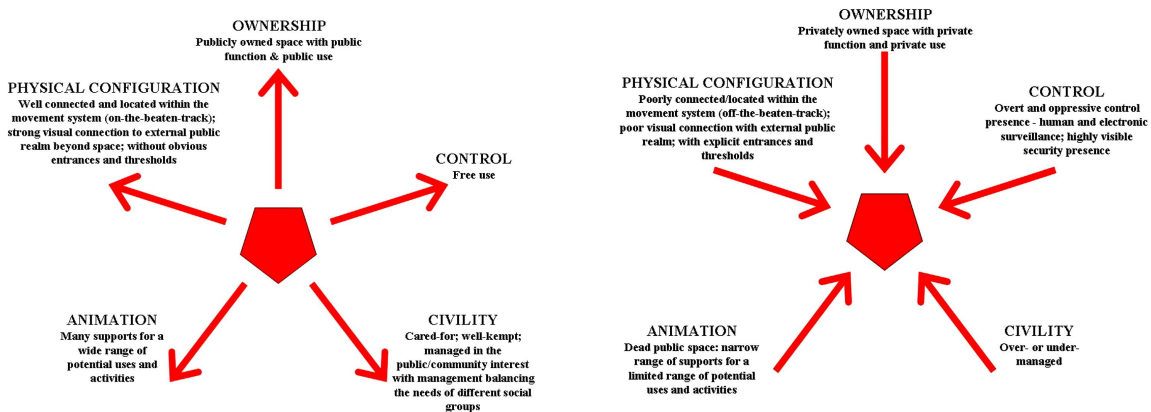
Source: Varna, G., & Tiesdell, S. (2010). Assessing the Publicness of Public Space: The Star Model of Publicness. *Journal of Urban Design*, 15(4), 575–598. <https://doi.org/10.1080/13574809.2010.502350>

The Five Star Model draws from two levels of understanding publicness. The first is a conceptual level which entails “different individual understandings of publicness and the academic disciplines documenting them” (2010, p. 575). According to the authors, George Varna and Steve Tiesdell, different disciplines come to understand public space

through different interests and concerns; therefore, each dimension is measured in isolation from one another but pieced together into a star shape with five legs to demonstrate the overall “publicness” of the space.

This conception is similar to Brodin’s argument (2007) as outlined in Chapter 2.1 of the paper where the metaphorical and physical characteristics of public space should be studied alongside one another because they are interrelated. When a physical feature is altered, the metaphorical is also subsequently altered and vice versa. The star model visualizes this definition very well and will be actively included in the methodology of this paper.

The pentagon in the center of the star represents equilibrium of all five features. The longer each leg of the star is, the more public function and use is represented. Another way of visualizing the model is as follows:

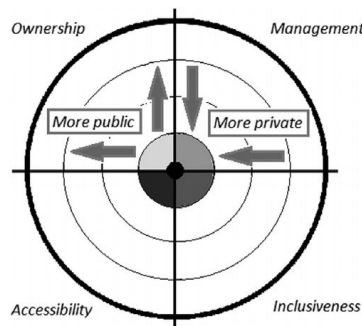


Source: Varna, G., & Tiesdell, S. (2010). Assessing the Publicness of Public Space: The Star Model of Publicness. *Journal of Urban Design*, 15(4), 575–598. <https://doi.org/10.1080/13574809.2010.502350>

There are many overlapping metrics of the star model that have been previously covered. Animation is defined in the previous models as use and activities of the space

and civility is defined in previous models as management of the space. Therefore, both of these metrics will be considered in the hybrid model for Chapter 3.

4. OMAI Model (Langstraat & Van Melik, 2013)



Source: Ekdi, F. P., & Çiraci, H. (2015). Really public? evaluating the publicness of public spaces in istanbul by means of fuzzy logic modelling. *Journal of Urban Design*, 20(5), 658.

The OMAI Model uses divisions of four rings into equal slices as representation of each metric - ownership, management, accessibility, and inclusiveness. It uses a four point scale - 1 being fully private to 4 being fully public - to measure publicness; therefore, the bigger each slice of dimension is, the more “public”.

The authors of this model revisited their earlier work with the Cobweb Model (2007) to analyze the underlying principles of “fear” and “fantasy” they had previously established; however, this time, it emphasized the publicness of public space. Furthermore, the OMAI model was built under the argument that “the main concern in the ‘end of public space’ debate is not private ownership or management per se, but the consequences thereof.” The multifaceted interpretation of public space is then divided into the upper half of the circle and lower half of the circle. The focus on publicness makes the OMAI model suitable for the purpose of this paper’s research question.

However, the study presented in this paper will trace back to the planning process of plazas to determine ownership and not study it in hindsight through the consequences of the ownership or management of a space.

Chapter 2A

Precedent Studies

2A.1 Gehl Institute - “Public Life & Urban Justice in NYC’s Plazas”

The Gehl Institute Studio and J. Max Bond Center (JMBC) worked in collaboration to measure and evaluate how the NYC Plaza Program performed in its contribution to the quality of public life and greater social justice issues within the neighborhoods it is located (2015). Using a combined methodology between the two institutes, the research question investigated in the study is as follows “How can we mesh [the two indicators of public space and public life along with eleven indicators of urban justice from JMBC’s Just City methodology] together to study connections between public life, public space, and urban [social and spatial] justice? How can we understand who benefits from new public spaces” (p. 4). The eleven indicators of JMBC’s Just City methodology came from an extensive review of existing literature on impact and change in cities including PlaNYC Sustainability Indicators (2007).

