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ORIGINAL

Green areas as an element of urban configuration: relationship between their management and the quality of the environment

Áreas verdes como elemento de configuración urbana: relación entre su gestión y la calidad del entorno

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ABSTRACT

Efficient management of green areas is essential to improve the quality of urban life; in the current context, these spaces contribute to the physical and mental health of the inhabitants, foster social cohesion, promote economic development, and help build more sustainable and resilient cities in the face of environmental challenges. Under this premise, the objective of this study was to determine the relationship between the management of green areas and the quality of urban life in the city of Juliaca, 2024; for this purpose, a non-experimental, correlational and cross-sectional design was used. The sample consisted of 192 residents of the main parks and squares of the unit of analysis, to whom an instrument was applied, with a reliability of 0,808. The results were a correlation coefficient of Rho=0,617 and a value of p=0,000, which indicate the existence of a moderate to strong positive correlation between the management of green areas and the quality of urban life in the city of Juliaca. It is concluded that it is critically important to improve the management of these spaces as a key strategy to improve the overall well-being of the inhabitants; local authorities, architects, urban planners and the community must work together to develop and maintain green areas that contribute positively to a healthier, more inclusive and sustainable urban life.

Keywords: Green Area Management; Quality of Urban Life; Maintenance and Care of Green Areas; Environmental Sustainability; Community Participation.

RESUMEN

La gestión eficiente de las áreas verdes es fundamental para mejorar la calidad de vida urbana; en el contexto actual estos espacios contribuyen a la salud física y mental de los habitantes, fomentan la cohesión social, impulsan el desarrollo económico, y ayudan a construir ciudades más sostenibles y resilientes frente a los desafíos ambientales. Bajo esta premisa, el objetivo del presente estudio fue determinar la relación de la gestión de áreas verdes y la calidad de vida urbana en la ciudad de Juliaca, 2024; para estos efectos se utilizó el diseño no experimental, correlacional y transversal. La muestra estuvo conformada por 192 vecinos de los principales parques y plazas de la unidad de análisis, a quienes se les aplicó un instrumento, cuya confiabilidad fue de 0,808. Los resultados fueron un coeficiente de correlación de Rho=0,617 y un valor de p=0,000 que indican la existencia de una correlación positiva moderada a fuerte entre la gestión de áreas verdes y la calidad de vida urbana en la ciudad de Juliaca. Se concluye en la importancia crítica de mejorar la gestión de estos espacios como una estrategia clave para elevar el bienestar general de los habitantes;

las autoridades locales, arquitectos, planificadores urbanos y la comunidad deben trabajar conjuntamente para desarrollar y mantener áreas verdes que contribuyan positivamente a una vida urbana más saludable, inclusiva y sostenible.

Palabras clave: Gestión de Áreas Verdes; Calidad de Vida Urbana; Mantenimiento y Cuidado de Áreas Verdes; Sostenibilidad Ambiental; Participación Comunitaria.

INTRODUCTION

Efficient management of green areas is essential to improving urban quality of life. In the current context, these spaces contribute to the physical and mental health of residents, foster social cohesion, drive economic development, and help build cities that are more sustainable and resilient to environmental challenges. Green areas are a territorial dynamic that influences the formation of urban spaces on their path to sustainability, and managing them properly must be a strategy for making our cities more livable, inclusive, and sustainable. This management becomes even more crucial when considering that people express greater positive feelings and happiness when in contact with natural environments. At the same time, these parameters decrease in urban or closed environments, according to Guarda et al.[1] This relationship between the natural environment and emotional well-being underscores the importance of urban green space management as an essential component of sustainable development and improving quality of life in cities.

In this regard, a study notes that green areas not only impact emotional well-being but also play a crucial role in regulating the urban climate, improving air quality, and strengthening social cohesion. These places not only serve as areas for recreation and study, but also contribute significantly to the preservation of life on the planet by maintaining urban forests within university campuses. Inadequate management of these spaces can cause problems ranging from environmental degradation to a decline in the quality of life of citizens, reinforcing the need for effective and conscious administration of green areas in the urban environment.

