Design for the Third Place Based on Satisfaction of Public's Demand- A Case Study of Taipei Main Station District

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Abstract: This study aims to investigate the demand for third spaces in micro-cities and explore people's perception, desire to stay, and willingness to revisit these spaces through questionnaire surveys and SEM structural model analysis. In micro-cities, integrating the "micro-mobility" mode such as walking or cycling for short-distance travel, we can create small squares, public green spaces, and pocket parks around micro-spaces to enrich the street space and enhance community belonging and identity. These micro-spaces not only serve as development areas for the functions of third spaces in micro-cities but also act as permeable boundaries within the city, achieving balanced planning and utilization. The research findings indicate that people have relatively weak awareness of third spaces but are generally satisfied with the existing planned spaces and believe that third spaces can enrich the urban environment. Dynamic urban spaces have a strong appeal to people, and the experiences and services provided by these spaces can attract people to visit. Therefore, designing spaces that stimulate interaction and communication is crucial. Additionally, the aesthetic quality of the spaces also has a certain influence on people's willingness to revisit them

Keywords: Micro City, The Third Place, Micro Space, Satisfaction.

1. INTRODUCTION

"Micro Cities" emphasizes people-centered urban design, mixed diversity, and appropriate development scale. It aims to construct a small-scale living environment that satisfies all daily needs within a localized community. It does not prioritize mass transportation systems as the core, nor does it emphasize high density and intensity of development. Instead, it pursues a more "people-centered" environment and self-sufficiency in terms of living functions (Government of the United Kingdom, 2020).

Some elite individuals occupy certain public spaces, controlling the chart and creating a division in social class and social space. The resulting homogenization of space contributes to the increasing fragmentation of urban areas. To address this, public spaces should be accessible and heterogeneous, taking into consideration the accessibility for different social strata (Feng et al., 2015). With the growth of immigrant populations, there is a growing concern about the positive and negative impacts of greenspaces on immigrant health and well-being. Parks and greenspaces facilitate positive interactions among people with diverse cultural backgrounds and support effective strategies for local immigrant development, fostering attachment, a sense of belonging, and good health (Sara Edge et al., 2023). In 1989, Ray Oldenburg introduced the concept of the "Third Place" in his book "The Great Good Place," defining it as informal public spaces outside of the home (first place) and the workplace (second place). In summary, the third place refers to informal public spaces beyond residential and work settings, extending even to streets and neighborhoods. Both greenspaces and third places have the potential to enhance social cohesion and promote social integration. However, due to prevailing stereotypes, society may create a sense of otherness, leading to challenges in improving social inclusivity. It is meaningful to study the relationship between greenspaces, immigration, and society

because immigrants are underrepresented in recreational use of greenspaces across different countries, and their perceptions and behaviors regarding leisure activities in greenspaces may vary (Kloek et al., 2013).

In the book "Designing Disorder" (2022), the author mentions that the starting point for generating interaction in a space is at the intersection of multiple isolated places. By transforming closed boundaries into permeable borders, the urban surface can be transformed into an environment conducive to social interaction. Therefore, in addition to examining the factors influencing the demand for third spaces in micro cities and exploring perceptions and experiences of third spaces, this study aims to expand the analysis to a larger scale of space. It takes the concept of "permeable boundaries" as a role to investigate how urban spaces can achieve the most effective interaction (Pablo et al., 2022, p. 117). In summary, the following four research objectives are proposed:

i. Investigate the influence of difference social status and culture background on individuals.

ii. Analyze the perception and experience of individuals regarding the third place in urban environment.

iii. Analyze the structural impact of third place on user need.

iv. Explore the concept of permeable boundaries in urban space and how they can be integrated with other spaces to create a cohesive and diverse environment.

2. LITERATURE REVIEW

A. The Public Space in The Micro City

The concept of a "20-minute neighborhood" in micro cities refers to shaping a living environment where people can access various amenities and facilities within a short distance, either by walking or using micro-mobility transportation. This allows them to meet their daily needs and enjoy cultural and natural spaces. The basic framework of a micro city, as proposed by Gensler (2020), includes the following elements:

i. Provide safe, convenient and accessible road spaces for pedestrian and cyclists to encourage a shift in behavior patterns.

ii. Create spacious and comfortable green spaces.

iii. Ensure the availability of local amenities and services, as well as easy access to destinations.

iv. Promote an efficient public transportation system that connect to employment and services area.

v. Plan for spacious open space and propriate density to support local services and ransporatation.

vi. Encourage walking and micro-mobility modes of transportation to foster a thriving local economy.

Due to the aging population, Yang et al. (2016) also pointed out in their study, public open spaces in urban renewal districts should address the special social needs of the relatively concentrated elderly population. It is stressed that one of their major social needs is maintaining constant interaction with each other in order to avoid the feeling of loneliness. This differs from the needs of residents in new development areas who are mostly of a younger generation and who prefer active lifestyles and independence. Emphasizing that public spaces are utilized differently by different age groups.

B. The Third Place

In the book " Designing Disorder " by Pablo Sendra and Richard Sennett, they propose and encourage the concept of an "Open City," where public spaces are freely accessible and promote social interaction. They argue that modern cities are becoming stifled and overly constrained by rigid and functionally limited environments, which restrict people's freedom of movement and suppress unconventional social relationships, thereby stifling urban growth. By designing infrastructure as open systems, it is necessary to consider the connections with surrounding areas, observe existing activities, residents in the area, and identify the groups that may gather in these public spaces. Based on this understanding, the urban surface can undergo a transformation.

