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Landscape Art Installations in Urban Parks: Enhancing Elderly Well-Being Through Importance–Performance Analysis

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ABSTRACT

Many countries have incorporated the design of landscape art installations in urban parks to increase the diversity of park landscapes and enrich the activities of visitors within the park. The main visitors to urban parks are the elderly. However, in urban areas, the lack of public resources limits the opportunities for the elderly to participate in physical exercise and social and recreational activities. Urban parks, as important public spaces, are crucial to the physical and mental health and well-being of the elderly. Most researchers have investigated the impact of urban park recreational spaces on the elderly, but few have examined the impact of landscape art installations in urban parks on the happiness of the elderly. Therefore, this study used importance-satisfaction analysis to quantitatively assess the impact of four elements of landscape art installations in urban parks on the elderly. Through a questionnaire survey of 401 elderly people, the importance and satisfaction of landscape art installations in urban parks were evaluated. In terms of data analysis, SPSS statistical software was used to process the questionnaire data, calculate the importance and satisfaction scores of each installation element, and compare the differences between the two to determine the elements that need improvement. The findings provide evidence-based guidance for age-friendly renewal practices of landscape art installations in urban parks in Shanghai, contributing to improved satisfaction of the elderly with the use of urban park landscape art installations, and enhancing the happiness of the elderly.

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1. INTRODUCTION

With global population ageing, enhancing the well-being of the elderly has become a priority. The UN projects that by 2030, one-sixth of the world's population will be 60 or older, rising from 1 billion in 2020 to 1.4 billion, and reaching 2.1 billion by 2050; those aged 80+ will triple to 426 million (WHO, 2024). This demographic trend highlights the urgent need to adapt urban spaces to better support the elderly's daily activities, social participation, and overall well-being.

Urban parks not only provide ecological and aesthetic benefits but also promote physical and mental health (Li, 2022). The NRPA (2020) identifies the elderly as a key user group, and the WHO (2022) emphasises age-friendly public spaces as essential. However, existing studies have largely examined urban parks as holistic environments, with comparatively limited attention given to the influence of specific spatial elements within parks on elderly well-being.

Landscape art installations have emerged as effective tools to enhance spatial quality and urban renewal (He et al., 2021). Nighttime installations can evoke positive emotions (Chen et al., 2023); immersive audio-visual works foster restorative experiences and social cohesion (Masullo et al., 2021), and examples like Appearing Rooms (London) and Mirror Pool (Bradford) show the value of interactive installations (Afonso & Schieck, 2019).Despite these contributions, empirical evidence focusing specifically on elderly users' perceptions of landscape art installations remains relatively limited, particularly in terms of how different installation attributes align with elderly needs and expectations.

Based on Maslow's hierarchy of needs, this study develops a five-dimensional evaluation framework—physiological, safety, love and belonging, esteem, and self-actualisation—to assess how landscape art installations meet elderly needs. Questionnaire data from Shanghai's urban parks, analysed via Importance–Performance Analysis (IPA), identify key strengths and areas for improvement, informing strategies for age-friendly public spaces. The findings are intended to provide empirical evidence and practical guidance for age-friendly urban park renewal and the sustainable development of public spaces.

2. LITERATURE REVIEW

Maslow's (1943, 1954) hierarchy of needs offers a framework to understand elderly needs across five levels: physiological, safety, social, esteem, and self-actualization. Functional decline and changing social roles make the elderly more sensitive to physiological and safety needs and reliant on environmental support for social, esteem, and self-actualization needs (Perek-Białas & Kazak, 2022; Zhou et al., 2022). Landscape art installations in urban parks can address these multi-level needs, enhancing satisfaction and well-being (Marston et al., 2021; Lee et al., 2021; Kimic & Polko, 2022).

2.1 Physiological needs

Physiological needs involve the most basic human requirements, such as air, food, rest, and health (Maslow, 1943). Ageing leads to reduced physical functions and increased environmental sensitivity (McIntosh et al., 2021; Zheng et al., 2022). In parks, designs combining art and nature can alleviate physiological stress. Fragrant plants and sculptures stimulate the olfactory sense and stabilise emotions

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(Ganoo-Fletcher, 2024); multi-textured walls and pavements enhance tactile perception (Assisted Living Locators, 2024); and sound installations and fountains regulate microclimate and promote relaxation (Better Homes & Gardens, 2023; Chun-xia et al., 2024). Clean, quiet surroundings further improve comfort (Onose et al., 2020). Thus, sensory stimulation and environmental quality are key to meeting elderly physiological needs.