By choosing two existing plazas in each borough of New York, the study underwent different types of observation methods including participant observations through interviews, naturalistic observations through on site surveying, and desktop research that included geospatial analysis. The findings of the study were broad but it adequately summarized the multiple layers of data collected in a wholesome picture of the neighborhood impacts of plazas in geospatial and social terms.

2A.2 SWA - Field Guide to Life in Urban Plaza

Landscape architecture and urban design firm, SWA turned to William Whyte's (1980) urban plaza observations in *The Social Life of Small Urban Spaces* as an inspiration to put together a field guide for designing for urban life in urban plazas. Using a combination of Whyte's original data from traditional site surveying and interviewing with the latest innovative technology in machine learning - image classification - the team observed a total of 10 different plazas throughout the borough of Manhattan to "understand how people respond to different urban conditions" (p. 13). The study acknowledges the rising privatization of public space and how it has transformed urban life in public spaces throughout New York; however, the focus was on the change in how people act and interact in public spaces as a result of this transformation.

The findings were summarized with the top 25 observed behaviors synthesized into guidelines for designers to consider when designing for urban life in small urban spaces, or more formally, a plaza. They categorized the top 25 most common behaviors into larger topics which were based on the impact of privatization on the design of public spaces. These includes the following categories:

- Ubiquitous Computing
- Gender Relations
- Homelessness and Deinstitutionalization
- Surface Temperature

Chapter 3

Methodology

Previous studies have been limiting in that they studied definitions of publicness and public space in piecemeal fashion. The Gehl Institute comprehensively detailed the physical design and its relationship to the metaphorical character of public space. However, the focus of the study was dispersed across NYC which became a weakness because it did not go into depth about the site selection process of the plaza and its influence on the extent of publicness which the plaza offers.

Additionally, SWA's field guide for plazas focused on the granular design and physical programming of the space. Since it did not focus on the publicness of the space, it summarized larger metrics such as ownership and governance or management of the public space in broad terms to state facts but not critically engage or discuss. It also controlled for the type of space created, land value, and privatization mechanisms altering public spaces in Manhattan in their study so it did not account for these variables. This limitation is a weakness to assessing the publicness of a plaza.

This thesis' literature review discusses works of Whyte (1980) and Kayden (2000), both of whom utilized visual observations to record use of a public space. However, as Nemeth (2009) points out, "neither focused specifically on recording management approaches in these spaces" (p. 2468). This is a critical point because public space should embody management strategies that are democratic and transparent for its users. It should embody public awareness since the public are essentially the "managers" of the space.

Some of the models mentioned in chapter 2.7 are concerned with specific aspects of the public space after it is built. Other models such as the Star Model (Varna & Tiesdell, 2010) and OMAI Model (Langstraat & Van Melik, 2013) had more holistic definitions that were aligned with previously established definitions. Using overlapping metrics from these two models, this paper will build a hybrid model to analyze the extent of publicness which plazas offer. This includes critical study from the planning process to the development of the plaza and its current operation.

3.1 Research Design

Based on the overlapping metrics of the four existing models of publicness reviewed in chapter 2.5, the methodology formed a new hybrid model which included the following metrics: ownership, management, accessibility, and use. These served as variables of the study and were selected through previous discussions in chapter 2. Through available data sources from NYC OpenData as well as a literature review of the NYC Plaza Program application document, the methodology has two types of analysis: First, it explores existing policy and literature review to measure the metric of ownership. Second, it conducts a geospatial analysis to measure management, accessibility, and use/activity at two scalar levels:

1. Macro-Level: Neighborhood Tabulation Area across Manhattan, New York
2. Micro-Level: Midtown South Neighborhood (NTA Code: MN-17)

Due to available existing data, each metric that will be analyzed using geographic information systems software, Esri ArcMap version 10.6.1., will vary at the scale which

they are measured for the intent of the research question. Additional data layers will be utilized to effectively compose the best assessment of each metric. The new hybrid model to measure publicness is displayed in Table 4.

For reference, figure 3 shows where Midtown South Neighborhood is located.

Figure 3: Midtown South Neighborhood (NTA Code: MN-17)



Source: New York City Department of Information Technology & Telecommunications. *Open Space* [shapefile]. 17 June 2014, updated 27 August 2016.

<<https://data.cityofnewyork.us/Recreation/Open-Space-Parks-/g84h-jbjm>>

New York City Department of City Planning. "New York City Borough Boundaries" [shapefile]. *Bytes of the Big Apple, Issue 16D*. 27 October 2016.

<<http://www1.nyc.gov/site/planning/data-maps/open-data/districts-download-metadata.page>>

Table 4: Hybrid Model of Publicness

Metric	Operational Definition	Data Source	Scale of Analysis
Ownership	Is the plaza program application process a democratic, public decision? To what extent is the public involved in the application process?	NYC DOT Plaza Program Application Guidelines 2019	Macro-Level
Management	Using street trees as indicator for neighborhood upkeep, is there a high count of street trees in the area where plazas are located?	Street Tree Census (2015)	Macro-Level
Accessibility	Is the plaza accessible for a majority of the neighborhood?	Walkability Factor of ¼ mile radius (Centroid + Neighborhood Density)	Micro-Level
Use	Are plazas located in the neighborhoods with balance of commercial, mixed-use, residential buildings?	Percentage of Residential, Commercial, and Mixed-Use Buildings compared to proportion of existing public plaza and open, green space	Micro-Level

1. Ownership:

For ownership, the paper will investigate the application process which each plaza proposal is subject to. In particular, the metric will analyze if decisions are subject to some form of public accountability (Varna & Tiesdell, 2010). A “more public” space will be representative of a democratic process where collective opinion is taken into account during the development process and an opportunity for users of the space to voice future opinions is allowed (Varna & Tiesdell, 2010). Therefore, the process of NYC Plaza Program application selection will be closely studied to trace how involved the public is. From there, the paper will analyze if ownership is truly “public” by looking at the other three metrics in parallel.