An example of such transformation is seen in Barcelona's implementation of "Superblocks," which involves significantly reducing the allocation of public space to cars and widening public spaces for people to gather and engage in recreational activities. This prioritization of public spaces allows residents to engage in informal gatherings.

The concept of the third space aligns with this idea of an open and inclusive urban environment (Pablo Sendra et al., 2022).

In an article titled "Why Everyone Needs 'Third Places'" published in the online journal Metro, it is suggested that "we all need third places." The third place is seen as a fundamental need for modern individuals living in a technology-driven world to connect with others and foster emotional relationships, rather than distancing themselves from machines. In the context of immigrant life, this need is inevitable. Each recognized third place brings a sense of rootedness and spiritual rejuvenation to immigrant individuals, which is also a characteristic of the third place (Velma et al., 2021).

Ray Oldenburg believes that achieving the so-called third place requires eight basic conditions: (1) on natural ground, (2) the third place as a leveler, (3) conversation is the main activity, (4) accessibility and accommodation, (5) the regulars, (6) a low profile, (7) the mode is playful, and (8) a home away from home. In terms of cities, Oldenburg argues that the third place reflects the diversity and vitality of a city, and its benefits serve not only the community residents but also have positive effects on the overall community (Leo W. Jeffers et al., 2009).

For users of the third place, freedom must be provided. Fath et al. (2022) mentioned in a study that the third place should not have too many rules, such as a minimum transaction volume, limited internet connectivity, or shorter operating hours. Some examples of third places mentioned by users are restaurants and coworking spaces within walking distance from their schools.

Jeffres et al. (2009) developed a typology of various types of third places. In the article, they organized the places into four categories based on the forms of activities.

i. Eating & Drinking & Talking: Coffee shop, restaurant or bar

ii. Organized Activities: Community Activity Center

iii. Outdoor Venue: Park, Plaza, street

iv. Commercial Venue: shopping mall, market

C. Space Requirement

In 1973, Kotler first proposed that the physical environment of a retail space, specifically the "atmosphere," can influence consumer purchasing decisions (Jalon et al., 2019: vol. 11). Regarding leisure facilities, where people typically spend more time (such as theme parks, theaters, sports stadiums, etc.), the perception and quality of the service landscape play a crucial role in consumer satisfaction. This, in turn, affects their duration of stay and likelihood of revisiting the leisure facility (Wakefield & Blodgett, 1994: 66-76). In recent years, many researchers have started exploring the impact of customer presence on the consumer experience and have identified other individuals' characteristics, such as age, appearance, and behavior, as important components of the overall service landscape (Hanks et al., 2017; Kim and Lee, 2012; Line and Hanks, 2019; Zheng et al., 2021).

The research by Lin Chia-Wen (2008) suggests that urban environments in Taiwan have long been planned from the perspective of planners, resulting in a significant disparity between planning supply and public demand. Marvin (2013) conducted a study on the service levels of elderly needs and identified several factors, including time, user costs, safety, user comfort, and convenience.

3. METHOD

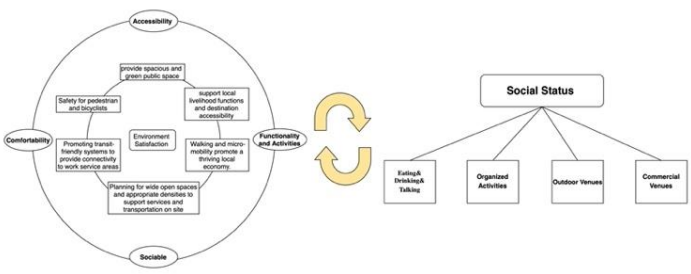

Figure 1: Questionnaire Design

This chapter establishes the research design based on a literature review related to open spaces and third spaces in micro cities. The aim is to understand the physiological and psychological effects of the third space on individuals. The literature review explores the interrelationship between individuals and the third space in the surrounding living environment, focusing on topics such as open spaces, third spaces, and spatial needs in micro cities. Data collection is conducted through questionnaires, and after conducting various factor analyses, the relative importance of different factors is determined for subsequent result analysis.

A. Questionnaire Design and Descriptive Statistical Analysis

This study uses a "general questionnaire" that is distributed to individuals who are at least 20 years old, with Taipei Main Station within an 800-meter radius as the research scope. Firstly, the social status background of the respondents is collected through basic demographic questions. Then, a comparison is made between the satisfaction levels and frequency of visiting different locations. The four key elements mentioned in "What Makes a Successful Place" are used as the dependent variables in the questionnaire construction. Furthermore, specific items are designed based on the basic framework of a micro city, as mentioned earlier, to gather data on satisfaction levels. Following the approach proposed by Jeffres et al. (2009), the frequency of public visits to different types of places is investigated as a primary objective of this study.

B. Structural Equation Model (SEM)

The Structural Equation Model (SEM) is a commonly used analytical model in social sciences that integrates multiple regression, factor analysis, and canonical correlation analysis to analyze the covariance or correlation among multiple variables. It extends the traditional multiple linear regression equation and examines the relationships between related variables. In this study, SEM is employed to analyze the relationship between public demand and perception of the third space environment.

The study begins by designing a questionnaire to quantify the experiences of individuals within the space. Four dimensions, namely "accessibility," "comfort," "sociality," and "functionality and activity," are considered as dependent variables. Further analysis is conducted by examining the socio-economic environment and spatial patterns to understand the levels of public demand. The findings are then divided into three parts: "perception of the third space," "desire to stay in the third space," and "intention to revisit," for discussion.