2.2 Safety Needs

Safety needs concern protection and stability often prioritised by the elderly (Maslow, 1943). Irregular ground and unclear pathways increase fall risks, emphasizing the need for stable surfaces and directional cues (Kimic & Polko, 2022; Choryński et al., 2022). Anti-slip materials improve safety (Pramitasari et al., 2021), while artistically designed handrails enhance comfort (Mendrofa et al., 2023). Adequate lighting, such as path-sensing or light-sculpture systems, increases spatial confidence (Luo et al., 2023). Shade and shelter structures meet both aesthetic and climatic needs (Mücke & Litvinovitch, 2020), and semi-enclosed forms mitigate wind exposure (Munenzon & Gálvez, 2024). These strategies underscore safety as a prerequisite for trust and comfort in elderly park experiences.

2.3 Social Needs

When basic needs are satisfied, the elderly seek belonging and interaction (Maslow, 1943). Retirement and shrinking networks heighten dependence on public spaces for social contact (Fagerholm et al., 2020). Landscape art installations provide opportunities for encounters and communication through enclosed seating, shared pavilions, and face-to-face layouts (Zhu et al., 2023; Jiang et al., 2022). Interactive light or sound installations promote shared experiences (Chang et al., 2020; Kabisch et al., 2021), while artworks reflecting local memories evoke emotional resonance (Munenzon & Gálvez, 2024; Lopez & Santagati, 2019). Intergenerational installations also foster cross-age engagement (Giusti et al., 2021). Spatial configuration, interactivity, and cultural symbolism are thus key to supporting elderly social needs.

2.4 Esteem Needs

Esteem needs concern, recognition and respect (Maslow, 1943). Ageing increases vulnerability to marginalization, making social acknowledgment critical (Silva et al., 2023). Public art enhances identity, especially when installations reflect community history and culture (Zhang et al., 2023; Roe & McCay, 2020). Symbolic installations strengthen social memory and intergenerational dialogue (Munenzon & Gálvez, 2024). Barrier-free designs, clear sightlines, and accessible seating also convey respect (Huang et al., 2024). Moreover, participatory art engaging the elderly as co-creators enhances their sense of dignity (Clarke et al., 2022; Liu et al., 2020). Cultural expression, environmental consideration, and participatory mechanisms collectively fulfil esteem needs.

2.5 Self-Actualization Needs

Self-actualization represents the pursuit of potential and spiritual fulfilment (Maslow, 1943). As life pace and roles change, the elderly increasingly seek spiritual growth (Yao et al., 2019; Brown & Henkin, 2018). Participation in artistic creation boosts self-esteem and achievement, with installations offering inclusive creative platforms such as mural walls, sculpture co-creation, and community art festivals

(Darvishpoor-Kakhki et al., 2019; Phinney et al., 2014). Interaction with nature through ecological sculptures or plant mazes strengthens emotional and aesthetic engagement (Boffi et al., 2021; Sugiyama et al., 2018). Collective creation and cultural identity installations further reinforce belonging and fulfilment (Nyaiyonga, 2024; Clarke et al., 2022). These aspects reveal the integrative role of art, nature, and culture in supporting elderly self-actualization.

Existing research indicates that landscape art installations enhance the elderly' wellbeing across multiple dimensions of need; however, most studies remain confined to examining singular design features and predominantly rely on qualitative analysis and descriptive methodologies. Few investigations have systematically assessed the elderly's relative perceptions of importance and satisfaction towards different installation attributes within a unified evaluation framework. Consequently, there exists a lack of empirical evidence to identify priority areas for age-friendly adaptations in urban park landscape art installations from the perspective of elderly users.

3. METHODS

Equations and formulae should be typed and numbered consecutively with Arabic numerals in parentheses on the right-hand side of the page (if referred to explicitly in the text). They should also be separated from the surrounding text by one space. Eq. (1) shows the sample of equation position in a manuscript. If you chose to use the Equation Editor, please ensure that the manuscript is saved using .docx format (rather than .doc), and Compatibility Mode is turned off.

