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Exploring the impact of urban green spaces on wellbeing in Prishtina, Kosovo

This article examines the impact of urban green spaces on wellbeing in Prishtina, Kosovo, using a quantitative approach. Data from 384 respondents, collected through stratified random sampling, were analysed using the principal component analysis and regression techniques. The findings reveal that quality and aesthetic appeal, and community connection are key predictors of perceived wellbeing, highlighting the importance of well-maintained visually appealing green spaces that foster social interaction. However, accessibility and availability, amenities

and functionality, and safety did not show significant relationships, reflecting contextual challenges in Prishtina. Policymakers should prioritize high-quality inclusive green spaces that support social connection while addressing spatial inequalities and governance gaps to enhance urban wellbeing.

Keywords: urban green spaces, wellbeing, accessibility, community connection, Prishtina

1 Introduction

Urban green space accessibility is vital for enhancing physical and mental wellbeing, with urban planning increasingly focusing on equitable distribution. Research shows that cumulative opportunity measures – such as the number of parks, total green space area, or variety of recreational spaces within walking distance – are more strongly linked to positive health outcomes than simple proximity metrics (Chen et al., 2020; Hsu et al., 2022). However, disparities persist: wealthier communities, such as northern neighbourhoods in Atlanta or affluent districts in Berlin and Paris, often benefit from higher park density, better maintenance, and safer green spaces than lower-income or marginalized areas (Buckland & Pojani, 2022; Chen et al., 2020; Hsu et al., 2022). The “15-minute city” model promotes accessibility by ensuring that services, including green areas, are within walking or cycling distance (Liu, Kwan et al., 2022). Nonetheless, many cities in South America, Africa, and Asia face challenges in achieving equitable access – such as informal settlements in Nairobi lacking nearby public parks, or high-density districts in São Paulo and Dhaka offering limited green infrastructure per capita (Long et al., 2022).

The quality of green spaces also significantly impacts health and social wellbeing. Well-maintained spaces with vegetation, biodiversity, cleanliness, and safety promote physical activity and reduce health risks such as obesity (Daniels et al., 2018; Knobel et al., 2020; Stessens et al., 2020). High-quality green spaces regulate microclimates, support biodiversity, and improve neighbourhood satisfaction (Semeraro et al., 2021). Socially, they encourage interaction and cohesion (Barrera et al., 2016). Planning assessments of vegetation cover and spa-

tial distribution support equitable green space development (Zhang et al., 2017; Giannico et al., 2021). Whereas links between the quality of green spaces and health require further study, culturally responsive designs such as varied soundscapes may enhance usability (Nguyen et al., 2021).

Green spaces also serve essential ecological and social functions. They mitigate heat, filter air pollutants, and support biodiversity (Kabisch et al., 2017; Daniels et al., 2018). As part of blue–green infrastructure, they help manage urban water and reduce flood risks (Mu et al., 2020). They facilitate physical activity, social interaction, and psychological restoration, which are key to urban liveability (Lee et al., 2015). Multifunctional, inclusive planning is vital in dense cities with limited space (Belmeziti et al., 2018; Hansen et al., 2017).

This study is distinct in centring on Prishtina, a fast-growing capital city in a post-communist context with acute green space shortages and planning limitations. Kosovo’s urban areas, particularly those in Prishtina, face persistent deficits in both the quantity and quality of green infrastructure. Prishtina provides only around 2.9 m² of public green space per capita, which is far below the WHO’s recommendation of 9 m², leaving many residents without adequate access to nature (UN-Habitat, 2019, 2020). In Prishtina, the main urban green spaces include Gërmia Park, City Park, Ulpiana Park, Dardania Park, and Tauk Bashqë Park. These parks vary in size, biodiversity, and accessibility. Gërmia Park is the largest and has the greatest biodiversity, whereas others such as Dardania Park are smaller and centrally located, but lack diversity and amenities (Balaj et al., 2022). There are also smaller green spaces around the city such as that in the Përmendorja area or the Bregu i Diellit neighbourhood (Figures 1 and 2).