Finally, based on the obtained results and their derived representative observed variables (independent variables), the impact of "third space demand in a micro city" is analyzed. The SEM model framework for this study is illustrated in Figure 2 below.

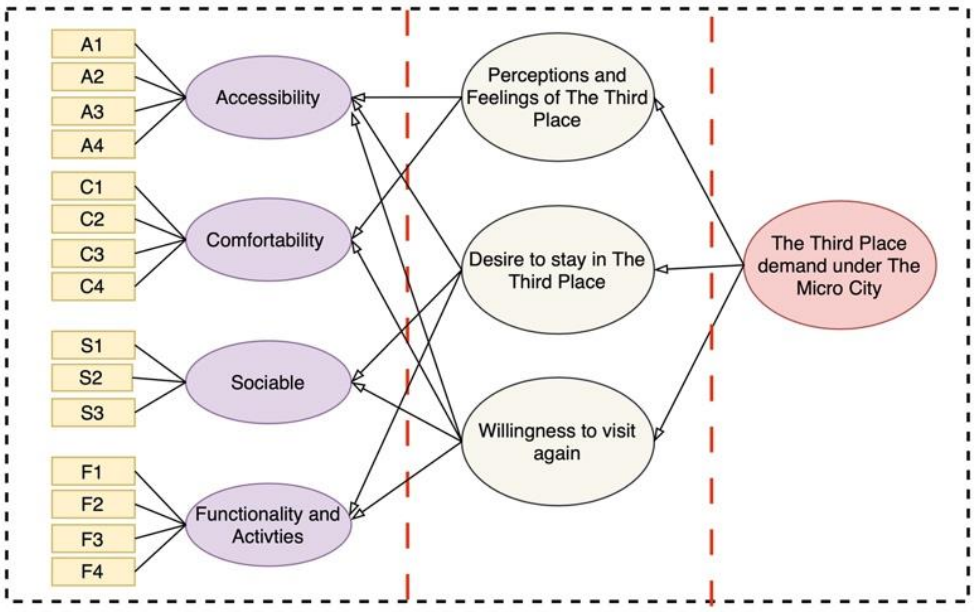

Figure 2: SEM Model Diagram

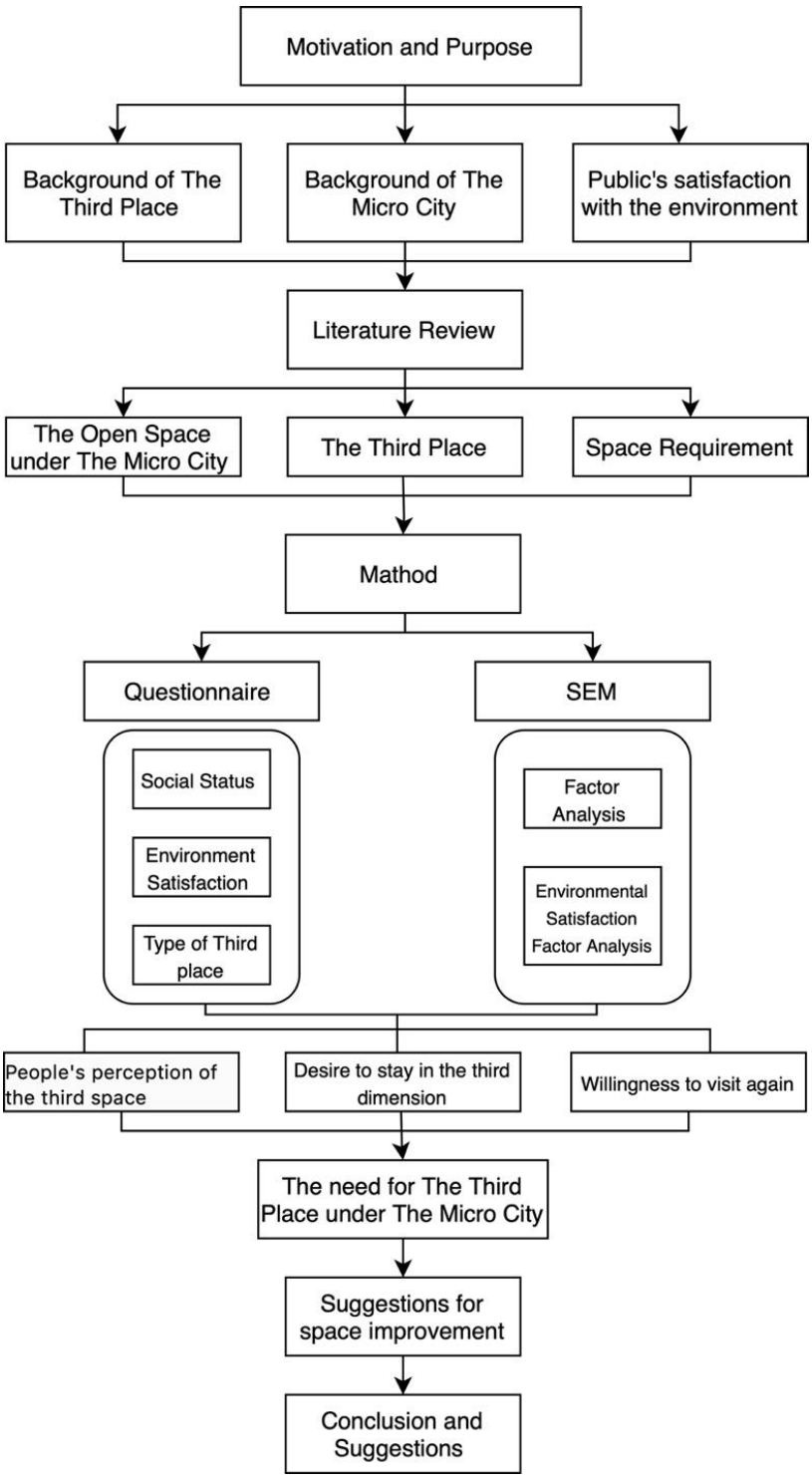

Figure 3: SEM flowchart

4. CASE ANALYSIS

This study focuses on an 800-meter radius extending from Taipei Main Station as the research scope. A total of 160 questionnaires were distributed on June 8th and June 9th, 2023, resulting in 100 valid responses and 60 invalid responses. The data was analyzed using the Structural Equation Model (SEM) to explore the demand for the third space in a micro city and understand the factors influencing spatial planning as analyzed by the respondents. The findings from this analysis will be used to draw conclusions and provide recommendations in Chapter 5. The aim is to utilize these analytical results as indicators for the development of spatial planning in micro cities, fostering a permeable urban boundary that creates a more friendly and diverse space.

A. Questionnaire Analysis

Through the distribution and collection of questionnaires, the level of perception (satisfaction) of the general public towards the environment and third spaces can be understood. This allows for the analysis of questionnaire items to assess and study the quality of the environment. The following is a preliminary analysis of the questionnaire results, which will serve as the main data source for the subsequent Structural Equation Model (SEM) analysis and further exploration.

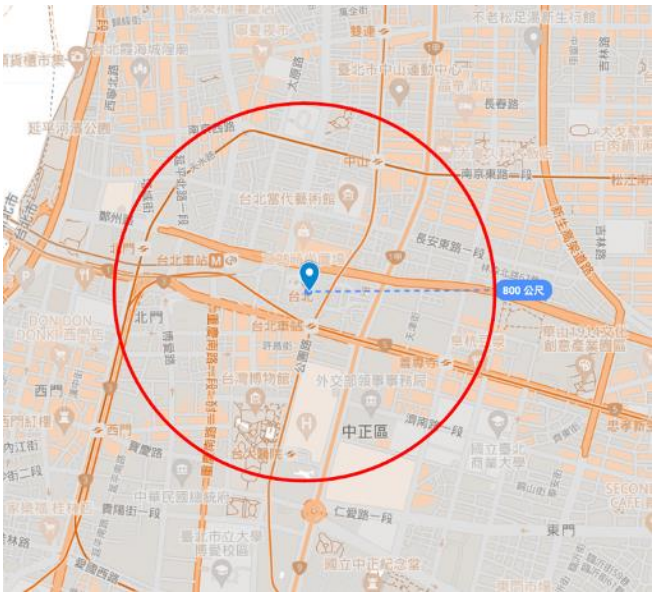

Figure 4: Research scope

a. Basic Information

Translation: Firstly, it is necessary to understand the background information of the participants. The basic demographic questions include gender, age, education level, average monthly income, and occupation. Detailed statistical data can be found in Table 1 and Table 2. From the tables, it can be observed that there were 54 female