3.1 Study Site Selection

Shanghai was selected as the study context due to its rapidly ageing population and extensive development of urban parks incorporating landscape art installations, making it a representative case for examining age-friendly public space design.

Yuanxianghu Park in Shanghai was chosen as the survey site, focusing on elderly visitors aged 60 and above. As a comprehensive urban park in Jiading New City, it serves key ecological, recreational, and cultural functions and is important for exercise, leisure, and social interaction among the elderly.

The park features interactive landscape art installations enhancing spatial experience, including a smart walking path with responsive lighting, a sensor-activated fog system, a musical fountain, waterside boardwalks and bridges, and night-time projections. These installations support aesthetics, interactivity, and the multi-level needs of the elderly, providing an empirical basis for IPA analysis using Maslow’s hierarchy of needs. Importance–Performance Analysis (IPA) was adopted because it allows for a direct comparison between elderly users’ expectations and their actual experiences, making it particularly suitable for identifying priority areas for age-friendly improvement in public space design.

Despite its contributions, this study has several limitations. First, the empirical data were collected from a single urban park in Shanghai, which may limit the generalisability of the findings to other urban contexts. Second, the IPA approach relies on self-reported perceptions, and future studies could incorporate behavioural data or comparative multi-city analyses to strengthen external validity.

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3.2 Questionnaire Design

The satisfaction evaluation questionnaire for urban park landscape art installations is designed based on Maslow's hierarchy of needs, focusing on five core needs of the elderly: physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualisation needs. The questionnaire first collects basic demographic information, including gender, age, health status, mode of arrival at the park, and frequency of visits. It then designs items around these five need dimensions to measure the elderly's perceptions and satisfaction with the park's landscape art installations at different levels.

3.3 Questionnaire Reliability and Validity Testing and Factor Analysis

Prior to the formal survey, a pilot questionnaire was conducted among 40 elderly visitors to test the applicability of the language, reading level, and format. The results indicated that the questionnaire was generally feasible. During the formal survey, 425 questionnaires were distributed, and 401 valid questionnaires were collected, with an effective response rate of 94.4%, meeting the sample size requirement.

According to the reliability analysis results shown in Table 1, the overall Cronbach's α coefficient for the scale was 0.910. The validity test results showed that the KMO sampling adequacy value was 0.910, and the Bartlett's test of sphericity had an approximate chi-square value of 6546.954 ($df = 561$, $p < 0.000$), indicating strong correlations among the variables and confirming that the data were suitable for factor analysis.

4. RESULTS AND ANALYSES

4.1 Importance–Performance Analysis

Importance-Performance Analysis (IPA), proposed by Martilla and James (1977), compares perceived importance of attributes with actual satisfaction, as satisfaction declines when expectations and experiences diverge (Hughes, 1991). Cardozo (1965) introduced customer satisfaction to marketing, later expanded by Pizam (1978) for comprehensive evaluation of landscapes, environments, and leisure services.

As primary users of urban parks, the elderly have increasing demands for space and facilities. To quantify their perceptions of landscape art installations, this study developed an IPA-based evaluation index system covering five need levels—physiological, safety, love and belonging, esteem, and self-actualisation further refined into 17 indicators to measure both experience and expectations.

After consulting expert opinions, conducting hierarchical analysis, and discussing within the research team, the initially selected index system was revised, and weights were assigned to the evaluation indicators at each level. Ultimately, a satisfaction evaluation index system for landscape art installations in urban parks in Shanghai was constructed, consisting of 5 elemental-level evaluation indicators and 17 indicator-level evaluation indicators (Table 1).