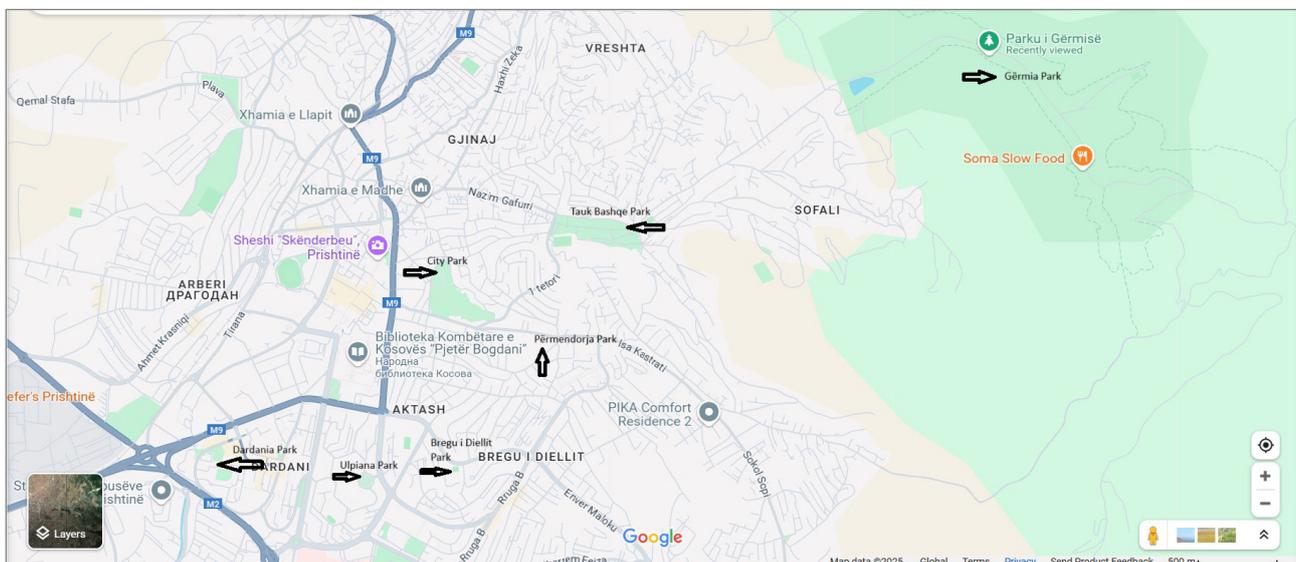


Figure 1: Location of urban green spaces studied in Prishtina (source: Google Maps).

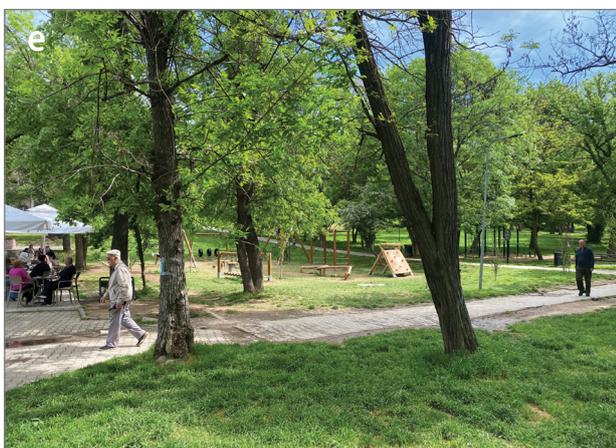
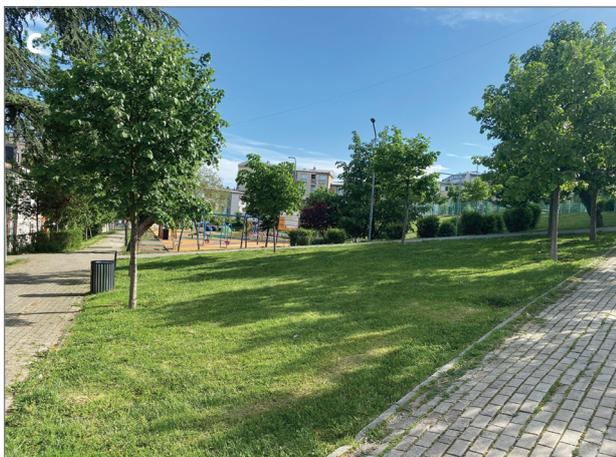
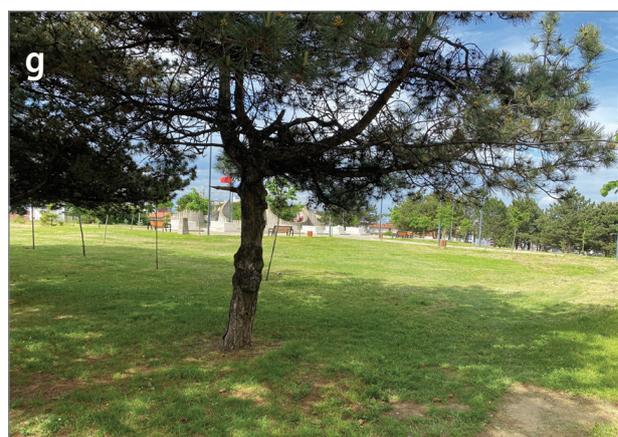


Figure 2: a) Gërmia Park; b) City Park; c) Ulpiana Park; d) Dardania Park; e) Tauk Bashqë Park; f) Bregu i Diellit Park; g) Përmendorja Park (photo: Hana Hoxha).