participants and 46 male participants. The average age range of the respondents was between 30-39 years old, with an average income range of 50,000-60,000 NT dollars. The majority of the participants had a college or university degree, and the most common occupation among the respondents was in the business field.

Table 1：Questionnaire Basic Data

Categories	Items	Population
Gender	Female	54
	Male	46
Age	20-29 years old	38
	30-39 years old	16
	40-55 years old	25
	55-64 years old	20
	65 years old and above	1
Education	College	69
	Graduate school (and above)	9
	High School	22

Categories	Items	Population
Income	20000-30000 NTD	11
	30001-40000	16
	40001-50000	11
	50000-60000	10
	60001-70000	21
	Above 100,000	4
	Below 20,000	12
	No Income	15

Categories	Items	Population
Occupation	Agriculture	2
	Blue-collar Worker	8
	Business	20
	Civil Servant	1
	Education	7
	Healthcare	4
	Homemaker	2
	Others	9
	Retired	3
	Military/Police	1
	Services Industry	20
	Student	21
	Unemployed	2
160 questionnaires were distributed in total. 100 questionnaires were collected. The total number of valid questionnaires was 100.		

Table 1: Questionnaire basic Data (2)

Gender	Rate	Age	Rate	Educational	Rate	Income	Rate	Occupation	Rate
Average	0.54	Average	3.3	Average	3.82	Average	4.29	Average	7.46
Median value	1	Median value	3	Median value	4	Median value	4	Median value	8
Mode	1	Mode	2	Mode	4	Mode	7	Mode	10

b. Questionnaire Analysis Result

According to the participants, the factors that have the highest impact on their satisfaction with the third space are "Do you think the aesthetic appeal of the third space would influence your willingness to revisit?" with a response rate of 50%, and "Do you think the third space contributes to a more diverse urban environment?" also with a response rate of 50%. Following these, the next influential factors are C3 "Do you find it comfortable and fulfilling to reach the

third space within a 10-minute walk?" with a response rate of 43%, and A1 "Is the third space you frequently visit convenient and easily accessible?" with a response rate of 44%. (Table 3,4,5,6)

