

H1904B

Role of Public Transportation in Supporting Urban Cultural and Creative Functions

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Background and Purposes

Viewpoint of future cities: Sustainability + Creativity

Importance of accumulating cultural and creative functions and activities

Clarifying the roles of public transportation

- Responding to traffic demand for cultural and creative functions and activities
- As a system that induces and entices these activities

First Year

- Comprehensive discussions
- Case studies in New York and London
- Online awareness and behavior survey

Second Year

- Detailed survey on awareness, behaviors, and management structure of the area
- Deepening projects regarding New York, including inviting specialists
- Basic survey of case studies in Japan

Third Year

- Full-scale survey on case studies, summary and proposals



Overview of FY2021 Activities

- (1) Inviting overseas specialists and holding workshops
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 - Hearings with Vienna Department of Transportation
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Inviting Janette Sadik-Khan



Reallocation of space in downtown New York

- Example of Times Square
 - Increased pedestrian ratio by 35%
 - Decreased pedestrian accidents by 35%
 - Reduced vehicle speed by 17%
 - Decreased NO₂ ratio by 41%
 - Increased rental fees for retailers
 - Increased 5 large stores
 - Included in the best 10 sales ranking of commercial areas in the world
- New York City
 - Decreased the number of traffic accidents in 2001-2018 by 49%

Opinion exchange (May in Tokyo, December in New York)

- Shifting emphasis to pedestrians, bicycles, and public transportation
- Starting from experimental implementation and moving to short-term and long-term implementation
- Significant decrease in pedestrian accidents
- Expecting that changing driver behaviors will alleviate traffic jams
- Dispersion by means of transportation:

Comparison of number of users vs. Comparison of space

- Restoration of street space
- Difficulty in involvement in public transportation operations:

Department of Transportation ≠ Public transportation operation services



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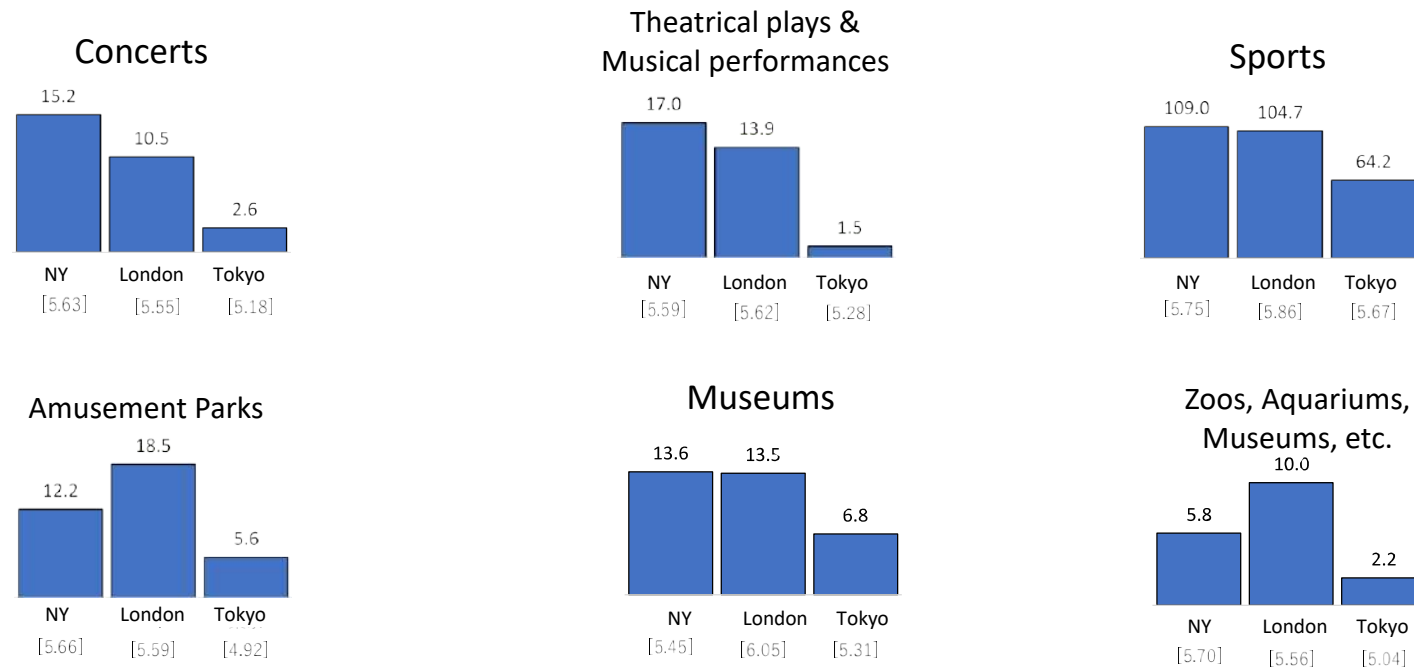
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Transport Disadvantage Theory and Urban Transportation Measures regarding Leisure