Available green spaces are unevenly distributed, often poorly maintained, and under pressure from unregulated urban development (Balaj et al., 2022). Environmental equity concerns are also rising; for example, Gërmia Park on Prishtina's periphery provides a large recreational area, but it remains inaccessible to many residents of dense inner-city neighbourhoods, which lack walkable alternatives (Kosovo Team UN, 2021; Open Government Partnership, 2024). These inequities are compounded by unregulated urban expansion, limited municipal planning capacity, and a lack of green-oriented zoning policies (Prishtina Insight, 2019; D4D, 2022). The effects are visible in rising urban heat exposure, increased air pollution, and limited opportunities for physical and social engagement. Although strategic efforts such as the Prishtina Green City Action Plan have acknowledged these challenges (City of Prishtina, 2021), empirical evidence on how residents experience urban green spaces remains scarce. This study addresses that gap by assessing how dimensions such as accessibility, quality, functionality, safety, and community connection influence perceived wellbeing and health in Prishtina, offering policy-relevant insights for more equitable and resilient urban planning in Kosovo and comparable post-communist countries. These structural issues are reflected in how residents perceive and use green spaces, providing the basis for this study.

By linking locally grounded insights to broader debates on urban equity, health, and resilience, the study contributes original, policy-relevant insights for cities facing similar developmental and environmental constraints. Based on the gaps identified in the literature and the urban dynamics of Prishtina, it investigates the following research question: How do multiple dimensions of urban green space – including accessibility and availability, quality and aesthetic appeal, amenities and functionality, safety, and community connection – affect residents' perceived wellbeing and health in Prishtina?

To address this question, the study formulates and empirically tests five hypotheses:

- H1: Accessibility and availability of urban green spaces positively influence perceived wellbeing and health.
- H2: Quality and aesthetic appeal of urban green spaces positively influence perceived wellbeing and health.
- H3: Amenities and functionality of urban green spaces positively influence perceived wellbeing and health.
- H4: Safety of urban green spaces positively influences perceived wellbeing and health.
- H5: Community connection fostered by urban green spaces positively influences perceived wellbeing and health.

1.1 Literature review

To systematically address the research question posed, the review is organized according to five hypotheses, corresponding to these dimensions, with a sixth section discussing broader health outcomes. Recent empirical studies from the Western Balkans provide a comparative lens to contextualize Prishtina's urban green space challenges.

Accessibility and availability are foundational to ensuring that urban green spaces serve all populations equitably. Ekkel and de Vries (2017) advocate for cumulative accessibility indicators, which take the total accessible green space into account and are more predictive of health benefits than simple proximity. Wang et al. (2015) underline the importance of both physical and subjective access factors: walkability, connectivity, safety perceptions, and cultural similarity. Socioeconomic disparities persist in green space provision across cities, with disadvantaged areas, such as parts of Kowloon or inner-city neighbourhoods around the globe, often facing limited access (Almohamad et al., 2018; Wei et al., 2022; Liu et al., 2022). Similar patterns appear in Sarajevo, where Tatlić et al. (2024) found public green space availability as low as 1.4 m² per capita, highlighting spatial inequalities despite overall high green coverage. Novi Sad shows similar challenges, with green infrastructure better represented in outer districts, whereas the city centre lacks functional and accessible spaces (Jevtić et al., 2021).

In terms of quality and aesthetic appeal, Stessens et al. (2020), Veinberga and Zigmunde (2019), and Tan et al. (2019) demonstrate that cleanliness, tranquillity, and landscaping are vital for increasing the number of visits and perceived satisfaction. Subiza-Pérez et al. (2019) highlight that multisensory richness (i.e., sound, texture, and seasonal changes) increases emotional attachment to green spaces. Sarajevo's forest parks dominate in size but are poorly maintained and often inaccessible (Tatlić et al., 2024), whereas in Belgrade visually appealing parks have been correlated with reduced stress and lower medication use (Vujčić et al., 2018). In Prishtina, Balaj et al. (2022) found that Gërmia among the four major parks (Gërmia, City Park, Tauk Bashqë, and Dardania) only Gërmia Park had a moderate diversity index (above 1.5), whereas Dardania Park scored only 0.68, indicating limited ecological richness and potentially reduced user satisfaction. Their study emphasizes that quality deficits in species diversity and plant composition affect both the aesthetic and ecological performance of parks in the city. These examples highlight how maintenance and perceptual quality mediate usage and mental health outcomes.

Functionality and amenities are equally critical. D'yachkova and Mikhailov (2023) stress that seating, lighting, and clear pathways are essential for inclusivity. Technological upgrades through urban facility management further enhance functionality and comfort (Abdelkarim et al., 2023). In Sarajevo, Tatlić et al. (2024) report that most urban green space types fall under the limited access category, with few community-specific functions or adaptable features, limiting their potential as multifunctional, inclusive spaces. Balaj et al. (2022) point to Prishtina's green areas as lacking adaptive infrastructure that accommodates the needs of families, the elderly, or persons with disabilities. Their findings highlight that functional limitations such as absence of playgrounds, accessible paths, and rest areas reduce the potential of urban parks to act as inclusive and community-oriented spaces. Prishtina's challenges echo these issues, with few amenities integrated in high-density areas (Bejtullahu, 2015).