Table 3: The Third Place Questionnaire Analysis- Accessible

Aspect	Influences Survey	5	4	3	2	1
Accessible	Is the third place you frequently visit convenient and easily accessible?	44	43	13	0	0
	Is the third place you visit located within a convenient distance from your home and workplace, accessible either directly or with a single transfer via public transportation?	40	32	19	7	2
	Even if your preferred third place is located at a certain distance from your home or workplace, would you still choose to visit it due to the experiences and services it provides?	30	46	17	6	1
	Is the third place you visit nearby and suitable for walking?	29	36	20	12	3

Table 2: The Third Place Questionnaire Analysis- Comfortability

Comfortability	Are the public spaces around your home and workplace well-planned? (e.g., parks, sports centers, etc.)	28	40	31	0	1
	Does the third place you frequently visit help you relax and bring enjoyment to your mood?	39	50	11	0	0
	Do you believe that being able to reach the third place within a 10-minute walk is comfortable and brings a sense of happiness?	43	46	10	1	0
	Do you believe that the aesthetic appeal of the facilities in the third place would influence your willingness to revisit it?	50	29	14	4	3

Table 3: The questionnaire Analysis- Sociable

Aspect	Influences Survey	5	4	3	2	1
Sociable	Is the third place you frequently visit conducive to conversations and interactions with others?	24	33	31	10	2
	Do you believe that the third place is a space where you can establish emotional connections with others and foster a sense of belonging?	25	42	25	6	2
	Is the third place you frequently visit open or available during nighttime hours, allowing you to visit it in the evening?	11	33	35	14	7

Table 4: The Questionnaire Analysis- Functionality and Activities

Aspect	Influences Survey	5	4	3	2	1
Functionality and Activities	Is the third place you frequently visit a place that requires spending or consumption?	20	35	30	9	6
	Does the third place you frequently visit offer affordable and favorable prices or benefits?	10	18	54	14	4
	Does the third place you frequently visit make you feel special and important?	21	43	27	7	2
	Do you believe that third places contribute to creating a more diverse urban environment?	50	36	12	2	0

Table 5: The Statistic of the Third Place

Rate	*Talking*	*Organization*	*Outdoor*	*Commercial*
5	0	0	0	0
4	9	62	10	12
3	22	12	46	20
2	27	12	29	40
1	**42**	**14**	**15**	**28**

Table 6: Statistic of Difference Income and the Third place

Talking	*Organization*	*Outdoor*	*Commercial*	*Income*
1	4	3	2	6
1	4	3	2	7
1	4	3	2	7
1	3	4	2	6
1	4	3	2	6
1	4	3	2	6
1	4	2	3	7
1	1	2	2	6
1	2	2	1	7
1	4	2	3	6
1	1	1	1	7
1	4	3	2	7

The most commonly visited type of third space by the participants is "Dining and conversational space," with 42% of the respondents indicating it as their most frequent choice. This is followed by "Commercial space," "Outdoor space," and "Organized spaces." When considering the income data from the previous table, it can be observed that even among participants with an average monthly income of over NT$50,000-100,000, the most common types of third spaces visited are still "Dining and conversational areas," "Commercial spaces," and "Outdoor spaces," with "Organized spaces" being the least frequent choice. (Table 7,8)

Table 7:Statistic of Difference Income and The Third Place

Talking	*Organization*	*Outdoor*	*Commercial*	*Income*
1	*4*	*3*	*2*	*2*
1	*4*	*2*	*3*	*1*
1	*4*	*2*	*3*	*2*
1	*4*	*2*	*3*	*1*
1	*2*	*4*	*3*	*2*
1	*3*	*4*	*2*	*1*
1	*4*	*3*	*2*	*2*
1	*4*	*3*	*2*	*1*
1	*4*	*3*	*2*	*1*
1	*4*	*3*	*2*	*2*

Talking	*Organization*	*Outdoor*	*Commercial*	*Income*
1	*4*	*3*	*2*	*2*
1	*4*	*2*	*2*	*2*
1	*4*	*3*	*2*	*1*
1	*4*	*3*	*2*	*1*
1	*3*	*2*	*4*	*1*

Table 9 represents the income group with no income or below NT$20,000. It can also be observed from the statistical table that within this income range, individuals still predominantly visit "Dining and conversational spaces" as their most frequent type of third space. This is followed by "Commercial spaces," "Outdoor spaces," and "Organized spaces." Although there is no significant difference when considering the overall picture, it is noteworthy that for this income group, "Commercial spaces" are not listed as the primary choice compared to the income group with an average monthly income of over NT$50,000-100,000. This highlights a difference in preferences within this specific income group.

B. Structural Equation Modeling

In this section, we will explore the SEM (Structural Equation Model) using the questionnaire items to investigate the demand for third spaces in a microcity and analyze the factors influencing spatial planning preferences among the public. Additionally, due to space limitations in this text, the questionnaire items will be analyzed using codes instead of their original wording. The following analysis will focus on the SEM model's structure and goodness of fit evaluation.

a. The establishment of the SEM for the third place satisfaction and research hypotheses:

According to the research objectives, the SEM model framework, as shown in the diagram, incorporates the perceptions and cognitions of older adults regarding the spatial environment during walking. The four dimensions mentioned in "What Make Successful Place," namely "accessibility," "comfort," "sociality," and "functionality and activities," are used as dependent variables. It is hypothesized that each dimension can reflect and understand people's satisfaction and expectations towards third spaces.