In this context, in Asia, Wang et al.[2] conclude that urban parks beautify the environment and promote urban public health, and their spatial allocation is important for maintaining environmental justice. Therefore, the management of green areas is correlated with the quality of life of inhabitants. They therefore propose improving the equity of urban parks through strategies that include improving the accessibility and quality of existing parks, as well as adding new green spaces in high-density urban areas. These actions can contribute significantly to urban quality of life. Nguyen et al.[3] mention that green areas are related to the health of occupants, with better air quality, lighting, and fewer pollutants. These benefits can contribute to reducing disease symptoms and improving overall quality of life. Paudel et al.[4] refer to the preservation and development of urban green spaces as fundamental to maintaining and improving urban quality. The availability of green areas not only contributes to the physical and mental well-being of residents but also helps mitigate the negative impacts of rapid urbanization. It also highlights that direct contact with the natural environment in green areas can have positive effects on people's emotional and relational well-being, as well as on the cognitive and behavioral development of children. [5] highlights that the loss of contact with nature hurts people's physical and mental health, emphasizing the importance of green spaces in urban quality and the balance between urban development and nature conservation.

In Europe, Arellano et al.[6] emphasize that green spaces are essential for improving the quality of life in cities. They offer ecosystem benefits such as climate regulation, pollutant capture, and flood control. In addition, they foster community contact and integration, and provide an environment conducive to health, rest, and connection with nature. The presence of green areas is associated with lower crime rates and has a positive impact on people's mental vitality. They also help mitigate the effect of urban heat islands, creating cooler areas in cities. Finally, urban parks increase the economic value of cities, including an increase in the value of nearby properties. Battisti et al.[7] also conclude that the management of green areas is related to people's quality of life and, therefore, they must be appropriately designed and managed with a long-term approach that ensures a healthy urban ecosystem. Dehof et al.[8] state that the attractiveness of a city depends not only on the available living space and its price, but also on the quality of life in the city. Therefore, nature is an important criterion in the quality of life and also shapes the appearance of the city. Lishchynskyy et al.[9] conclude that urban and suburban greenery as an entity has a latent but dynamic monetary value. A value that, if ignored, can lead to its degradation and possibly its disappearance over time. This value encompasses the usefulness, aesthetics, attractiveness, and characteristics of these spaces, as well as other key elements, including the urban environment and areas where residents can typically "escape."

In North America, Ha et al.[10] point out that neighborhood greenery is related to mental health, and therefore, access to biodiverse environments is sought to improve overall neighborhood satisfaction. Moreover, in Canada, Filazzola et al.[11] state that cities are becoming increasingly dense and extensive. It is essential to

understand how people interact with these spaces for biodiversity conservation and sustainable development. In this study, anonymous GPS data from smart devices were used to analyze human activity in parks in the Toronto metropolitan area. The researchers conclude that GPS data is a valuable tool for studying the use of green spaces and for managing these spaces. This data can help strike a balance between human use and biodiversity conservation in cities. Ababneh[12] also mentions that bright urban green spaces are green areas within cities that integrate advanced technologies to improve their management and sustainability. These spaces offer multiple benefits. To create these spaces, technologies such as the Internet of Things (IoT), sensor networks, and data analysis are used. These technologies optimize resource use, improve maintenance and operations, and promote sustainable practices such as water conservation and biodiversity preservation. In the opinion of Bollo Manent et al.[13], there is a growing trend to study open spaces and green areas in cities given their importance to the population in terms of physical and psychological health and as spaces for social cohesion, their importance as carriers of biodiversity, their contribution to thermal regulation, air quality, and stormwater drainage, as well as their economic importance as tourist attractions and for optimizing the built environment in the city.

In Central America, Alanís Rodríguez et al.[14] conclude that the management of urban green areas can contribute to the environmental and aesthetic quality of urban spaces. Romero Vargas et al.[15] highlight the importance of urban green areas as strategic elements for improving people's quality of life by providing multiple ecosystem services. They also contribute to the maintenance and improvement of urban biodiversity, benefit human health and well-being, and bring residents closer to nature. Acosta-Vargas et al.[16] conclude that green areas within urban developments function as refuges for flora. In recent years, several efforts have been made to understand the importance of these areas in cities, both as sites for research and recreation. Piaggio et al.[17] estimate that the restoration and construction of urban parks show that people place significant value on the restoration of undeveloped urban natural areas.

In South America, Guarda et al.[1] highlight that the management of green spaces is related to physical activity in urban environments, to promote the well-being and health of the population. They highlight the need to improve the distribution and quality of green spaces in Chilean cities so that more people can benefit from them, emphasizing that interaction with green spaces and physical activity in these environments can improve the quality of life, mental and physical health, and overall well-being of the population. Benini et al.[18] conclude on the importance of managing public green areas and their relationship with environmental quality, the well-being of the population, and biodiversity conservation. Zumárraga et al.[19] highlight that green areas, such as parks and squares, take on fundamental importance in urban areas by becoming the epicenter of multiple activities. These areas are associated with a natural and welcoming environment for entertainment and relaxation, and also serve as the central hub for cultural, social, and sporting initiatives that strengthen community cohesion and encourage citizen participation. González et al.[20] note that green spaces highlight nature within an urban environment, offering a variety of notable ecological benefits. These places stand out for their high aesthetic value and their importance for improving the environment, as they help conserve energy, maintain air quality, and reduce CO2 emissions. In addition, they promote the presence and diversity of urban flora, which enriches biodiversity in urban areas.