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Table 1. Satisfaction Evaluation Index System for Landscape Art Installations in Urban Parks in Shanghai

Target Layer	Elemental Layer	Indicator Layer	Loading Factor	Eigenvalue	Cumulative Variance Contribution Rate
A Landscape Art Installation in Shanghai City Park	B1 Comfort	C1 Olfactory Experience	0.824	6.987	41.099
		C2 Tactile Experience	0.811		
		C3 Auditory Experience	0.78		
		C4 Microclimate Regulation	0.659		
	B2 Safety	C5 Ground and Structural Stability	0.695	2.426	55.371
		C6 Lighting and Spatial Guidance System	0.799		
		C7 Shelter from Rain and Safety Prompts	0.661		
	B3 Social Interactivity	C8 Promoting Social Interaction	0.621	1.388	63.535
		C9 Creating a Sense of Belonging	0.639		
		C10 Enhancing Community Cohesion	0.668		
	B4 Cultural Respect	C11 Inspiring Pride and a Sense of Fulfilment	0.667	1.085	69.97
		C12 Encouraging Creativity and Self-Expression	0.673		
		C13 Conveying a Sense of Value and Recognition	0.688		
	B5 Self-Actualization	C14 Creative Expression	0.677	0.546	73.131
		C15 Interaction with Nature	0.64		
		C16 Collaborative Participation	0.665		
		C17 Cultural Identification	0.717		

Source: Author, 2025

Table 1 shows the satisfaction evaluation index system for Shanghai's urban park landscape art installations, developed via expert consultation, hierarchical analysis, and team discussion. The system comprises five core dimensions: Comfort (B1), Safety (B2), Social Interaction (B3), Cultural Respect (B4), and Self-Actualization (B5), with a cumulative variance contribution of 73.131%, indicating strong structural validity.

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Comfort (B1, eigenvalue 6.987, variance 41.099%) covers olfactory, tactile, and auditory experiences and microclimate regulation, forming the basis of perceptual satisfaction (loadings 0.659–0.824). Safety (B2, eigenvalue 2.426, cumulative 55.371%) includes ground stability, lighting, guidance, and shelter (loadings 0.661–0.799). Social Interaction (B3, eigenvalue 1.388, cumulative 63.535%) focuses on interaction, belonging, and community cohesion (loadings 0.621–0.668). Cultural Respect (B4, eigenvalue 1.085, cumulative 69.970%) emphasizes respect, cultural expression, and traditional identification (loadings 0.667–0.688). Self-Actualization (B5, eigenvalue 0.546, cumulative 73.131%) highlights creative expression, collaboration, and cultural identity (loadings 0.655–0.717).

Drawing on the robust hierarchical system, studies indicate that elderly satisfaction evolves from comfort to safety and towards higher order psychosocial aspects namely the social interaction, cultural respect and self-actualisation.

Table 2. Summary of the Mean Values of Importance and Satisfaction for Indicator-Level Evaluation Indicators (N=401)

Elemental Level	**Indicator Level**	**Importance**			**Satisfaction**			**I-P**	**T-value**	**P**
		M	**SD**	**Rank**	**M**	**SD**	**Rank**			
B1 Comfort	C1 Olfactory Experience	3.99	0.973	9	3.59	1.117	6	0.40	5.607	0.000
	C2 Tactile Experience	3.84	1.019	17	3.47	1.259	16	0.37	5.343	0.000
	C3 Auditory Experience	4.04	0.989	6	3.55	1.157	9	0.49	6.426	0.000
	C4 Microclimate Regulation	3.98	0.983	11	3.64	1.135	3	0.34	4.801	0.000
B2 Safety	C5 Ground and Structural Stability	4.12	0.974	2	3.56	1.126	8	0.56	8.16	0.000
	C6 Lighting and Spatial Guidance System	4.09	0.965	3	3.50	1.175	13	0.59	8.904	0.000
	C7 Shelter from Rain and Safety Prompts	4.09	0.956	4	3.53	1.249	11	0.56	8.195	0.000
B3 Social Interactivity	C8 Promoting Social Interaction	4.13	0.941	1	3.51	1.156	15	0.62	8.641	0.000
	C9 Creating a Sense of Belonging	3.96	0.996	13	3.59	1.132	5	0.37	5.364	0.000