Safety perceptions, often shaped by lighting, visibility, and environmental upkeep, also influence who uses green spaces. As Wang et al. (2015) and Tan et al. (2019) argue, safety concerns are magnified in vulnerable demographics. Integration of smart surveillance, lighting, and infrastructure (Abdelkarim et al., 2023) may address these deficits. Although Balkan literature tends to treat safety indirectly, Šuklje Erjavec et al. (2022) and Kozamernik et al. (2024) highlight successful models in Slovenia, where planning and public health sectors collaborate to create safer, inclusive parks. Balaj et al. (2022) do not directly address safety infrastructure in Prishtina's green spaces, but their findings about the dominance of decorative, rather than functional, vegetation suggest a preference for an aesthetic over practical design approach, which may neglect basic user safety concerns. This gap underscores the need for local empirical data on safety perceptions to inform inclusive park planning in Prishtina.

Community connection is a key outcome and driver of urban green space value. According to Kabisch et al. (2015) and Qin et al. (2021), parks that host events and informal interaction build trust and civic pride. Ward Thompson et al. (2016) and Rugel et al. (2019) link frequent urban green space use with reduced social isolation. In the post-communist context, Starczewski et al. (2024) find that well-maintained green spaces in high-density housing estates support ecological cohesion and urban branding. However, Noszczyk et al. (2023) caution that urban growth and infrastructure expansion continue to threaten green corridors in Polish cities, a trend that parallels the uncoordinated sprawl seen in Prishtina (Mejzini, 2015; Tahiri & Momirski, 2019). Balaj et al. (2022) underscore that, whereas parks such as City Park have historical and social significance for Prishtina's residents, their community-enhancing potential is limited by uneven vegetation distribution, aging

infrastructure, and lack of participatory planning. The authors argue that future design should integrate more inclusive and culturally resonant green elements to promote community interaction and wellbeing.

Beyond the five dimensions, the health benefits of green space exposure are well documented. Studies link green space availability to lower stress, anxiety, and depression (Callaghan et al., 2020; Kondo et al., 2018; Rugel et al., 2019). Urban green spaces also support cardiovascular health and physical activity, while helping mitigate urban heat and pollution (Jennings & Bamkole, 2019; Kabisch, 2019; Davvand et al., 2016; Davvand & Nieuwenhuijsen, 2018). Balaj et al. (2022) provide initial local evidence supporting these claims, noting that biodiversity-rich parks such as Gërmia promote psychological restoration and respiratory health, especially in contrast to heavily urbanized zones such as Dardania. However, their study also reveals a lack of structured health-monitoring tools or longitudinal data, which limits understanding of the long-term health impacts of urban green spaces in Prishtina. Despite their known benefits, many cities, including Prishtina, lack longitudinal evidence to fully quantify these impacts in local contexts – an important gap this study aims to address.

Spatial conditions are critical in determining how effectively urban green spaces promote human wellbeing. Key factors such as accessibility, proximity, scale, exposure, quality, and perceived characteristics significantly influence whether green spaces are used and whether they contribute to psychological restoration and public health. Numerous studies confirm that the optimal benefits of green spaces emerge when they are located within 30 to 1,000 m of users, with both proximity and cumulative availability showing a non-linear, inverted *U*-shaped relationship to life satisfaction (Bertram & Rehdanz, 2015; Labib et al., 2019; Jia et al., 2023). Finer spatial assessments, using neighbourhood-scale or multi-scale exposure frameworks, allow more accurate evaluations of how green space access relates to health outcomes (Labib et al., 2019; Jia et al., 2023). Equally important are qualitative aspects: natural features, biodiversity, soundscapes, perceived safety, and overall usability shape people's emotional and restorative responses to green environments (Fisher et al., 2020; Xu et al., 2025). The presence of amenities and thoughtful, inclusive design improves not only aesthetic appeal but also practical use for diverse urban populations (Lee et al., 2015; Russo, 2024).

Despite the clarity of these findings in the international literature, there remains a significant empirical gap in research focused on Prishtina. Even though Balaj et al. (2022) offer foundational data on vegetation diversity and spatial distribution in four of Prishtina's key parks, their analysis primarily focuses on the ecological perspective and does not comprehensively

address spatial accessibility, perceived quality, or health-related benefits. The city continues to lack integrative, evidence-based assessments that explore how spatial conditions, functional design, and user perceptions collectively shape wellbeing. Moreover, in contrast to cities such as Ljubljana, Belgrade, and Sarajevo, where recent studies have emphasized participatory planning, community engagement, and equitable infrastructure, the planning and policy environment in Prishtina remains underdeveloped. Lessons from these comparative contexts underscore the value of cross-sector collaboration and inclusive design, both of which are largely absent from green space development in Kosovo. Therefore, this study contributes a necessary, multidimensional, and user-centred analysis of how green space accessibility, aesthetics, functionality, safety, and community connection influence perceived health and wellbeing in Prishtina, addressing a key gap in both the local and regional literature and offering broader implications for equitable urban planning in post-communist settings.