- Discussions on transport disadvantage (TD) in relation to transportation measures have attracted attention
 - Recognizing that finding TD by region and individual are effective
- TD is generated by the dissociation between transportation needs and seeds
- Hierarchical structure of “needs”
 - Only when the lower desires are achieved are higher needs formed.
 - Higher social needs are above the lower physiological needs.
- Therefore, TD has both biological and social TDs.
- Urban transportation measures regarding leisure aim to eliminate social TD.

Comparison Survey on Leisure Activities and Transportation Accessibilities in Three Cities



* Online questionnaire was given to 500 residents in each city.

* Figures of the bar graphs show annual average numbers of individual activities. Figures in [] show mean values of subjective accessibility.

➡ Tokyo shows lower entertainment activities during leisure time compared with New York and London.

There is a potential to expand the cultural attractiveness of cities through the vitalization of leisure activities.



Transportation accessibilities to leisure activities can increase subjective sense of happiness

		Emotional Happiness			Cognitive Happiness		
		Tokyo	New York	London	Tokyo	New York	London
Frequency	Concerts						
	Theatrical Plays/ Musical Performances						
	Most frequent leisure activity						
Subjective ACC	Concerts	+	+				+
	Theatrical Plays/ Musical Performances						
	Most frequent leisure activity		+			+	
Frequency × Subjective ACC	Concerts					+	
	Theatrical Plays/ Musical Performances						
	Most frequent leisure activity	+					
Individual Attribute	Students	+					+
	Housewives						
	Individuals with a child/children						+
	Unemployed individuals		+	+	+	+	+
	Household income	+			+		
	Gender						
	Age			+			
N		161	105	110	161	105	110
R ²		0.113	0.199	0.162	0.124	0.185	0.193
Adjusted R ²		0.09	0.175	0.146	0.113	0.161	0.163

Frequency of leisure activities does not show a statistically significant effect on subjective sense of happiness.

Accessibility to leisure activities may increase the subjective sense of happiness in some cases.

A combination of high accessibility and frequency of activities may increase the subjective sense of happiness in some cases.

* This chart is the result of the regression analysis using emotional happiness and cognitive happiness as explained variables.

* Thicker "+" means 5% significance, and thin "+" means 10% significance.

* "Most frequent leisure activities" were chosen from "Sports," "Amusement Parks," "Museums," and "Zoos, Aquariums, Museums, etc. ("Watching a movie" and "Spectator sports" were excluded from the analysis due to the problems in data.)

* N means the number of respondents who chose all of "Concerts," "Theatrical Plays/ Musical Performances," and "Most frequent leisure activity."