	C10 Enhancing Community Cohesion	3.89	1.080	15	3.40	1.244	17	0.49	7.044	0.000
B4 Cultural Respect	C11 Inspiring Pride and a Sense of Fulfillment	3.96	0.981	14	3.64	1.143	2	0.32	4.349	0.000
	C12 Encouraging Creativity and Self-Expression	3.98	0.976	12	3.57	1.143	7	0.41	5.822	0.000
	C13 Conveying a Sense of Value and Recognition	3.98	0.979	10	3.53	1.129	12	0.45	6.472	0.000
B5 Self-Actualization	C14 Creative Expression	4.06	0.944	5	3.54	1.179	10	0.52	7.298	0.000
	C15 Interaction with Nature	4.03	0.988	7	3.63	1.189	4	0.40	5.727	0.000
	C16 Collaborative Participation	3.85	1.033	16	3.49	1.223	14	0.38	5.582	0.000
	C17 Cultural Identification	4.01	1.006	8	3.70	1.136	1	0.31	4.186	0.000

Source: Author

Based on the results in Table 2, the elderly generally show a high level of agreement with the 17 evaluation indicators, with 15 items having mean values of importance and satisfaction above 3.5. This indicates that respondents perceive landscape art installations in urban parks as valuable in both physiological and psychological aspects. However, indicators related to sensory and emotional experiences scored relatively lower, suggesting room for improvement in these areas.

In the comfort dimension, the elderly attach moderate importance to olfactory and auditory experiences and place higher value on microclimate comfort, while tactile experience shows the lowest satisfaction, indicating the need for better material and texture design. In terms of safety, ground stability, lighting, and protective facilities are highly valued but show moderate satisfaction, implying that design refinements are needed to enhance perceived safety and accessibility.

For social interaction, “promoting social interaction” is the most valued indicator yet has low satisfaction, reflecting a gap between expectations and experience. “Creating a sense of belonging” performs better, showing that installations can foster emotional attachment, though community cohesion remains weak.

In the respect and cultural identification dimension, the elderly report high satisfaction with cultural symbolism and pride but expect more emotional resonance in visual and interactive design. Indicators of self-actualization such as creative expression and interaction with nature show high importance and satisfaction, demonstrating their contribution to psychological and emotional well-being.

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Overall, the elderly's perception centers on three core dimensions: safety, social interaction, and cultural identification. Safety and interaction exhibit a "high expectation–medium experience" gap, while cultural identity and natural interaction yield higher satisfaction. Future design strategies should strengthen interactivity, inclusiveness, and safety perception, while deepening cultural narratives and natural integration to enhance both functional and spiritual experience.

4.2 Descriptive Analysis of the Importance and Satisfaction of Elemental-Level Evaluation Indicators

The mean values of the importance and satisfaction of the elemental-level evaluation indicators for urban parks in Shanghai are shown in Table 3.

Table 3. Summary of the Mean Values of Importance and Satisfaction for Elemental-Level Evaluation Indicators (N=401)

Elemental Level	Importance			Satisfaction			I-P
	M	SD	Rank	M	SD	Rank	
B1 Comfort	3.96	0.991	5	3.56	1.167	3	0.40
B2 Safety	4.1	0.965	1	3.53	1.183	4	0.57
B3 Interactivity	3.99	1.006	3	3.50	1.177	5	0.49
B4 Cultural Respect	4.01	0.972	2	3.57	1.173	2	0.44
B5 Self-Actualization	3.98	1.324	4	3.59	1.181	1	0.39

Source: Author

Based on Table 4, the ranking of the five elemental-level indicators by importance is: Safety (4.10) > Cultural Respect (4.01) > Interactivity (3.99) > Self-Actualization (3.98) > Comfort (3.96). Safety has the highest mean, indicating that the elderly are most concerned with the use safety and environmental protection of landscape art installations, followed by psychological and emotional factors such as cultural respect and social interaction.

For satisfaction, the ranking is: Self-Actualization (3.59) > Cultural Respect (3.57) > Comfort (3.56) > Safety (3.53) > Interactivity (3.50). Self-actualization shows the highest satisfaction, reflecting positive perceptions of spiritual, emotional, and self-expressive experiences, while interactivity has the lowest, indicating unmet expectations for participation.

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Based on the above results, the elderly place high importance on safety and social interaction but experience notable gaps. Evaluations of personal perception, self-actualization, and comfort are more balanced. Future design should prioritize safety and interactive features, employing human-centered and inclusive strategies to enhance emotional connection, trust, and overall satisfaction.