2. Management:

The management metric is concerned with how well-kept and maintained the space is. The paper used street tree density as a neighborhood indicator for upkeep and management of the neighborhood (Chuang, Boone, Locke, Morgan Grove, Whitmer, Buckley, & Zhang, 2017). Long-standing social stratification theories have established that green space and vegetation cover tend to reside in wealthier neighborhoods who can afford public investment in green infrastructure (Grove, Locke, & O'Neil-Dunne, 2014). Truly public spaces should be managed in the collective interest of the neighborhood and would promote well-being.

The hypothesis of this metric is that a neighborhood which was chosen for a new pedestrian plaza construction under the plaza program was deemed "in need for public space investment" should have a low count of street trees located in the neighborhood of the plaza. The street trees will be quantified by count and then visualized in 3 quantile breaks.

3. Accessibility:

Accessibility is defined as the plaza's physical reach to foster diverse activities and population groups (Nemeth 2009). This includes an array of land use to enable a diversity of activities and facilities. To assess the extent to which a plaza is accessible, the paper will use pedestrian street data from NYC LION Single Line Street Base Map and evaluate how diverse the service area covers tax lot use. A centroid was used to generate a median distance within the polygon of each pedestrian plaza and using the service area tool from Arcmaps, a network buffer was drawn to assess the walkability

factor using a ¼ mile (1320 feet) radius. The hypothesis of this metric is that if the plaza covers a diversity of lot use types, it would be considered accessible.

The PLUTO Tax Lot Map contains a column entitled “Lot Use” that ascribes the following values to its land use type:

Figure 4: MapPLUTO 2020 Tax Lot - “ Lot Use”

VALUE	DESCRIPTION
01	One & Two Family Buildings
02	Multi-Family Walk-Up Buildings
03	Multi-Family Elevator Buildings
04	Mixed Residential & Commercial Buildings
05	Commercial & Office Buildings
06	Industrial & Manufacturing
07	Transportation & Utility
08	Public Facilities & Institutions
09	Open Space & Outdoor Recreation
10	Parking Facilities
11	Vacant Land

Source: New York City Department of City Planning. 2016. *MapPLUTO Release 16v2* [shapefile]. Retrieved from <http://www1.nyc.gov/site/planning/data-maps/open-data/dwn-pluto-mappluto.page>.

For the intent of this research, the following values will be aggregated: 1, 2, 3 to fall under the category of “Residential” activity and value 4 will be “Mixed-Use” activity. Additionally, value 5 and 6 will be aggregated as “Commercial” activity and value 8 will be categorized as “Public Facilities.” The colors chosen in the map are going to be associated with the American Planning Association (APA) Land Based Classification Standards (LBCS) colors. Therefore, yellow will represent all residential lots, red will represent all commercial lots, and blue will represent all public facilities lots.

4. Use:

To determine the usefulness of a pedestrian plaza, the same lot use type aggregated and selected for the accessibility metric was reused in this metric. The hypothesis of use is that if a pedestrian plaza is situated with “good use,” it should be located where there is a high diversity of lot use within the NTA.

3.2 Site

While there are distributions of open, green space, public plazas, POPS, and pedestrian plazas built under the NYC Plaza Program across all five boroughs of New York, this study limited its research to the borough of Manhattan. For the analysis on a macro-level scale, the paper used Neighborhood Tabulation Areas to aggregate and discuss the findings. For analysis tested on a micro-level scale, the paper used the Midtown South Neighborhood (NTA Code: MN-17) which comprises a total of 17 census tracts. The neighborhood profile is characterized with a high level of median household income of \$130,487. This is more than double the amount of the average New York City median household income - \$60,762 (NYC Planning Department, 2020). It is predominantly a White/Nonhispanic neighborhood with a median age 25 to 29 years old (2020). The majority of household types are categorized as “nonfamily households” (2020).

3.3 Data

For the GIS analysis, there are four data sets that are used. First, street tree data from NYC OpenData website was included to measure the amount of street trees in a neighborhood area. Second, the MapPLUTO 20V1 published by the NYC Department of Planning was used for tax lot data. This provides location of publicly owned public spaces as well the types of zoning and land use data needed for calculating the percentage of residential buildings in a neighborhood. For the purpose of this paper, the following residential land use categories were chosen: 1,2,3,4. Since land use category 4 is technically mixed-use - composed of both residential and commercial uses - this paper will consider it residential so that its residents are not overlooked. Chapter 5 will discuss some of the limitations that overlapping land use categories can pose. Additionally, census data on residential income and population density was used from the American Fact Finder website.

Table 5 summarizes the type of data needed for each metric.