Leisure activities are unified experience with associated activities after the event

Leisure Activities	Associated Activities (Multiple answers allowed)	Tokyo	New York	London
Concerts	Have a meal	31.0%	35.0%	30.7%
	Go shopping	9.9%	10.6%	9.8%
	Drink alcohol	28.1%	29.1%	27.8%
	Karaoke	2.2% n=406	3.3% n=423	2.2% n=410
	Game arcade	1.5%	2.1%	1.5%
	Other	0.7%	0.7%	0.7%
	Select at least one	47.3%	50.8%	46.8%
Theatrical Plays/ Musical Performances	Have a meal	43.5%	50.1%	44.9%
	Go shopping	14.3%	18.8%	14.7%
	Drink alcohol	25.1%	27.1%	25.9%
	Karaoke	1.2% n=414	2.6% n=421	1.2% n=401
	Game arcade	1.0%	1.9%	1.0%
	Other	0.7%	1.4%	0.7%
	Select at least one	56.8%	63.2%	50.1%
Most frequent leisure activity	Have a meal	29.9%	31.0%	24.4%
	Go shopping	13.6%	14.3%	15.7%
	Drink alcohol	16.5%	14.5%	19.8%
	Karaoke	1.6% n=406	2.0% n=491	1.4% n=491
	Game arcade	2.0%	2.4%	0.6%
	Other	2.4%	1.6%	2.2%
	Select at least one	44.4%	42.8%	44.8%

Approx. 40 to 60% of individuals engage in associated activities after leisure activities. "Have a meal" and "drink alcohol" were selected by many respondents.



It is necessary to research city development that can increase the satisfaction of a combination of leisure activities (concerts and theatrical plays) and associated activities following these as a successive experience.

Those shown below tend to engaged in associated activities.

(Result of logistic regression analysis for the impact on perform or not perform)

- Young (New York, London)
- Individuals with an accompanying person (New York, Tokyo)
- Less time for transportation and costs (New York, London)



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Hearings with the Vienna Department of Transportation

Historical Background of the City

- Prioritized culture and art in the 19th century
- Delay in road construction due to financial difficulty after the war + Delay in subway construction: as a result, pedestrians + trams + new subway systems all changed for the better
- Contributed to ensuring a higher quality of life at present

Modern ideas of transportation measures

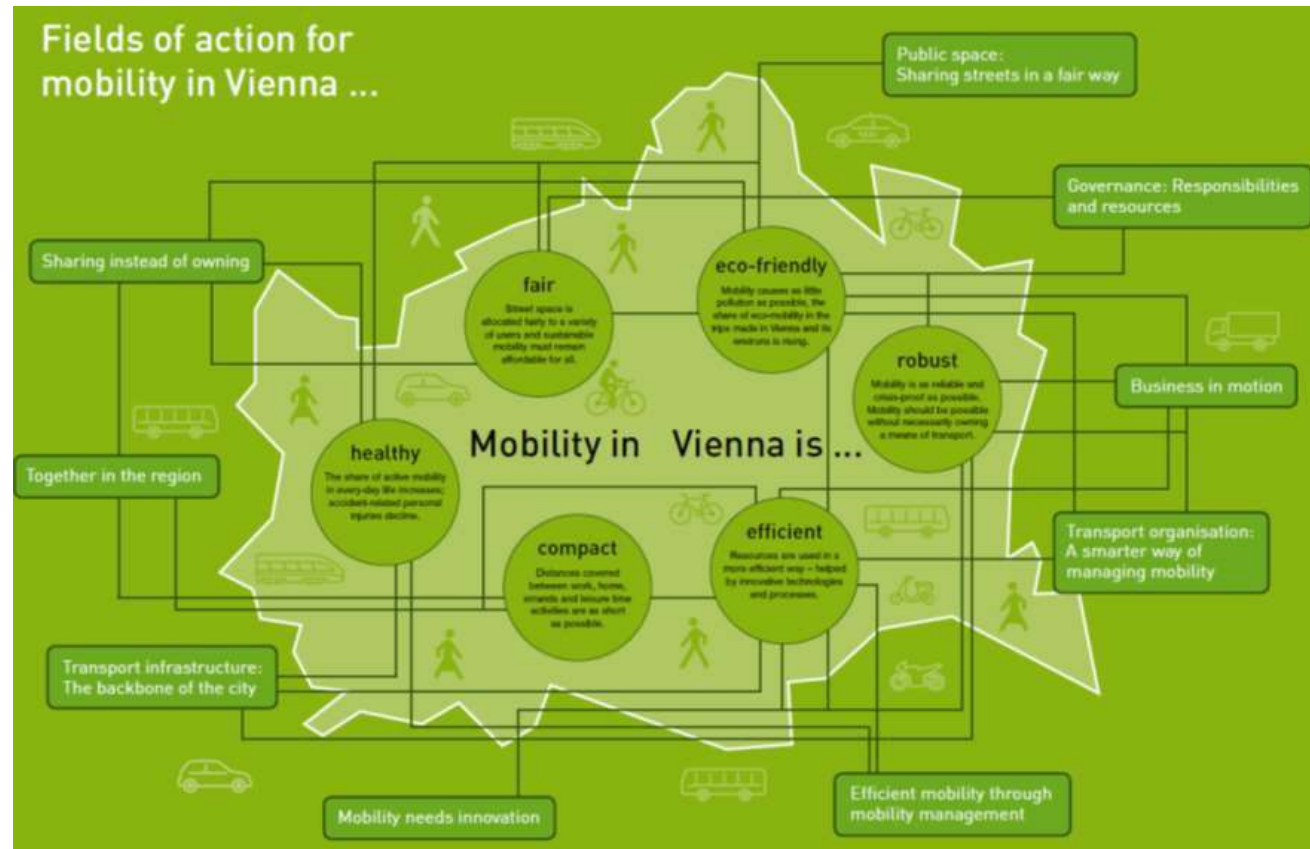
- Responding to sharing systems in the early stage
- Responding to night & midnight availability of public transportation
- Well-prepared fare system: Annual tickets and night tickets
- Information app: Has not yet completed for coordination among business providers

