

Effects of Urban Parks on Resident Use Behaviors and Anxiety Relief

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1 Questionnaire for Park Users

1.1 Demographic Characteristics

Variable	Description	Response options
Gender	Male; female; other	Single choice
Age	Respondent's age group	<18; 18 ~ 29; 30 ~ 44; 45 ~ 59; ≥60
Education level	Highest level of education completed	Middle school; high school; bachelor; master; doctorate
Occupation	Main employment status	Student; worker; office employee; retired; other
Residence district	Current living district in Qingdao	Chengyang; Shinan; Shibei; Laoshan; other
Frequency of park visits	Average frequency of visiting urban parks	Daily; several times a week; weekly; monthly; occasionally
Duration of stay	Average time spent per visit	< 30 min; 30 ~ 60 min; 1 ~ 2 h; > 2 h

1.2 Landscape Quality Evaluation

Respondents evaluated the perceived quality of nine spatial environmental dimensions on a five-point Likert scale (1 = very poor, 5 = very good), based on their spatial experience during park use.

Current location: _____

Dimension	Example	Description	Scale
Accessibility	It is easy to reach and move within the park	Reflects the convenience of entrances, pathways, and overall accessibility	1 ~ 5
Green landscape	The amount and diversity of vegetation make me feel relaxed	Evaluates greenery coverage, plant diversity, and visual comfort	1 ~ 5
Water landscape	The presence of water makes the environment more pleasant	Assesses water quality, aesthetic value, and sound of water	1 ~ 5
Architectural quality	The design and maintenance of built structures are good	Includes pavilions, bridges, and shelters	1 ~ 5
Pavement quality	Walking surfaces are clean and comfortable	Relates to surface flatness, texture, and maintenance	1 ~ 5
Public facilities	There are sufficient benches, lighting, and restrooms	Evaluates amenity completeness and usability	1 ~ 5
Color perception	The color harmony of plants and facilities is visually comfortable	Reflects color balance and aesthetic coherence	1 ~ 5
Soundscape	The surrounding sounds are pleasant and not disturbing	Includes natural sounds and noise control	1 ~ 5
Cultural characteristics	The park reflects local culture and identity	Refers to sculptures, cultural symbols, or thematic design	1 ~ 5

1.3 User Behaviors

Variable	Description	Example options	Other
Main activity type	Primary activity engaged in during visit	Relaxation; exercise; social interaction; nature observation; passing through	Leave blank for respondent's choice
Activity location	Typical area used in the park	Square; lawn; path; waterfront; pavilion	
Activity time duration	Average time duration of the main activity	<30 min; 30 ~ 60 min; 1 ~ 2 h; > 2 h	
Companionship	Whether activities are done alone or with others	Alone; family; friends; organized group	
Visit motivation	Main reason for visiting the park	Recreation; health; socializing; aesthetic enjoyment; habitual use	

1.4 Anxiety State: State-Trait Anxiety Inventory (STAI)

It consists of 40 items, including:

State Anxiety Inventory (SAI): 20 items measuring how the respondent feels “right now, at this moment.”

Trait Anxiety Inventory (TAI): 20 items assessing how the respondent “generally feels.”

Each item is rated on a 4-point Likert scale from 1 (not at all) to 4 (very much so).

Subscale	Purpose	Number of items	Example items	Response scale	Score range	Interpretation
SAI	Measures transient or situational anxiety reflecting immediate emotional reactions (e.g., tension or calmness)	20	<ul style="list-style-type: none"> · I feel calm · I feel tense · I am relaxed 	1 ~ 4	20 ~ 80	Higher scores indicate greater current anxiety, sensitive to short-term environmental or contextual factors
TAI	Measures enduring anxiety tendencies as a stable personality trait	20	<ul style="list-style-type: none"> · I worry too much over something that really doesn't matter · I am content 	1 ~ 4	20 ~ 80	Higher scores indicate greater chronic or personality-based anxiety, relatively unaffected by short-term environmental stimuli
Total STAI	Sum of SAI and TAI scores	40	—	—	40 ~ 160	

NOTE

The STAI was sourced from the American Psychological Association (APA).

1.5 Additional Comments

Open-ended question:

“Please share any comments or suggestions about your experience in the urban parks and how they influence your mood or stress levels.”