Table 5: Data Type

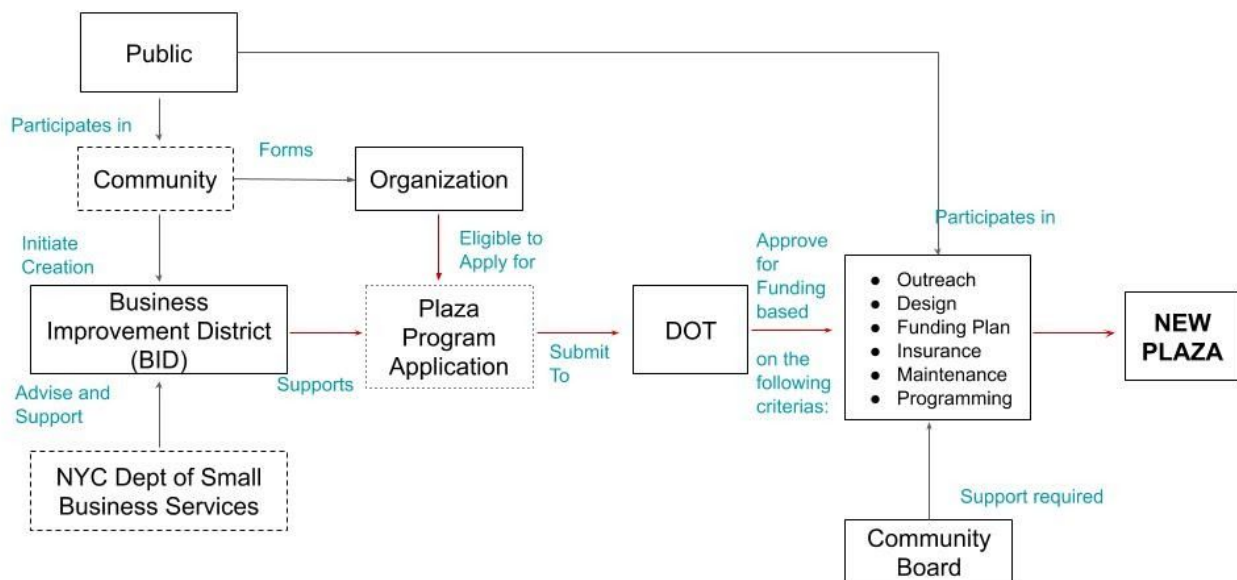
Metric	Type of Analysis	Data Source/Layers
Ownership	Literature Review	NYC DOT Plaza Program Application Guidelines 2019
Management	Geospatial	Street Tree Census (2015) Neighborhood Tabulation Area
Accessibility	Geospatial	Pedestrian Plaza Polygon Shapefile LION Map - Pedestrian Streets NYC Pluto Tax Lot Data (Land Use Category: 1,2,3,4 for Residential)
Use	Geospatial	Pedestrian Plaza Polygon Shapefile NYC Pluto Tax Lot Data (Land Use Category: 1,2,3,4 for Residential)

Chapter 4 Findings

Ownership:

The DOT (2011) defines a plaza built under the initiative as “an area designated by the department of transportation for use as a plaza located within the bed of a roadway, which may contain benches, tables or other facilities for pedestrian use.”

Figure 5: Plaza Application Approval Process



In brief, the DOT describes how a new plaza is determined through the following steps:

1. Organizations can apply to the program with a new plaza site proposed.
2. The DOT reviews the application and then determines if it is approved.
3. Approval is based on the spatial relationship of the surrounding community and its lack of open space (ratio fewer than 1.5 acres of public space per 1,000 residents).

4. Once approved, the site receives design guidelines and construction fundings from the DOT.

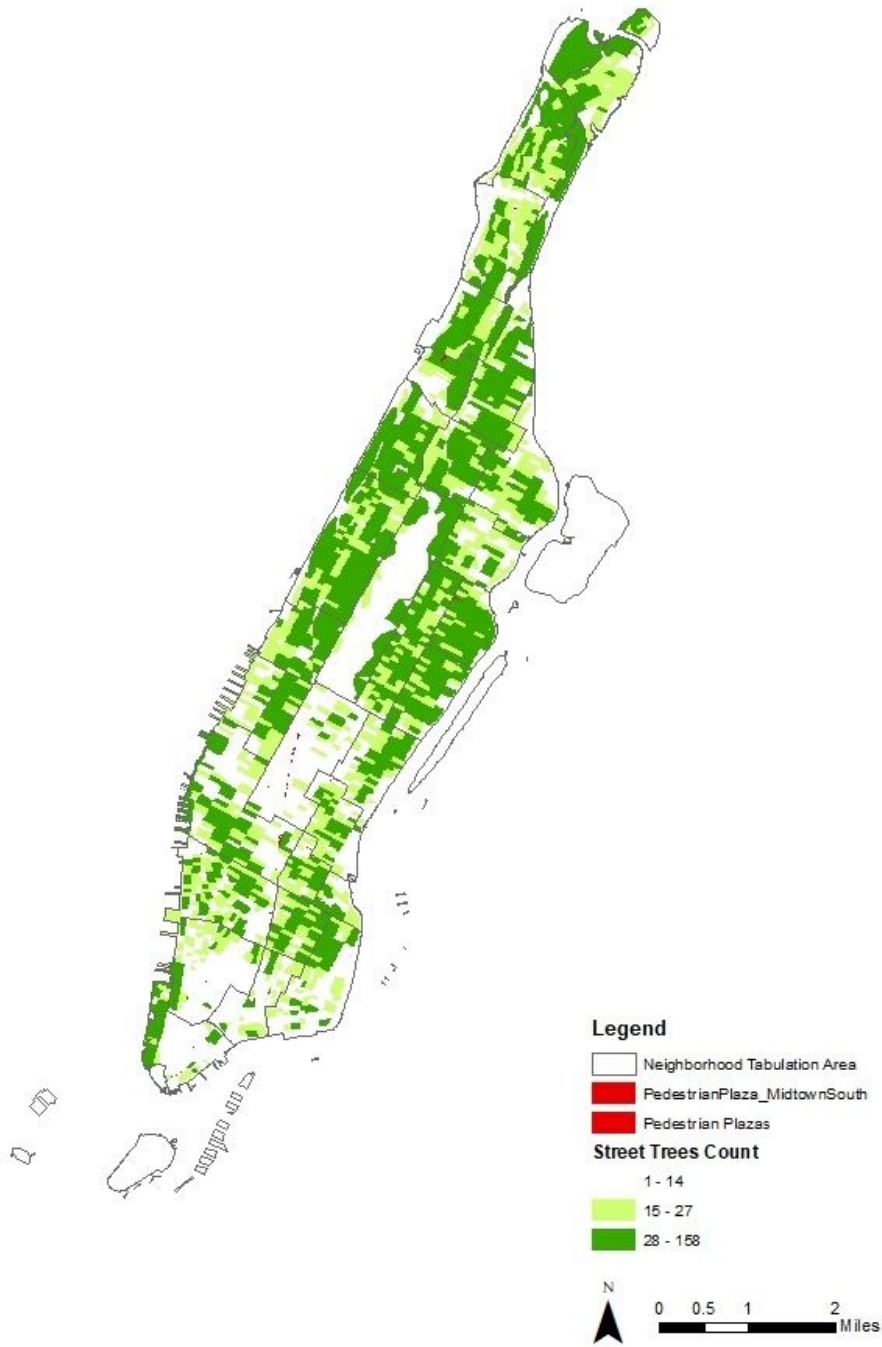
Business Improvement Districts (BID) are created at the community level with participation from the public involved. They are a supporting role in the plaza program because most applicants consist of BIDs; therefore, the application process as modeled in this paper will start with the formation of a BID. From there, only a local organization that is operating within the geographical relevance to the site of the proposed plaza is eligible to submit an application to the DOT.