2 Methodology

2.1 Research design

This study employs a quantitative correlational research design to explore the relationships between multiple dimensions of urban green space (i.e., accessibility, quality, amenities, safety, and community connection) and their perceived impact on resident wellbeing in Prishtina. Principal component analysis was used to examine the internal structure of the survey instrument and identify underlying components. Subsequently, multiple regression analysis was conducted to determine the dimensions of green space use that most significantly predict perceived health and wellbeing benefits.

The study uses a two-section questionnaire, following Grum and Temeljotov Salaj (2011). The first section includes demographic questions related to age, sex, and education. The second section assesses accessibility, quality, amenities, safety, community connection, and perceptions about the wellbeing and health impact of green spaces. The questionnaire comprises multiple sections, each with eight items measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). These sections assess various aspects of green spaces, including accessibility, quality, amenities, and their impact on personal wellbeing. The statements used in the questionnaire were developed by the authors based on the spatial conditions identified in the literature review and the hypotheses formulated at the beginning of the study.

The accessibility and availability section evaluates the ease of access to green spaces and their distribution across the city.

This includes items related to proximity to green spaces, the presence of multiple green spaces near residences, and whether these spaces are large enough to accommodate visitors. It also assesses the availability of public transportation and the presence of clear and safe walking paths.

The quality and aesthetic appeal section explores the condition, cleanliness, and visual appeal of green spaces. It evaluates maintenance, absence of litter and pollutants, and the health of trees and other plants. Moreover, it addresses whether green spaces provide a serene environment, have attractive landscape designs, and benefit from seasonal beauty. Items also assess the role of green spaces in enhancing the city's appearance.

The amenities and functionality section assesses the availability and functionality of facilities within green spaces, such as seating, activity areas (e.g., playgrounds and sports fields), and restrooms. It also examines the provision of clean drinking water, safety of amenities, sufficient lighting, clear pathways, and shaded areas for relaxation.

The wellbeing and health impact section examines how green spaces contribute to respondents' physical and mental health, stress reduction, community connection, and overall quality of life. It evaluates whether spending time in green spaces improves mood, clears the mind, and increases satisfaction with the living environment.

2.2 Sampling method

This study employs stratified random sampling to ensure the representativeness of Prishtina's population eighteen to sixty-five years old, as suggested by Jonker and Pennink (2010). The sample consisted of 384 respondents, distributed proportionally by sex, age, and education to match the city's population structure based on the 2024 census by the Kosovo Agency of Statistics. To achieve proportional representation, stratified quotas were applied during data collection, and respondent recruitment was adjusted in real time based on age, sex, and education group responses. This quota-based approach ensured that the final sample closely mirrored the population structure. Table 1 provides a breakdown of the sample structure. For example, men constitute 50.17% of the sample, reflecting their proportional representation in the population. Similarly, education levels from primary school to master's degree or doctorate were proportionally included.

The age groups from eighteen to sixty-five correspond to 68% of Prishtina's total population. Age groups younger than eighteen and those between sixty-five and eighty-five were excluded from the sample. In terms of education status, the active population in the eighteen to sixty-five age group was considered

Table 1: Structure of respondents in Prishtina.

Category	Respondents, <i>n</i> (%)	Prishtina population (18–65), <i>n</i> (%)
Sex		
Male	193 (50.17)	72,085 (50.17)
Female	191 (49.83)	71,598 (49.83)
Total	384 (100.00)	143,683 (100.00)
Age (years)		
18–34	157 (41.00)	59,076 (41.00)
35–55	169 (44.00)	62,650 (44.00)
56–65	58 (15.00)	21,957 (15.00)
Total	384 (100.00)	143,683 (100.00)
Education		
Primary school	72 (19.00)	27,300 (19.00)
Secondary school	153 (40.00)	57,473 (40.00)
Bachelor's degree	139 (36.00)	51,725 (36.00)
Master's or doctorate	20 (5.00)	7,185 (5.00)
Total	384 (100.00)	143,683 (100.00)

Source: Kosovo Agency of Statistics (2024).

for calculating the number of respondents in each stratum. The age group above sixty-five was not included in the final sample due to limited digital accessibility and low representation on Facebook (Hallakate, 2020), which was the primary data collection platform. Even though we recognize that older adults often face unique barriers to green space access, their exclusion was the result of a methodological constraint tied to the digital format of the survey.