5. DISCUSSION ON THE IPA QUADRANT

To further identify the evaluation priorities and improvement directions of the elderly regarding landscape art installations in urban parks, this study constructed a quadrant matrix based on Importance–Performance Analysis (IPA). Using the overall mean value of importance (3.98) as the horizontal axis and the overall mean value of satisfaction (3.56) as the vertical axis, the indicators are divided into four quadrants: ① Important and Satisfied (Maintain Area); ② Important but Unsatisfied (Priority ImprovementArea);③Unimportant and Unsatisfied (Low-Priority Improvement Area); ④ Unimportant but Satisfied (Sustain Area). The specific distribution is shown in Figure1.

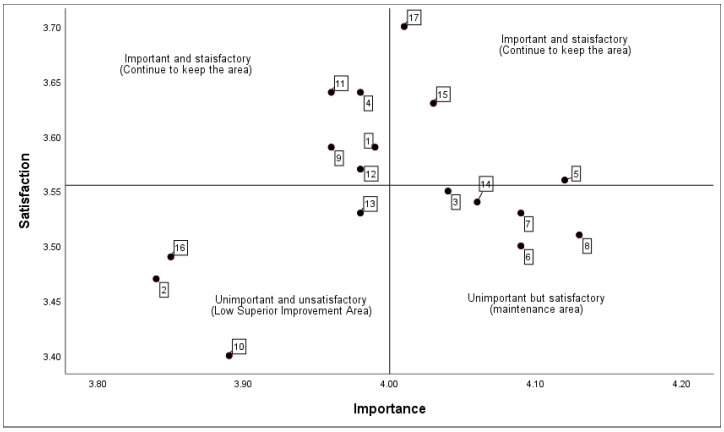

Figure 1: IPA Four-Quadrant Chart
Source: Author

The IPA results classify elderly satisfaction with Shanghai's urban park landscape art installations into four quadrants.

5.1 Quadrant I: High Importance- High Satisfaction

Indicators above the mean in both importance and satisfaction—olfactory experience (C1), microclimate regulation (C4), pride and fulfilment (C11), creativity and self-expression (C12), interaction with nature (C15), and cultural identification (C17)—highlight strong contributions to sensory comfort, cultural resonance, and emotional well-being.

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5.2 Quadrant II: High Importance–Low Satisfaction

Indicators with high importance but low satisfaction—ground and structural stability (C5), lighting and guidance systems (C6), shelter and safety prompts (C7), and promotion of social interaction (C8)—are priority areas for improvement, reflecting gaps in safety and interactivity.

5.3 Quadrant III: Low Importance–Low Satisfaction

Indicators with low importance and satisfaction—tactile experience (C2), community cohesion (C10), and collaborative participation (C16)—have limited impact and can be gradually improved.

5.4 Quadrant IV: Low Importance–High Satisfaction

Indicators with low importance but high satisfaction—auditory experience (C3), creative expression (C14), and sense of belonging (C9)—perform well and should be maintained.

From an integrated theoretical perspective, the IPA results reveal that the elderly place the greatest importance on safety and interactivity, yet satisfaction in these areas remains relatively low. In contrast, sensory experiences, cultural identification, and interaction with nature demonstrate more balanced performance and should be sustained and strengthened. This pattern reflects the hierarchical structure proposed by Maslow, in which unmet lower-level needs may limit the realisation of higher-level experiential benefits.

6. CONCLUSIONS

This study examined elderly users' perceptions of landscape art installations in urban parks through an Importance–Performance Analysis framework grounded in Maslow's hierarchy of needs. At the elemental level, safety emerged as the most important dimension for elderly users, followed by cultural perception, interactivity, self-actualisation, and comfort. Although safety and interactivity were rated as highly important, their comparatively lower satisfaction levels indicate that current landscape art installations do not fully meet elderly expectations in terms of lighting quality, spatial guidance, physical stability, and opportunities for social interaction. In contrast, higher satisfaction associated with self-actualization and cultural perception suggests that existing installations perform more effectively in supporting cultural identity, emotional fulfilment, and psychological well-being.