Through a list of criterias for approval, the DOT will proceed to review for funding so monetary power rests with the DOT for final approval. However, within the list of criterias is the factor of outreach to the surrounding community. This gives way for the public to be active members of the committee for approval since they are able to leverage their opinion into the final approval decision. Furthermore, all plazas must adhere to design guidelines and present a well documented funding plan, maintenance guidance, and potential programming activities that the space will host. Finally the approval process requires support from the local community board which the plaza is set to be located within.

Management:

Large clusters of street trees are concentrated in the upper west and east side of Manhattan. This finding is contrary to the economic profiles of traditional social stratification theories and street trees as neighborhood indicators of economic affluence because wealthier neighborhoods such as Midtown and the Downtown have sparse clusters with small street tree count. However, the map does indicate a positive correlation of high street trees clustered in neighborhoods adjacent to Central Park. Many of the wealthiest real estate reside along the perimeters of Central Park since the views of the park are an asset to real estate market value, so we can use this as a proxy to evaluate the economic affluence of these neighborhoods. This finding resonates with the hypothesis that well kept neighborhoods benefit from greater environmental quality than counterpart neighborhoods with less economic advantage.

Figure 6: Street Trees Count



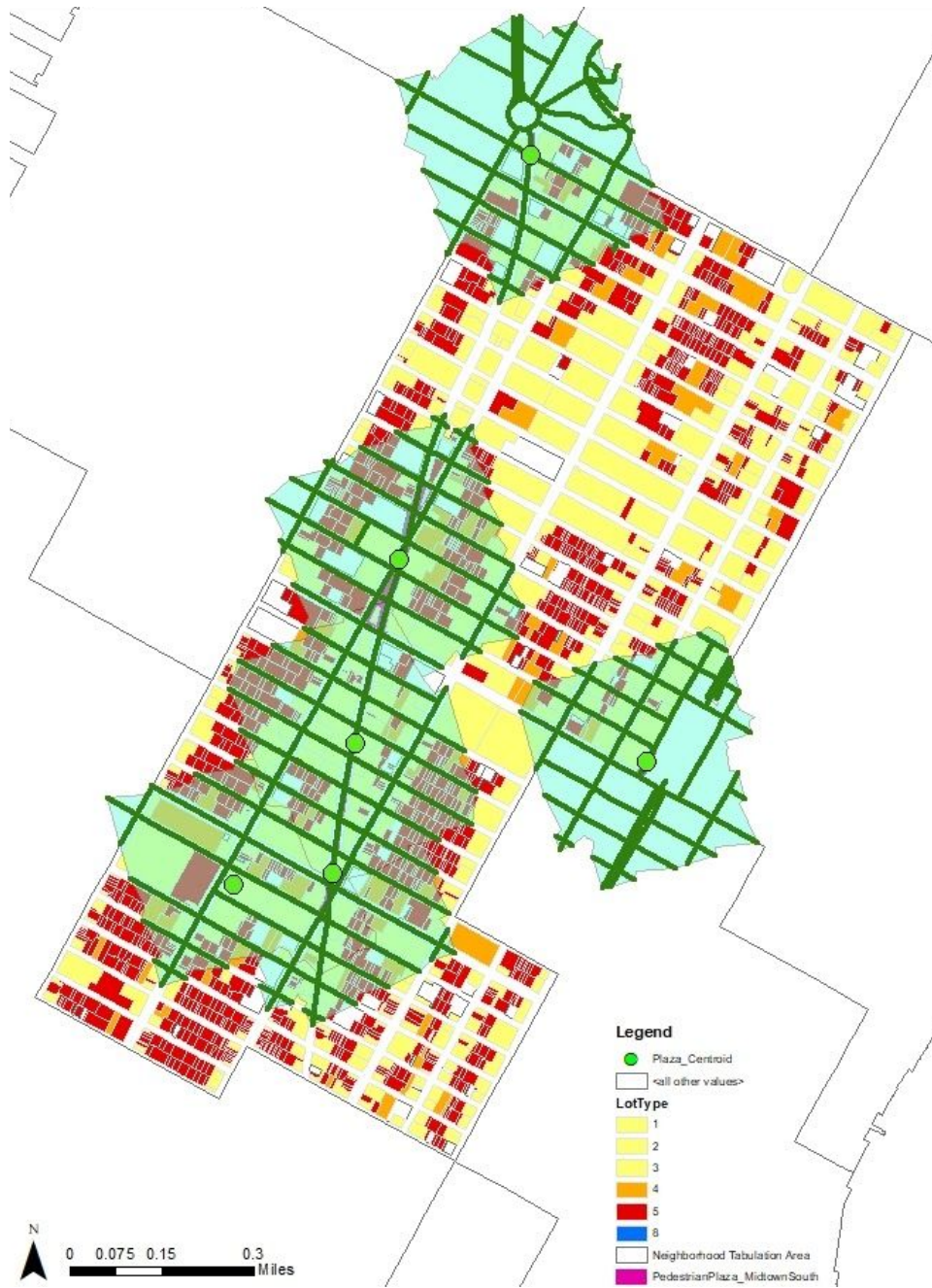
Source: New York City Department of Parks & Recreation. *2015 Street Tree Census* [shapefile]. 3 June 2016, updated 13 September 2018.