Given that Prishtina's total population in the eighteen to sixty-five age group is 143,683 (Kosovo Agency of Statistics, 2024), the sample size of 384 respondents achieves a 5% margin of error, an acceptable level in the social sciences, which ranges from 3% to 7%, as suggested by Cochran (1977).

Respondents were recruited via Facebook, leveraging its significant user base in Kosovo and Prishtina. With 86% of Prishtina's population using Facebook (Hallakate, 2020), the web-based survey ensured accessibility and representativeness. The response rate was 85%, yielding 384 completed surveys.

2.3 Research procedure

The questionnaire was distributed online via Google Forms. Respondents received an introduction explaining the study's purpose, survey instructions, and confidentiality assurances. The web-based approach was chosen for its convenience, wide reach, and efficiency, as noted by Evans and Mathur (2005). Kosovo's 96% internet penetration rate (Kosovo ICT Association, 2019) ensures the sample thus obtained is representative of the general population.

2.4 Statistical analysis

IBM SPSS 23.0 was used for data analysis. Principal component analysis (PCA) identified latent components within the questionnaire, using promax oblique rotation to account for correlated components. PCA transformed items into components explaining the highest proportion of variance. Multiple regression analysis evaluated predictors of wellbeing and health perceptions, identifying significant relationships between accessibility, quality, amenities, safety, community connection, and perception of wellbeing and health related to green spaces. This methodology provides valuable insights into the accessibility, quality, and impact of green spaces on residents' wellbeing in Prishtina. A conceptual model illustrating the hypothesized relationships between green space dimensions (accessibility, quality, amenities, safety, and community connection) and perceived wellbeing and health was developed and used to guide the regression analysis.

3 Results

To begin the quantitative study, a reliability analysis was conducted in IBM SPSS 23.0 to evaluate the consistency of twenty-eight variables related to accessibility and availability, quality and aesthetic appeal, and amenities and functionality of green spaces, safety, community connection, and perceptions about wellbeing and health impact. First, a sampling adequacy test and Bartlett's test of sphericity were performed. The KMO value of 0.872 demonstrates that the chosen sample was highly sufficient. Bastič (2006) suggests that a KMO value exceeding

Table 2: Component loadings of the questionnaire.

Item	Component					
	1	2	3	4	5	6
I live close enough to a green space to access it easily.	.510	-.172	-.422	.144	.369	-.107
There are multiple green spaces near my residence.	.590	-.247	-.533	.051	.297	-.016
Green spaces in my area are large enough to accommodate many visitors.	.590	-.392	-.402	.158	.234	-.084
I feel that green spaces are available in various parts of the city.	.587	-.262	-.027	-.090	-.282	.337
I can visit green spaces any time without issues like limited hours or closures.	.540	-.361	-.317	-.024	-.231	.128
It is easy for me to get to a green space without spending much time.	.568	-.377	-.479	-.026	.084	.079
Public transportation options make it convenient to reach green spaces.	.562	-.158	.026	-.145	-.278	.473
There are clear and safe walking paths leading to green spaces.	.506	-.404	.024	-.059	-.314	.322
The green spaces I visit are well maintained.	.324	-.586	.141	-.066	-.350	-.324
Green spaces in my area are free from litter and pollutants.	-.329	.544	.067	.035	-.252	-.489
The trees and other plants in green spaces appear healthy and well cared for.	-.156	.624	.093	-.046	-.279	-.380
Green spaces offer a visually pleasing environment that feels natural.	.273	.620	.065	-.481	.008	-.216
I find the landscape design and layout of green spaces attractive.	.377	.503	.060	-.586	.153	-.030
The seasonal changes in green spaces add to their beauty.	.431	.507	.024	-.432	.036	-.007
The green spaces are sufficiently quiet and offer an escape from city noise.	.477	.566	.067	-.259	.212	.023
I feel that green spaces contribute positively to the city's appearance.	.391	.620	-.192	-.088	.004	.203
There are enough seating areas in green spaces for everyone to use.	.143	-.243	.550	.425	.181	.206
The green spaces have designated areas for specific activities (e.g., playgrounds and sports fields).	.039	-.191	.540	.384	.244	.232
I feel that there are adequate restrooms available.	.235	-.294	.502	.104	.316	-.027
I feel safe using amenities in green spaces, such as playgrounds or benches.	.106	-.171	.048	.564	.183	-.028
There is sufficient lighting for visits during early morning or evening.	.078	-.311	.030	.519	.133	.045
Spending time in green spaces helps me clear my mind and relax.	.049	.662	-.069	.198	-.052	.578
I feel less stressed after visiting green spaces.	-.077	.642	.040	.299	-.041	.562
My mental wellbeing has benefited from the availability of green spaces.	-.009	.411	.016	.448	-.131	.557
I feel more connected to my community when I visit green spaces.	-.083	.435	.106	.437	.513	-.058
I feel that green spaces enhance the overall quality of life in my area.	-.141	.490	-.098	.260	.514	.140

Note: extraction method = principal component analysis; rotation method = promax with Kaiser normalization.