At the indicator level, attributes related to interactive experience, lighting and spatial guidance, safety cues, and social interaction were concentrated in the "important but unsatisfactory" quadrant, identifying them as priority areas for improvement. Meanwhile, tactile experience, collaborative participation, and community cohesion were perceived as lower-priority attributes that may be gradually enhanced. Indicators associated with olfactory experience, microclimate regulation, cultural identity, and interaction with nature demonstrated relatively balanced performance, providing a stable foundation for sensory comfort and emotional resonance.

Overall, the findings indicate a shift in elderly users' expectations from passive aesthetic appreciation and basic rest toward active participation, social communication, and the pursuit of meaning and identity in

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public spaces. In response to these changing needs, future optimisation of landscape art installations in urban parks should focus on three key aspects: (1) strengthening safety performance through improved lighting systems, accessible pathways, and protective facilities; (2) enhancing interactivity by incorporating inclusive and socially oriented design mechanisms; and (3) deepening cultural and emotional expression through closer integration with local context and natural elements. These strategies offer empirical guidance for age-friendly urban park design and support the sustainable enhancement of elderly well-being and quality of life.

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8. CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

9. AUTHORS' CONTRIBUTIONS

All authors contributed to the writing of the article and have read and approved the final manuscript.

10. DECLARATION OF GENERATIVE AI IN THE WRITING PROCESS

AI tools (e.g, ChatGPT, Grammarly) were used for drafting, assistance, paraphrasing and grammar checking. All content was critically reviewed and edited by researcher.

11. DATA AVAILABILITY/SUPPLEMENTARY MATERIALS

The datasets used and/or analysed during this study are available from the corresponding author upon reasonable request

12. ETHICS STATEMENT

The authors declare that this research did not involve human or animal subjects

13. REFERENCES

Afonso, A. G. and Schieck, A. F. G. (2019). Play in the smart city context: exploring interactional, bodily, social and spatial aspects of situated media interfaces. *Behaviour &Amp; Information Technology, 39*(6), 656-680. https://doi.org/10.1080/0144929x.2019.1693630

Braun, V., & Clarke, V. (2022). Conceptual and design thinking for thematic analysis. *Qualitative Psychology, 9*(1), 3–26. https://doi.org/10.1037/qup0000196

Chen, S., Fu, K., Yang, B., & Lian, X. (2023). Using light art installation in urban nightscapes to raise public awareness of carbon neutrality. *Science Communication, 45*(3), 414-427. https://doi.org/10.1177/10755470221147286

da Rosa, V., Herminia, M.,and Tonetto, L.M.(2023*) Designing therapeutic and social spaces for older adults facing Mild Cognitive Impairment: Priorities in spatial and furniture layout,* in De Sainz Molestina, D., Galluzzo, L., Rizzo, F., Spallazzo, D. (eds.), IASDR 2023: Life-Changing Design, 9-13 October, Milan, Italy. https://doi.org/10.21606/iasdr.2023.174.

He, H., Wu, M., & Gyergyak, J. (2021). Intervention and renewal— Interpretation of installation art in urban public space. *Pollack Periodica, 16*(3), 139-145. https://doi.org/10.1556/606.2021.00362

Hughes, K. (1991). Tourist satisfaction: A guided "cultural" tour in north queensland. *Australian Psychologist*, *26*(3), 166–171. https://doi.org/10.1080/00050069108257243

Kabisch, N., Qureshi, S., & Haase, D. (2015). Human–environment interactions in urban green spaces — A systematic review of contemporary issues and prospects for future research. *Environmental Impact Assessment Review,* 50, 25–34. https://doi.org/10.1016/j.eiar.2014.08.007

Kimic, K., & Polko, P. (2022). The Use of Urban Parks by Older Adults in the Context of Perceived Security. *International Journal of Environmental Research and Public Health*, *19*(7), 4184. https://doi.org/10.3390/ijerph19074184.

Lee, S. Falls associated with indoor and outdoor environmental hazards among community-dwelling older adults between men and women. *BMC Geriatr* **21**, 547 (2021). https://doi.org/10.1186/s12877-021-02499-x.