<https://data.cityofnewyork.us/Environment/2015-Street-Tree-Census-Tree-Data/pi5s-9p35>

Accessibility:

As mentioned in the research design chapter (3.1) of the paper, the colors chosen for “Lot Type” are aligned with the APA LBCS color: yellow will represent all residential lots, red will represent all commercial lots, and blue will represent all public facilities lots. Figure 7 demonstrates that the plaza service area covers a majority of the red lot use types. Overall, the coverage of the service area generated takes up a majority of the overall neighborhood tabulation area which means that the plaza is accessible to a majority of the neighborhood.

Figure 7: Plaza Service Area



Source: New York City Department of Parks & Recreation. *2015 Street Tree Census* [shapefile]. 3 June 2016, updated 13 September 2018.
<<https://data.cityofnewyork.us/Environment/2015-Street-Tree-Census-Tree-Data/pi5s-9p35>>

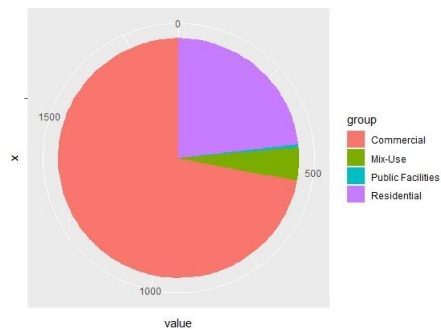
Use:

Figure 8 also used the APA LBCS colors as a standard for the map key. Given the quantification of Figure 9, the lot distribution in the micro-site of analysis is majority commercial and covers nearly 75% of the entire lot use type. Additionally, less than 25% of the lot type is residential which is significant to the metric of use in our discussion.

Figure 8: Land Use



Figure 9: Lot Type Distribution in Midtown South Neighborhood (MN-17)



Source: New York City Department of Parks & Recreation. 2015 Street Tree Census [shapefile]. 3 June 2016, updated 13 September 2018.

<<https://data.cityofnewyork.us/Environment/2015-Street-Tree-Census-Tree-Data/pi5s-9p35>>

Chapter 5 Discussion

5.1 Plaza Program Applications Preserve the Publicness Inherent to a Public

Space:

The NYC DOT boasts that the NYC Plaza Program is an “innovative, community-based program that creates new neighborhood plazas throughout New York City” (2019). In order to interrogate the DOT’s claims of a “community-based” program, the application process for a new plaza outlined in Figure 3 traces back to the foundations which brings an application together prior to an organization’s submission. Business Improvement Districts (BID) are representative of the public because they rely upon public demand and the need for resources to apply with the NYC Small Business Services for an official BID title (NYC Department of Small Business Services). Since the community initiates the creation of a BID, the application for a plaza starts at the local level and is thus inclusive of the public. Furthermore, the application restricts eligibility to only allow for local organizations; therefore, its attempts to remain cognizant of the context resonates with the paper’s established definition of a truly public, public space.

While the DOT has ownership over the application, the final step for approval of funding and constructions requires public outreach from the applicant. This process tying together the public with the space being created echoes an interpretivist approach which reasons how people “think” a public place should be carried out, regardless of “whether public is understood in terms of rights, physical setting, ownership, etc. (as

cited by Varna & Tesdell, 2010). The self-reinforcement of the application process resembles a checks and balance system. It successfully aligns with established interpretations of publicness in a public space where civic spirit is fostered. Also, the findings disprove the notion of a “pseudo-public spaces” which are defined as “spaces that serve a public function, but are characterized by various forms of private involvement, be it in ownership or management” in the ownership metric of Plaza Program (Banerjee 2001).

However, it should be noted that the review of the application process alone is not enough to interpret the extent of publicness which the NYC Plaza program embodies without a threshold of “more public” and “less public” to compare the plaza against. This point demonstrates why models of publicness are useful and necessary as it can clarify the ambiguity of the interpretivists approach.