In this regard, the city of Juliaca faces numerous challenges in terms of urban development and environmental sustainability. Despite being an important commercial and transportation hub in the south of the country, Juliaca has a notable lack of green areas and quality public spaces, which could be related to the quality of life of its inhabitants. It is also observed that the unit of analysis has a limited number of parks, squares, and gardens, which are insufficient to serve its growing urban population. Existing green areas are often poorly maintained, characterized by sparse vegetation, inadequate urban furniture, and cleanliness issues. This discourages their use by the community and exacerbates the perception of insecurity in these spaces. As a result, the city faces high levels of air and soil pollution, partly due to commercial activity and heavy vehicle traffic. Green areas, which could mitigate these effects, are insufficient and ineffective in their current state.

The lack of accessible green spaces limits opportunities for outdoor physical and recreational activities, contributing to health problems such as obesity, cardiovascular disease, and mental health disorders among residents. The scarcity of well-designed and maintained public spaces reduces opportunities for social interaction and community cohesion. In addition, the perception of insecurity in the few green areas available limits their use, creating a vicious cycle of disuse and deterioration.

Therefore, the objective of this study was to determine the management of green spaces and urban quality of life in the city of Juliaca in 2024. This is justified at a theoretical level because it seeks to integrate principles of sustainability and human well-being into urban planning, as outlined in the United Nations Sustainable Development Goals (SDGs), particularly those related to sustainable cities and communities (SDG 11). By exploring the relationship between green space management and urban quality of life, this research seeks to fill a gap in the literature on Andean cities and offer a model applicable to similar contexts.

From a practical perspective, research on green space management in Juliaca has direct implications for

urban policy and local public administration. The study's findings will provide an empirical basis for decision-making, enabling urban planners, architects, and public officials to design and implement more effective and sustainable projects.

The social justification for this study lies in its potential to improve the quality of life of Juliaca's inhabitants. The lack of adequate green areas disproportionately affects the most vulnerable communities, who often have less access to recreational and natural spaces. This deficit contributes to disparities in health, well-being, and opportunities for social and economic development.

METHOD

In this research project, a basic research approach was adopted, with the primary objective of seeking information and facts that would explain and describe the reality of the environment and society. In particular, the study focused on analyzing how green space management impacts the behavior and quality of urban life of the population in the study area and, consequently, how it affects people's daily lives. The information gathered through this basic research will serve as a fundamental basis for providing greater knowledge about recreational spaces and areas.[21]

A non-experimental cross-sectional design is proposed to analyze the relationship between green areas and urban quality of life. The cross-sectional nature of this study implies that the variables of interest, i.e., green areas and urban quality of life, will not be manipulated. Instead, these variables will be observed and measured as they are at a given moment. According to Espinoza Casco et al.[22], non-experimental research creates independent variables that should not be manipulated. The researcher has no direct control over these variables, which cannot contribute to each other because they have already occurred, as have their effects. The relationships between variables are established by direct participation or contribution, and the relationships are visualized as they develop in natural environments. For [23], correlational studies measure two variables without the researcher manipulating or controlling them, and the results can be positive, negative, or zero.

The population consisted of 382 residents of the main squares and parks that make up the urban area of the city of Juliaca. The sample consisted of 192 residents. The inclusion criteria were residents born in the city of Juliaca and whose residence is close to a park or square in the urban area. Those who did not want to participate and those who are not native to Juliaca were excluded.

The information was collected using a survey, and the instrument was a questionnaire with 10 questions, from question 1 to 5 for variable 1, and from question 6 to 10 for variable 2. For content validity, expert judgment was used, whereby a panel of three professionals involved in and knowledgeable about the issues and variables of this study reviewed the items and rated their relevance, appropriateness, and level of understanding.

For inferential analysis, SPSS v.26 statistical software was used to initially perform a normality test using the Kolmogorov-Smirnov test, as the sample size was greater than 50, in order to decide which statistic to use.