High awareness of problems





Urban Mobility Plan STEP 2025 Thematic Concept





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Vitalization Plan for Downtown Toyama City

Supporting culture and art functions with public transportation

- Providing no parking lots at libraries

Focusing on commerce, healthcare and culture

- Commerce still has many issues
 - > Necessary to cultivate awareness of area management
- Development of comprehensive care bases (Reuse of elementary school buildings downtown)
- Necessary to reduce 80% of automobile use for commuting
 - > Trams are installed under the JR railways and this increased the ridership on both trams and buses by 20%
 - > Taking advantage of the circumstances

Toyama marked the top dual income ratio in Japan > Targeting the elderly as weekday-users

- Discount tickets for visiting downtown
- Free tickets for museums when visiting with a grandchild/ grandchildren

Delicious, fun, and stylish (Mayor's motto)

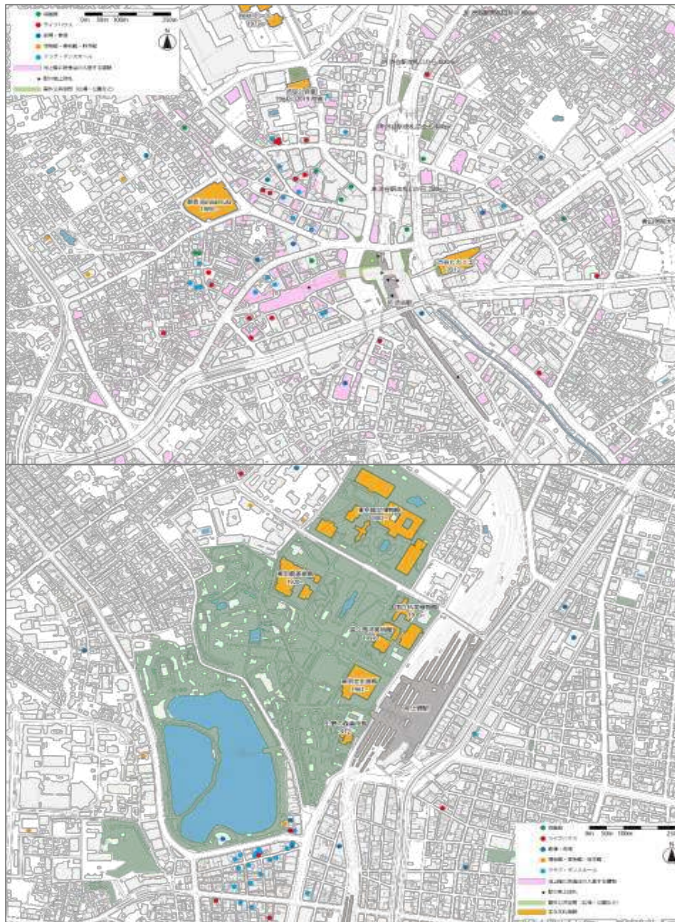


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Shibuya: Cultural Facility-Dispersion Type