5.2 Improve the Public Guide for Plaza Application Process to Include

Stakeholders :

The paper presents Figure 5 as means to critically challenge the extent of publicness in the application process for approval. Critics have often pointed to the process of approval as fault for leaving behind the public perspective and their rightful ownership towards the space. The diagram is traced through the multicriteria approval process for a new application plaza and takes into account stakeholders and the different agents of power at varying stages of the process. It is more succinct than the four step brief that is currently hosted on the DOT website for public view where the

simplicity in description is prone to weakness of assumptions. Misunderstandings and contestation may arise if the DOT does not seek to revise what is currently displayed for public sight. It is highly recommended that the DOT prioritizes transparency and thorough details to prevent neighborhood contestation.

5.3 Street Trees as Neighborhood Indicators are Disadvantageous in the Context of NYC:

Looking at figure 6, the lower half of Manhattan is saturated with clusters of low street trees. From these findings alone, it appears that pedestrian plazas are seemingly situated in neighborhoods which demonstrate a need for increased management of the space. However, at closer look, this statement is a spurious correlation as the methodology fails to situate qualitative characteristics that define a neighborhood. For example, the micro-site neighborhood of Midtown South has twice the average median household income than New York City as a whole; therefore, it is considered a relatively wealthy neighborhood (NYC Planning, 2014 to 2018).

There are a multitude of external factors that might explain this spurious correlation. First, the high density nature of lower Manhattan makes it difficult to prioritize ecological and environmental concerns. Sidewalks and streets might serve as a better future indicator for neighborhood maintenance and management than clusters of street trees. Second, using street trees as an indicator can be an outdated approach that is popularized by traditional notions of publicly accessible space “as means to reconnect with the natural environment insofar as they provide places for recreation and

respite from an otherwise demanding urban environment” (Project for Public Spaces, as cited by Nemeth and Schmidt, 2011).

Pedestrian plazas should be treated as a separate form of public space because it lends itself to a different approval process than a POPS would. Unlike a traditional park, it is not designated to enhance green, open space. Instead, it seeks to convert streetscape into pedestrian friendly areas. This is demonstrated through the design guidelines of the plaza which does not require green space. Instead, street furniture and community based cultural activities are promoted; therefore, the plazas foster a different spirit of community than the traditional park which is seen through the Olmsted vision of an ‘environmental oasis’ away from urban centers (NYC Department of Transportation, 2007).

While the history of urban park planning is integral to the evolution of public space, definitions of publicly accessible space have expanded to encourage interaction in other spatial forms and should not be confined to the parallels of nature and parks. By quantifying street trees as a neighborhood indicator using social stratification theory limits the opportunity for the need of increased attention and management of the community. Instead, qualitative factors and other social characteristics need to be added to the picture for substantial analysis.

5.4 Relationship of Lot Type and Plaza Use Provide Narrow Definitions of

Publicness:

It was previously established in the literature review that public space should embody and foster a diversity of activities. The visibility of entrances and neighborhood context of which it is situated is important to distinguish a POPS from a public space. Figure 8 of our findings assess the pedestrian plaza in Midtown South Neighborhood as well situated because its linear geometry spans across the major road networks and covers a majority of the commercial (red) lots. The service area captures a variety of storefronts and commercial activity which can enhance the diversity of encounters, social points, and other community building activities. It is also well situated for access across the residential lots of the neighborhoods. The findings also reveal a management practice known as the natural surveillance techniques where “the notion that creating safe spaces involves a critical mass of law-abiding, desirable users who can identify unlawful activities themselves” (Jacobs, 1961). These characteristics all make for the plaza to be as public as a park; however, it should not be compared in a 1:1 ratio with the traditional notion of public space or urban parks.

Going back to the paper’s previously established definitions of public space, the findings demonstrate that models of publicness should be contextual. Nemeth and Schmidt (2011) conceptual model of publicly accessible space which includes a flexibility of use that is not necessarily “expected to meet the needs of all users at all times.” While it is well established that public space begins at the community level with

the “public” being agents of the space, it is evident that public space assessment tends to be subjective to the users of the space.

The methodology to analyze use and users that this paper proposed is not entirely sufficient for measuring publicness because it limits the dimension of perception and user behavior to be captured through quantitative analysis. Indeed, models have the advantage to scale varying definitions of publicness into the context which it is being discussed. However, a qualitative assessment with on the ground observations to describe how people respond to the space and use would allow for a more holistic interpretation of publicness that resonates with the paper’s earlier approval of public space theory in chapter 2.

5.5 Limitations:

The study had initially intended to compare 2 parks, 2 POPS and 2 plazas against the hybrid model using cellular data from Cuebiq, a company that is collecting location data from mobile devices using a Software Development Kit (SDK) to tap into Wi-Fi and GPS networks. Their database affords researchers insight on how users move through a space, where users dwell within the space, and where users are traveling from. The initial hybrid model intended for this research is as follows:

Table 3: Initial Hybrid Model

Metrics for Surveying	Data Source	Operational Definition
Ownership	Policy and document review	What is the legal status of the place?
Use of Space and Promotion of Activities	Cuebiq Data	How long are people staying in space?
Diversity in Users	Cuebiq Data	Where are users of the space coming from?
Accessibility and Connectivity of the space.	On Site Survey + Geospatial Analysis	Is the space easily accessible from major roadways and are entrances designed with obvious visibility?

However, due to the COVID-19 outbreak, there were limitations on the delivery of data by Cuebiq and the possibility for an on site survey. The research for this thesis had to shift into remote data collection and novel approaches to measure the publicness of the proposed three different forms of public space.