Li, D., Xu, H., Kang, Y., & Steemers, K. (2023). Systematic review: landscape characteristics correlated with physical activity of the elderly people. *Land , 12* (3), 605 https://doi.org/10.3390/land12030605

Li, J. (2022). The design and renovation for urban pocket park based on biophilic concept——A case of Larkin Street Park, Sydney, Australia. *Highlights in Science, Engineering and Technology*, *28*, 166-177. https://doi.org/10.54097/hset.v28i.4103

Luo, L., Zhang, Q., Mao, Y., Peng, Y., Wang, T., & Xu, J. (2023). A Study on the Soundscape Preferences of the Elderly in the Urban Forest Parks of Underdeveloped Cities in China. *Forests*, *14*(6), 1266. https://doi.org/10.3390/f14061266.

Marques, Bruno; McIntosh, Jacqueline; Kershaw, Chelsea (2019). *Healing spaces: improving health and wellbeing for the elderly through therapeutic landscape design.* Open Access Te Herenga Waka-Victoria University of Wellington. Journal contribution. https://doi.org/10.26686/wgtn.12413336.v1

Martilla, J. A., & James, J. C. (1977). Importance-Performance Analysis. *Journal of Marketing*, *41*(1), 77-79. https://doi.org/10.1177/002224297704100112

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–

396. https://doi.org/10.1037/h0054346

Maslow, A. H. (1954). The instinctoid nature of basic needs. *Journal of Personality, 22,* 326–347. https://doi.org/10.1111/j.1467-6494.1954.tb01136.x.

Masullo, M., Maffei, L., Pascale, A., Senese, V. P., De Stefano, S., & Chau, C. K. (2021). Effects of Evocative Audio-Visual Installations on the Restorativeness in Urban Parks. *Sustainability*, *13*(15), 8328. https://doi.org/10.3390/su13158328

McIntosh, Jacqueline; Marques, Bruno; Cornwall, Jon; Kershaw, Chelsea; Mwipiko, Rosemary (2021). *Therapeutic Environments and the Role of Physiological Factors in Creating Inclusive Psychological and Socio-Cultural Landscapes.* Open Access Te Herenga Waka-Victoria University of Wellington. Journal contribution. https://doi.org/10.25455/wgtn.15070287

National Recreation and Park Association (NRPA). (2020). *Engaging the elderly in parks and recreation.* National Recreation and Park Association. https://www.nrpa.org/publications-research

Onose, D. A., Iojă, I. C., Niță, M. R., Vânău, G. O., & Popa, A. M. (2020). Too Old for Recreation? How Friendly Are Urban Parks for Elderly People? *Sustainability*, *12*(3), 790. https://doi.org/10.3390/su12030790

Perek-Bialas, Jolanta and Skórska, Paulina and Maj, Milena and Kazak, Jan K. and Dikken, Jeroen and van Hoof, Joost, The Experienced Age-Friendliness in Two Polish Cities: In-Depth Analysis of the Views of Older Citizens. http://dx.doi.org/10.2139/ssrn.4780775

Pizam, A., Neumann, Y., & Reichel, A. (1978). Dimentions of tourist satisfaction with a destination area. *Annals of tourism Research, 5*(3), 314-322. https://doi.org/10.1016/0160-7383(78)90115-9

Silva, H., Fonseca, F., Rodrigues, A. *et al.* Engineering-Based Evaluation of Sidewalk Pavement Materials: Implications for Pedestrian Safety and Comfort. *Int. J. Pavement Res. Technol.* (2025). https://doi.org/10.1007/s42947-025-00588-3

World Health Organization. (2022). *WHO clinical consortium on healthy ageing 2021: report of consortium meeting held virtually, 5-6 November 2021*. World Health Organization..

World Health Organization. (2024). *Extending healthy ageing across the life course-connecting healthy development and healthy ageing: Report of the third Life Course Network meeting*, 28-30 November 2023. World Health Organization.

Zhang, L. (2022). *Ecological design and smart landscapes: Boosting the connection between scientific findings and design approaches with smart technologies* (Doctoral dissertation, University of Illinois at Urbana-Champaign). https://hdl.handle.net/2142/116239

Zhou, R., Zheng, Y.-J., Yun, J.-Y., & Wang, H.-M. (2022). The Effects of Urban Green Space on Depressive Symptoms of Mid-Aged and Elderly Urban Residents in China: Evidence from the China Health and Retirement Longitudinal Study. *International Journal of Environmental Research and Public Health*, *19*(2), 717. https://doi.org/10.3390/ijerph19020717