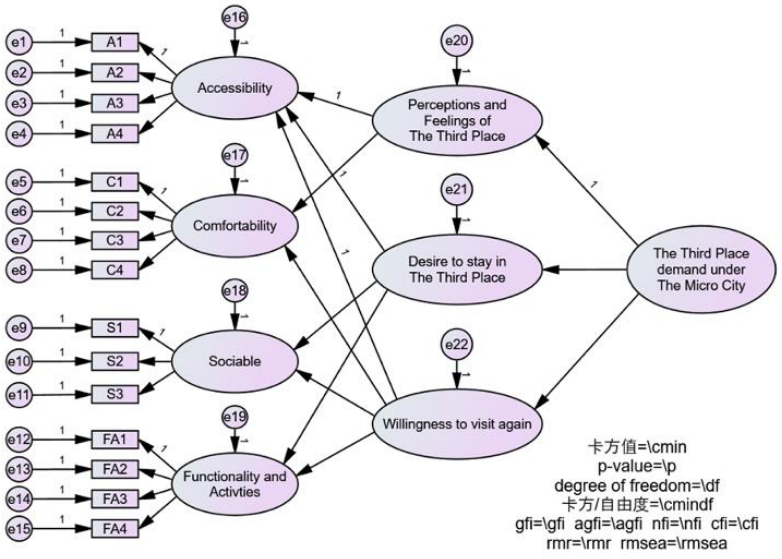

Figure 5: SEM Preliminary model analysis diagram

b. Modification and adjustment of the CFA structural model fit for third space satisfaction:

Due to the lack of valid data from the original model, in order to ensure that the SEM overall structural model analysis is valid, the SEM measurement model was first examined separately for its CFA (Confirmatory Factor Analysis) fit. The fit of the model was assessed based on various fit indices, including the chi-square value, degrees of freedom,

chi-square/degrees of freedom ratio, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), comparative fit index (CFI), root mean square residual (RMR), and root mean square error of approximation (RMSEA). Additionally, modification indices (MI) were used to identify necessary modifications to the structural model.

i. First Modification

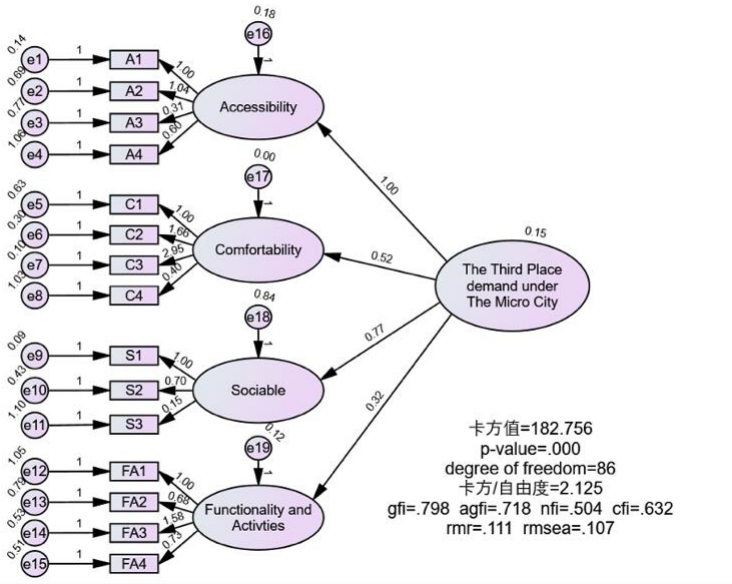

Figure 1: The first time model correction diagram (DELETE E20, E21, E22)

After the first modification (as shown in Figure 6), the chi-square value is 182.756 with 86 degrees of freedom, resulting in a chi-square/df ratio of 2.125, which meets the strict criteria of 1 to 3. However, the GFI is 0.798 (below the threshold of 0.8), AGFI is 0.718 (below the threshold of 0.8), NFI is 0.504 (below the threshold of 0.8), CFI is 0.632 (below the threshold of 0.8), RMR is 0.111 (above the threshold of 0.1), and RMSEA is 0.107 (above the threshold of 0.08). Since the most important indicator, RMSEA, still does not meet the threshold, a second modification will be performed.

ii. Second Modification

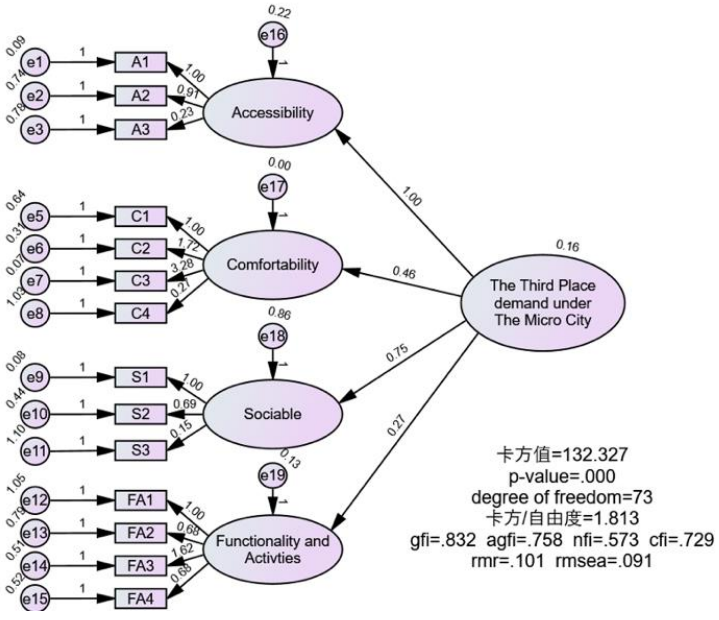

Figure 2: The second times model correction diagram (DELETE A4)