Another limitation to our findings was the range and availability of open source data that NYC government and other agencies offer online. The timely overlap of the paper's research with the COVID-19 pandemic forced this paper to limit its scope of research design and compromise on the ground field research to use available shapefiles on NYC Department of Information Technology and open source mapping platforms such as Google Maps.

All the datasets used in the methodology were from different time periods so it was a disadvantage for the paper to make cross comparisons when it was unable to control for the time period of analysis. Certain policies that might have passed in later years might have accounted for some of the findings discussed, but because of time

limitation, opportunities for greater discussion in context with the timeline of city legislations were limited.

There were also challenges in the methodology to draw qualitative findings from quantitative methods. For example, the geospatial analysis using service areas had to aggregate lot types as a proxy for use. This resulted in missed opportunity to quantify data for visitation patterns because lot types characterize the physical land that is zoned for use, but it does not lend insight to the patterns of use by individuals and more specificity into what types of commercial use is taking place in walking distance to the nearest plaza.

It is recommended that open source datasets are continuously updated by city agencies because the time frame of available data has a great impact on future policy recommendations and discussions. Many data collections can be easily streamlined through availability of information technology systems today such as cellular networks. These datasets are already being used by private corporations to leverage market behavior and trends. Similarly, there is room for planning practice and city governments to harness the power of big data into understanding patterns of movement and behaviors around the city. This could allow for greater qualitative data using quantitative datasets without the costly effort of hiring surveyors and field observers because more facets of the public sphere is captured with big data and information technology as integrated features such as GPS, cameras, and satellite data rest in these systems.

Chapter 6 Conclusion

“Assigning a label of public or private is not as simple as checking whether a space meets these three criteria: ownership, accessibility, and intersubjectivity. Instead, publicness must be treated as a multifaceted concept that acknowledges its own multiple and sometimes contradictory definitions.”

(Kohn, as cited in Nemeth & Schmidt, 2011, page 11)

A hybrid model built from existing models does not suffice for assessing publicness of the NYC Plaza program because the definition of public space is constantly evolving. On one end, the plaza program seeks to mitigate the imbalance of public space supply and demand but similar to privately owned public space, it seeks to reclaim existing open space which displaces ownership of the public to the private. On the other end, the process of management is more transparent and community-based. The research found it can be difficult to distinguish a public space from a private space using previous models of publicness given the evolution of perspectives on how public space is defined.

Recalling from earlier discussions presented in the literature review, many scholars have shifted their questions over the functions of a public space towards the narrative of loss or as Richard Sennett (1977) quotes “the fall of public man.” These sentiments are discerned from policy and models of publicness with outdated verbology and narrowed visions of what a public space constitutes. Using a hybrid of existing models to measure publicness, the NYC Plaza Program appears to suffer from this narrative of “loss.” However, through the findings and discussion of this paper, it is concluded that the four models studied pose outdated metrics which make it difficult to

to distinguish high performance public space from the traditional dichotomy of public versus private space. Instead, the abstract and physical morphology of a public space cannot adhere to an all purpose model that is reused in future time.

When a public space such as the plazas proposed under the 2007 plaza program is formulated in response to current demand, there is a level of relevance which the program is designed around given historical context of privately owned public space in New York City and other landmark policies that shifted the definitions of publicness and models of public space. A new model of publicness should be designed with each evolution of policy, perspective, and the urban dynamic which shape the extent of publicness in a public space. Without flexibility of modeling, there is the consequence of spurious correlation, unjust policy, and lack of information to draw meaningful relationships and conclusions.

Based on the findings of the methodology proposed, the paper further concludes that a mixed methods approach is imperative and more importantly, qualitative assessment is preferred over quantitative analysis when looking at the publicness of public space. The advantageous factor of on the ground observations is demonstrated through precedent study from Gehl and Whyte where they are able to capture the human experience in a public space. This dimension of analysis also helps tie together the point of the public being true owners of the space which they inhabit so leaving out field studies makes for an incomplete measure of publicness.

Today, there are many variations of public space whose characteristics challenge the extent of publicness which are not accounted for in existing models. For example,

multi-use of a parking lot that is transformed to a farmers market or creative space on the weekends reflects the image of a traditional public space where it is freely accessible and promotes diversity of use in an alternative setting. In this case, there are new metrics to consider that goes beyond metrics of use, ownership, accessibility, and management. The monetary transactions that take place within the use of the space should be challenged because it could relate to the accessibility of a neighborhood or have future impacts on the development surrounding the area. Another example is that of a university campus which is fenced off and regulated for entrance and activities. This would also be difficult to assess for publicness using existing models since regulation differs from management in that it goes beyond the agent or stakeholder in power and instead requires close analysis of the legislative documents which guide regulation.

As demonstrated in this paper's research, assessing the publicness of any public space requires in-depth, multidimensional research design. It is necessary for a model of publicness to take into consideration these aspects which make defining publicness a multi-facet and controversial topic, and more importantly, it is worthwhile for planners to prioritize research and discussion of public space into their practice because it is fundamental to the discipline of urban planning which begins with the makers of the space - the inhabitants. Without public space, the built environment would not be able to tie together individual components that make up a city. From streets to sidewalks, to storefronts and residential neighborhoods, everything that resides in between is the public space. The NYC Plaza program captures this vantage point by bringing its planning, design, and construction into partnerships with the department of

transportation, but it fails to enforce consistency of assessing publicness in the micro-context. This paper hopes that future research will expand upon the hybrid model tested in its methodology and help forge new visions of what public space could become through utilization of digital data and refinements of technological advancements.

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