0.5 is required for representativeness. The Bartlett's test score of 4,523.891 indicates significant dimensions predicting perceptions regarding green spaces' impact on wellbeing and health. From an inter-item correlation matrix, it became evident that, whereas most items demonstrated moderate to strong positive correlations, indicating good consistency among variables related to green space accessibility, quality, amenities, and health impact, two items – “Green spaces provide clean drinking water or there are vendors nearby” (–0.015) and “Having access to green spaces increases satisfaction with the living environ-

ment” (–0.095) – exhibited negative correlations. Following Field's (2017) recommendations, these items were excluded to improve the model's reliability. After their removal, reliability testing showed a Cronbach's alpha of 0.887 based on twenty-six items, confirming that the adjusted scale maintains a high level of internal consistency and better aligns with the underlying construct.

Furthermore, an initial analysis was conducted to extract eigenvalues for each component within the data set. Six

components surpassed Kaiser's criterion of 1, as recommended by Field (2017), and together accounted for 63.93% of the total variance. The decision to retain six components was based on the large sample size and the convergence of both the scree plot and Kaiser's criterion for this value. These components likely reflect the distinct dimensions of green space accessibility, quality, functionality, and wellbeing impact, while also acknowledging potential overlap or correlations between items. Consequently, an oblique rotation (promax) was applied to enhance interpretability by extracting component loadings. The rotated component loadings are presented in Table 2.

The items that load onto the same components use the criterion of component loadings greater than 0.5, as suggested by Field (2017). Hence, it is possible to establish the following six components:

- Component 1: accessibility and availability of green spaces; measured through eight questionnaire items listed in Table 2 referring to proximity to green spaces, multiple venues for green spaces, size of green spaces, availability of green spaces, access to green spaces without time constraints, easy access, public transportation options, and clear and safe walking paths to green spaces.
- Component 2: quality and aesthetic appeal of green spaces; measured through eight items referring to the maintenance of green spaces, green spaces free from pollution, caring for plants, offering a visually pleasing environment, attractiveness of landscape design and layout, the beauty of seasonal changes, provision of quiet environment, and positive contribution to the city's overall appearance.
- Component 3: amenities and functionality of green spaces; assessed through three items covering the availability of seating areas, designated activity spaces (e.g., playgrounds and sports facilities), and adequate restrooms.
- Component 4: safety; measured through two items, focusing on the safety of using green space amenities and sufficient lighting for safety.
- Component 5: community connection and living environment; measured through two items reflecting the role of green spaces in enhancing social bonds and improving the overall quality of life in the area.
- Component 6: perception of wellbeing and health impact; evaluated through three items examining the mental and physical health benefits of green spaces, including improved physical health, mood enhancement, mental clarity, stress reduction, and overall wellbeing due to access to green spaces.

Components are generally more reliable measures of complex phenomena than individual questions. To assess reliability, Cronbach's alpha was calculated for all six components: Component 1 = 0.828, Component 2 = 0.793, Component

3 = 0.692, Component 4 = 0.694, Component 5 = 0.691, and Component 6 = 0.814. According to Nunnally (1978), a threshold of 0.69 is recommended for reliability, and all six components met or exceeded this value. Based on these results, linear regression was conducted using Components 1–5 as independent variables and Component 6 as the dependent variable.

Subsequently, a multiple regression analysis was conducted to predict the perception of wellbeing and health impact as the dependent variable. The results reveal an R^2 value of 0.485, indicating that 48.5% of the variance in the perception of wellbeing and health impact of green spaces is explained by the other five components. The remaining variance ($1 - R^2$, or 51.5%) is attributed to other factors not included in the model. The regression analysis further confirms that these components significantly contribute to explaining the variance in the perception of wellbeing ($F(5, 357) = 67.118, p < 0.001, R^2 = 0.48, R^2_{adj} = 0.47$).

The regression coefficients are presented in Table 3, indicating that two components – quality and aesthetic appeal, and community connection – show significant positive correlations with the dependent variable (i.e., perception of wellbeing). In contrast, accessibility and availability, amenities and functionality, and safety do not demonstrate statistically significant correlations with the dependent variable in this model.

In summary, based on the multiple regression analysis, the study tested the five hypotheses regarding the predictors of perceived wellbeing and health impact from urban green spaces. Hypothesis 2, which posited that quality and aesthetic appeal significantly predict perceived wellbeing, was confirmed ($p < .001$) in addition to Hypothesis 5, proposing that community connection is a significant predictor ($p < .001$). However, Hypothesis 1 (accessibility and availability), Hypothesis 3 (amenities and functionality), and Hypothesis 4 (safety) were rejected because their correlations with the dependent variable were not statistically significant ($p > .05$). These findings suggest that, in the context of Prishtina, perceptual and social dimensions of green spaces play a more critical role in shaping wellbeing than physical or infrastructural characteristics.