After the second modification, by removing A4 (as shown in Figure 7), the chi-square value is 132.327 with 73 degrees of freedom, resulting in a chi-square/df ratio of 1.813, which meets the strict criteria of 1 to 3. However, the GFI is 0.832 (below the threshold of 0.8), AGFI is 0.758 (below the threshold of 0.8), NFI is 0.573 (below the threshold of 0.8), CFI is 0.792 (below the threshold of 0.8), RMR is 0.091 (above the threshold of 0.1), and RMSEA is 0.091 (above the threshold of 0.08). Since the most important indicator, RMSEA, still does not meet the threshold, a third modification is required.

iii. Third Modification

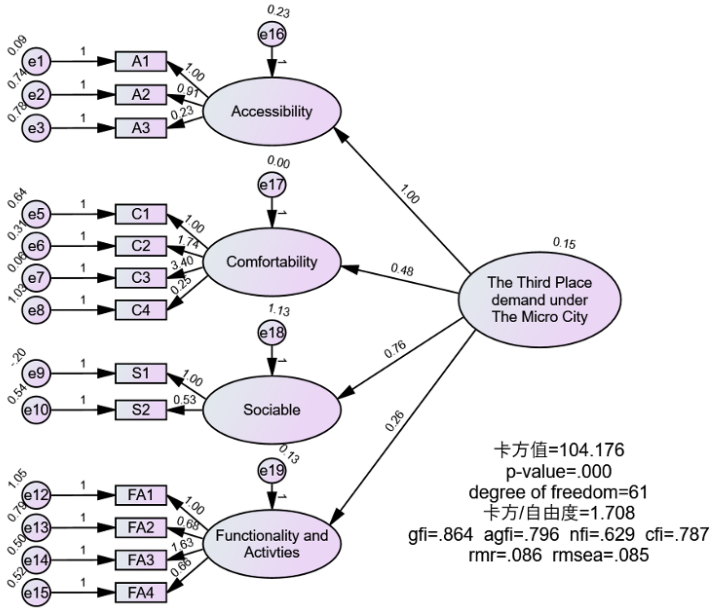

Figure 8: The final model correction diagram (DELETE S3)

After the third modification (as shown in Figure 8), the chi-square value is 104.176 with 61 degrees of freedom, resulting in a chi-square/df ratio of 1.708, which meets the strict criteria of 1 to 3. The GFI is 0.864 (above the threshold of 0.8), AGFI is 0.796 (below the threshold of 0.8), NFI is 0.629 (below the threshold of 0.8), CFI is 0.787 (below the threshold of 0.8), RMR is 0.086 (below the threshold of 0.1), and RMSEA is 0.085 (above the threshold of 0.08). Although the most important indicator, RMSEA, still does not meet the strict criterion, during the fourth modification, the RMSEA value increases, indicating a worse fit. However, the CFI value passes the threshold of 0.8. However, since RMSEA has a significant impact in the overall model structure, it remains the primary indicator. Therefore, the fourth modification is not suitable, and the SEM structure after the third modification is considered the final model.

c. Analysis Result

Table 10: Analysis result consolidation

Test Statistic		Number Range	Best Fit	Result	Model Fit judgment
Absolute Test	X^2	Above 0	The smaller the better	104.176	Reach the ideal fit
	X^2/df	Above 0	Between 1 and 5, but less than 3 is better	1.708	Reach the ideal fit
	GFI	Between 0 and 1 But negative values may be occurred	0.5~0.8 is good, more than 0.8 is excellent	0.864	Reach the best ideal fit
	RMR	Between 0 and 1	Below 0.1	0.086	Reach the best ideal fit
	RMSEA	Above 0	0.05~0.08 is good, below 0.05 is excellent	0.085	Reach the ideal fit

According to the SEM structural analysis results of the third-space satisfaction, the overall fit indices of the final model were evaluated and summarized. The table below presents the representative observed variables, indicator names, factor loadings, and their corresponding factors. This SEM structure evaluation model can be used as a basis for planning the environmental indicators of the third spaces in micro-cities for the satisfaction of the general public.

Table 8: Analysis result consolidation

Test Statistic		Number Range	Best Fit	Result	Model Fit judgment
Incremental Test	AGFI	Between 0 and 1 But negative values may be occurred	0.5~0.8 is good, above 0.8 is excellent	0.796	Reach the ideal fit
	NFI	Between 0 and 1	0.5~0.8 is good, above 0.8 is better	0.629	Reach the ideal fit
	CFI	Between 0 and 1 But negative values may be occurred	0.5~0.8 is good, above 0.8 is excellent	0.787	Reach the ideal fit

d. The results and discussion of the SEM analysis

Based on the preliminary results discussion using the satisfaction scale in this study (Tables 3 to 6), it was observed that three indicator loadings were found to be excessively high and outside the range of -1 to 1. These indicators are C3 with a loading of 3.40 ("Do you feel comfortable and happy being able to reach the third space within a 10-minute walk?"), C2 with a loading of 1.74 ("Does the third space you frequently visit help you relax and enjoy yourself?"), and FA3 with a loading of 1.63 ("Does the third space you frequently visit make you feel special and important?").