Gathering different scale cultural facilities



Hibiya: Cultural Base-Creation Type

Cultural base development connected with public transportation
e.g.) Redevelopment of Tokyo Midtown Hibiya



Ueno: Cultural Facility-Concentration Type

Cultural facilities gathered inside Ueno Park and are directly connected to Ueno Station

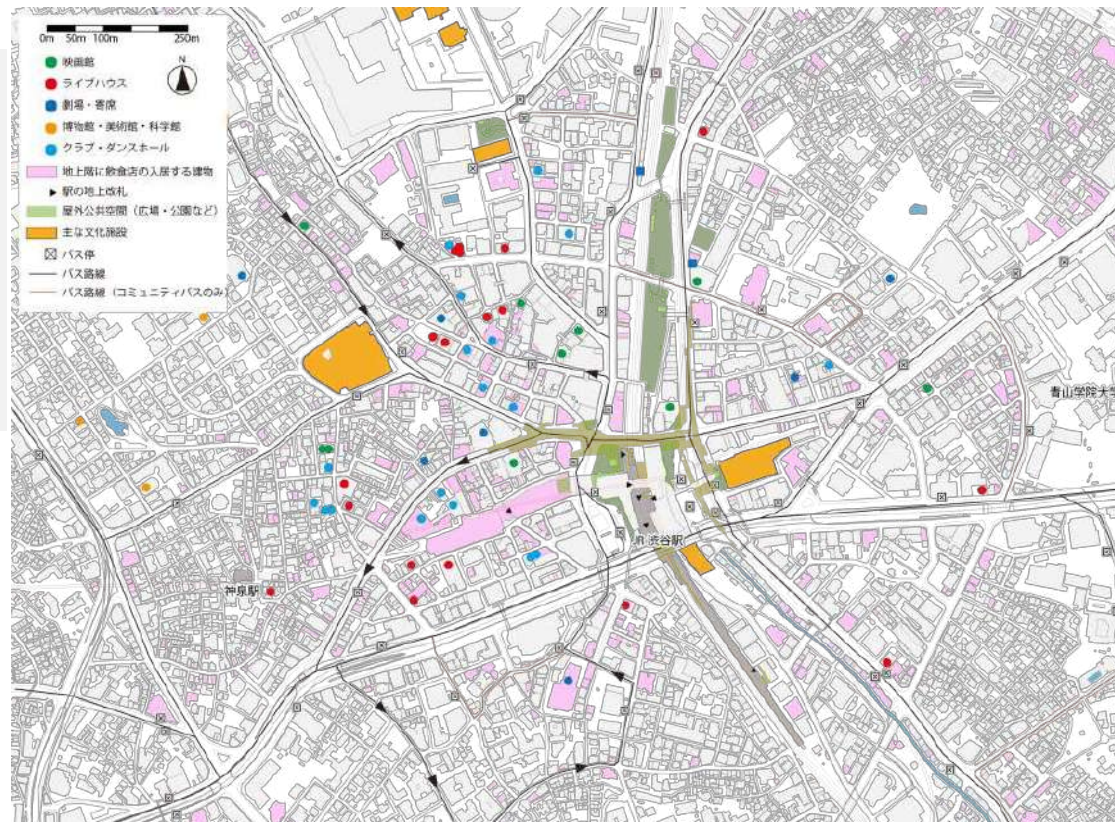
Ikebukuro: Unified-Development Type

Unified development for cultural facilities and public spaces
e.g.) Tokyo Metropolitan Theatre, Hareza Ikebukuro



- (1) Enticement of cultural facilities to the locations far from the stations
- (2) Development of small-size clusters of cultural facilities
- (3) Recent TOD-type creative and cultural city development measures