4 Discussion

This study provides new insights into how the perceived wellbeing and health impact of urban green spaces in Prishtina are shaped more by their quality and social function than their accessibility or infrastructure. The findings reveal that quality and aesthetic appeal, and community connection significantly predict perceived wellbeing, whereas accessibility and availa-

Table 3: Linear regression coefficients.

	Unstandardized coefficients		Standardized beta coefficient	t	Sig.
	B	SD			
(Constant)	.997	.193		5.154	.000
Accessibility and availability	-.046	.049	-.042	-0.935	.350
Quality and aesthetic appeal	.311	.059	.249	5.245	.000
Amenities and functionality	-.023	.056	-.020	-0.417	.677
Safety	-.047	.051	-.046	-0.921	.357
Community connection	.588	.042	.583	13.917	.000

Note: dependent variable = perception of wellbeing. The inter-item correlation matrix is available to readers upon request as supplementary material.

bility, amenities and functionality, and safety did not show significant correlations in the model. This suggests that in Prishtina, where the quantity and equitable distribution of green spaces remain limited, people derive the greatest benefits from the aesthetic value and social experiences offered by green spaces rather than from their proximity or basic services.

According to Balaj et al. (2022), green spaces in Prishtina are unevenly distributed, suffer from vegetation quality disparities, and lack infrastructure that fosters functionality and inclusivity. These structural limitations likely explain why accessibility, amenities, and safety did not emerge as significant predictors: with limited choices and inadequate investment, residents may prioritize quality and social value in the few spaces available.

This pattern differs from cities such as Sarajevo and Belgrade. Tatlić et al. (2024) demonstrate that, even though Sarajevo's forest parks are underutilized due to inaccessibility and design issues, their location and scale still contribute to perceived good environmental quality. Vujčić et al. (2018) found that Belgrade's aesthetically pleasing parks correlated with lower stress and reduced medication use. These comparative examples reinforce our findings by highlighting the greater influence of perceived quality and community interaction when infrastructure or access is lacking. However, unlike Ljubljana or other Slovenian cities where inclusive planning policies and cross-sectoral collaboration guide green space development (Šuklje Erjavec et al., 2022; Kozamernik et al., 2024), Prishtina continues to lack such institutional frameworks.

From a theoretical perspective, the study confirms arguments made by Cleary et al. (2019) and Giannico et al. (2021), who emphasize that subjective perceptions, especially those related to naturalness, design, and emotional connection, can outweigh purely physical dimensions such as size or proximity in determining wellbeing. Moreover, as Zhang et al. (2017) and Zhan et al. (2022) suggest, in contexts in which green infra-

structure is scarce or poorly distributed, social functionality and aesthetics gain even greater relevance.

The implications for urban policy are clear: city authorities in Prishtina should prioritize the ecological and aesthetic revitalization of parks and integrate participatory planning mechanisms to ensure green spaces meet community needs. Investing in landscape design, biodiversity, seating, and community programmes may yield higher wellbeing returns than merely expanding the park area without addressing quality. Socially inclusive programmes in parks, such as festivals, educational events, or intergenerational activities, can strengthen the community connection dimension.

Finally, for society at large, this research reinforces the fact that the perceived value of green spaces is co-shaped by their physical features and the social experiences they foster. In transitional urban contexts like Prishtina, targeted investment in quality and social infrastructure may offer a path toward healthier, more cohesive communities.

5 Conclusion

This study provides important insights into how urban green spaces influence perceived wellbeing in Prishtina, emphasizing that quality and aesthetic appeal, and community connection are the strongest predictors. These findings align with the regional literature from Belgrade and Sarajevo, and underscore the urgent need for better-maintained, inclusive, and socially engaging green spaces in Kosovo's capital. Components such as accessibility, amenities, and safety were not statistically significant predictors, which may reflect Prishtina's uneven spatial distribution of green infrastructure and the underdevelopment of supportive policies and inclusive planning practices. The study advances the literature by offering a multidimensional, user-centred framework adapted to the post-communist urban context of Prishtina, filling a critical gap in empirical research.

From a policy perspective, these results highlight the importance of prioritizing not only the quantity but especially the quality and social function of green spaces in urban planning strategies. Investing in design features that foster emotional attachment, social belonging, and visual appeal can improve urban liveability despite limited space and resources.

Limitations of the research conducted include the use of self-reported data and correlational analysis, which restrict causal inference. Future research should incorporate longitudinal and spatial data and further explore how governance, infrastructure, and cultural preferences shape the relationship between green space and wellbeing in transitional urban environments such as Prishtina.

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