Among the factor loadings within the acceptable range, the variables A1 ("Is the third space you frequently visit convenient and easily accessible?"), C1 ("Are the public spaces around your home and workplace well-planned?"), S1 ("Is the third space you frequently visit conducive to socializing and interaction with others?"), and FA1 ("Is the third space you frequently visit associated with consumption?") have the highest loadings, all at 1.00. The next highest loading is for variable A2 ("Is the third space you visit in close proximity to your home and workplace, with direct or one-transfer access to public transportation?"). These four variables indicate that people are quite satisfied with the current third spaces and public facilities in their living surroundings.

Table 9:The Satisfaction of the third place analysis result

Aspect	Influences Survey	Code	Factorloading
Accessible	Is the third place you frequently visit convenient and easily accessible?	A1	1.00
	Is the third place you visit located within a convenient distance from your home and workplace, accessible either directly or with a single transfer via public transportation?	A2	0.91
	Even if your preferred third place is located at a certain distance from your home or workplace, would you still choose to visit it due to the experiences and services it provides?	A3	0.23
	Is the third place you visit nearby and suitable for walking?	A4	Delete in final model

The variables S2 (0.53) and FA4 (0.66) suggest that people perceive the social aspect of third spaces as a means to establish emotional connections and a sense of belonging among individuals. They also recognize that third spaces contribute to a more diverse urban environment.

Table 10: The Satisfaction of the third place analysis result

Aspect	Influences Survey	Code	Factorloading
Comfortability	Are the public spaces around your home and workplace well-planned? (e.g., parks, sports centers, etc.)	C1	1.00
	Does the third place you frequently visit help you relax and bring enjoyment to your mood?	C2	1.74
	Do you believe that being able to reach the third place within a 10-minute walk is comfortable and brings a sense of happiness?	C3	3.40
	Do you believe that the aesthetic appeal of the facilities in the third place would influence your willingness to revisit it?	C4	0.25

Table 11: The Satisfaction of The Third Place

Aspect	Influences Survey	Code	Factorloading
Sociable	Is the third place you frequently visit conducive to conversations and interactions with others?	S1	1.00
	Do you believe that the third place is a space where you can establish emotional connections with others and foster a sense of belonging?	S2	0.53
	Is the third place you frequently visit open or available during nighttime hours, allowing you to visit it in the evening?	S3	Delete in final model

Table 12: The Satisfaction of The Third Place

Aspect	Influences Survey	Code	Factorloading
Functionality and Activities	Is the third place you frequently visit a place that requires spending or consumption?	FA1	1.00
	Does the third place you frequently visit offer affordable and favorable prices or benefits?	FA2	0.68
	Does the third place you frequently visit make you feel special and important?	FA3	1.63
	Do you believe that third places contribute to creating a more diverse urban environment?	FA4	0.66

5. Conclusion and suggestion

After the New Crown epidemic, the shape of the urban environment has been under scrutiny, and the issue of urban sustainability has been incorporated into the urban environment. The inclusion of the third space and public space is also helpful to the permeability of the boundary. Therefore, this study aims to investigate the demand for third space in micro-cities. In this issue, this paper uses the basic structure of micro-cities and third space patterns to collect the spatial satisfaction of the public through questionnaires, and then analyzes the satisfaction of third space by SEM structural model.

A. The Public's perception of The Third Place

In this study, only some respondents understood the definition of third space and its significance to urban planning without the author's explanation, so it can be seen that the public's awareness of third space is relatively weak; on the other hand, the respondents said that the existing planned space is quite perfect, and some respondents are still less satisfied with third space due to its accessibility.

B. The desire of the population to stay in The Third Place:

In this study, the variable A2 in the questionnaire, "Even if your preferred third space is a certain distance away from your home or workplace, would you still choose to go there because of the feelings and services it provides? Therefore, in order to make people stay in the third space, we know that the space should be designed to stimulate people to interact and communicate with each other. In addition, in C4, it is mentioned that "Do you think the aesthetics of the third space will affect your willingness to visit again? Although the negative factor in the SEM structural analysis was very low, 50% of the participants rated their satisfaction with this question as a high score of 5. In addition, this study suggested that the factor loadings of two of the constructs of comfort as one of the constructs were much higher than the expected range.

C. The willingness of the public to visit The Third Space again:

The SEM structural analysis shows that accessibility (the significance of variables A1 and A2) is still the most important thing to the public, and not all living spaces can be moved by public transportation. In 2020, the Institute for Transportation and Development Policy (ITDP) proposed the "micro-mobility" model, which is defined as micro-mobility by walking or bicycle (any mobility device with a maximum speed of less than 25 km/h), etc. In this study, Variable S2 shows that most people really think that the third space can connect with others and establish a sense of belonging. In this way, these micro-spaces can not only serve as a place for the development of the third space function in the micro-city, but also as a permeable boundary in the city, achieving a real balance between planning and actual use. In this way, these micro-spaces can not only serve as a third spatial function in the micro-city, but also as a permeable boundary in the city, achieving a real balance between planning and actual use.

In summary, this study suggests that the third space in the micro-city can first make people more aware of the concept of third space and efficiently pursue their own rights to quality of life, then increase people's stay time by planning spaces with communication and interaction, greenery or local characteristics, and combine with micro-transportation in the micro-city to build micro-spaces in the city, so that the effectiveness of the third space can be effectively utilized to create a spatially diverse and inclusive urban space.

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