- Movie theater
- Live performance
- Theater
- Museum & Science center
- Club & Dance hall
- Building with restaurants on the ground level
- Ticket gate at a station on the ground level
- Outdoor space (Square, park, etc.)
- Major cultural facility
- Bus stop
- City bus route
- Community bus route



Public Transportation and Cultural Facility Development

Vienna



New York



London



■ Features

1. Accumulation of theaters: Within 600m semidiameter
2. Train stations on outer trucks
Close to subways and trams
3. Making squares within the areas of accumulation
Reallocation of road spaces in neighboring areas

Legend

- Theaters
- -- the train station
- * Reallocation of road spaces

Case Study: Vienna (Near the Opera in Paris)



Oper für alle - Opera for Everyone

■ Surrounding Environment

- Great access to trams
- Space exclusive for pedestrians (Wandering around the paths and dining before and after events)
- Free movies at square* in good seasons
- *Square = Space above underground parking lot (capacity of 540 vehicles)



A photo taken during the survey



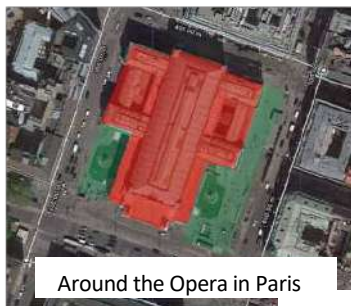
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Comparison of Spaces around Theaters among Cities

Comparing theaters ■ and development of space for pedestrians ■

A. Downtown Development: Theaters are concentrated in downtown.

C. Undeveloped



Vienna



Hibiya



Shibuya

B. Development of frontal roads: Theaters are dispersed.



London



New York



Features of Japanese Theatrical Areas Seen through International Comparison

Especially regarding major facilities

1. Small accumulation

Small clusters of facilities are gradually formed to surround major facilities

* Major facilities form clusters in overseas cities. (Major facilities are medium size in England and the United States.)

2. Close relationship between the location of railway stations and facilities

Surrounding streets focused on transportation functions that connect stations and regions.
Development of squares performed in the same areas or buildings.

3. We are not confident that Japanese theatrical areas are designed to provide the experience of watching a wide variety of theatrical performances by a diverse range of people through unification with the facilities

* Pedestrian spaces next to facilities play that role overseas.
e.g. Outdoor theaters in Vienna/ Performances in Times Square in New York, etc.



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Issues of Public Transportation in Supporting the Urban Cultural and Creative Functions

Issues in urban public transportation

- Prioritizing commuting?
 - Commute demand is important profit vs. Consideration for and creation of other demands
- New technology?
 - MaaS/ Shared transportation/ Autonomous driving
- Social inclusion?
 - Reality in the promotion of barrier free
- > Options and flexibility of transportation means
Public transportation for sustainable cities
Area → Walkable System → Reliable Space → Enjoyable

Additional issues found through FY2021 research results

- Urban space composition
 - Layout of the location of cultural and creative functions and transportation functions
- Space connected to public transportation (stations)
 - Buffer functions to accept advanced excitement and aftereffects
- Public transportation facilities
 - Station and train design
- Public transportation services
 - Basic services: Fares/ Timetables (Frequency and Time zones), Associated services (Information/ Guide, etc.)



Summary: Conclusions and Future Issues

Inviting overseas specialists and overseas on-site surveys

- Learn about urban space composition/ Space for public transportation (streets and squares)/ Public transportation infrastructure/ Public transportation service ideas

Survey and analysis on leisure activities

- Learn about meaning of leisure behaviors, linkage of behaviors, and need for spaces for leisure activities

Discussions at mapping and research meetings

- Meaning of buffer spaces, especially including linked streets and squares + Meaning of linkage of buffer spaces and public transportation (Not only all-night services and discount tickets)

Future issues

- Proposals for ideal public transportation (details)
- Proposals for linkage with trend items (MaaS/ Shared services/ Autonomous driving)
- Specific issues and proposals for Japan (Tokyo and local cities), or large cities in developing countries



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