RESULTS

Table 1. Descriptive results for green area management

	Freq.	%	% Val.	% Accum.
Deficient	0	0	0	0
Average	10	56	56	56
Good	84	44	44	100
Excellent	0	0	0	100
Total	192	100	100	

Table 1 shows the frequency distribution obtained for the variable green area management, which, in the city of Juliaca, reflects an intermediate situation about the quality of management of these spaces.

The fact that no green area has been classified as deficient suggests that, although green area management in Juliaca does not reach optimal levels, there are no green spaces in such a critical state that they are considered inadequate or abandoned. However, more than half (56 %) of green areas in Juliaca are perceived as being managed regularly. This is the predominant category in the distribution, implying that most of these spaces have deficiencies in crucial aspects such as maintenance, infrastructure, and accessibility. The regular classification suggests that these green areas fulfill basic functions but require significant improvements to achieve a satisfactory level of management. Common problems in this category may include poorly maintained vegetation, deteriorated street furniture, and insufficient services, which affect the community's full enjoyment of these areas.

Forty-four percent of green areas in Juliaca are considered to be well managed, indicating adequate

management that meets most of the standards necessary to provide significant benefits to the population. These green areas likely have regular maintenance, good infrastructure, and are relatively accessible and safe for users. However, to advance to an excellent level, these areas may still require improvements in specific aspects such as expanding services, including sustainable practices, and increasing community participation in their management.

The absence of green areas classified as excellent indicates that, despite efforts to improve management, none of the green areas in Juliaca achieve the highest levels of quality. This suggests that there is significant room for improvement in aspects such as comprehensive planning, environmental sustainability, active community participation, and the provision of high-quality services. The lack of excellent green areas may be related to limitations in financial, technical, and management resources, as well as the need for greater integration of urban and environmental policies.

Green area management in Juliaca reveals a situation that, while not critical, needs substantial improvement; the predominance of green areas with regular management suggests the need for a more strategic and sustained approach to raise the quality of these spaces to good and eventually excellent levels.

Table 2. Descriptive results for urban quality of life

	Freq.	%	% Val.	% Accum.
Deficient	0	0	0	0
Fair	113	59	59	59
Good	79	41	41	100
Excellent	0	0	0	100
Total	192	100	100	

Table 2 presents the frequency distribution obtained for the urban quality of life variable in the city of Juliaca, which reflects an intermediate situation in terms of the well-being of its inhabitants. The absence of responses in the poor category indicates that, in general terms, Juliaca does not face extreme conditions of urban deterioration or inadequate living conditions. This suggests that minimum quality of life conditions are being met, although not necessarily in an optimal manner. Although no aspect is classified as poor, this does not imply that there are no critical areas that need attention and improvement, but rather that the problems are not serious enough to be considered necessary in the overall assessment.

It is noted that the majority of respondents (59 %) consider the quality of urban life in Juliaca to be average, suggesting that, although the basic needs of citizens are met, multiple areas require significant improvement. Typical problems associated with fair quality of life may include inconsistent public services, deteriorated urban infrastructure, limited access to quality health and education services, and security issues. This predominance in the fair category indicates a general perception of dissatisfaction, although not of urgency, highlighting the need for policies and actions to raise the standard of living.

Forty-one percent of respondents consider the quality of urban life in Juliaca to be good. This significant proportion suggests that there are areas of the city that function adequately and provide a relatively comfortable and satisfying urban environment. Positive aspects include areas with good public services, adequate infrastructure, well-managed green spaces, and a perception of safety and social cohesion.

The fact that no respondents rated quality of life as excellent suggests that, although there have been significant achievements, there is still much room for improvement. The absence of responses in the superb category indicates that, despite the positive aspects, the city of Juliaca does not achieve the highest level of urban quality of life in any of the areas assessed. This could be related to the need for comprehensive and sustained improvements in multiple dimensions of urban life, including infrastructure, public services, social cohesion, and environmental sustainability.

The interpretation of the results of the frequency table for the urban quality of life variable in Juliaca reveals that the city is in an intermediate situation, with a predominance in the fair category. Although it is not facing a quality-of-life crisis, there is a clear need to implement improvements to raise the overall level of well-being of its inhabitants.

According to the data shown in table 3, Spearman's correlation coefficient Rho=0,617 indicates a moderate to strong positive correlation between green space management and urban quality of life in the city of Juliaca; this means that as green space management improves, urban quality of life also tends to improve. This result suggests that there is a significant relationship between the way green areas are managed and the general well-being of the inhabitants of Juliaca. Furthermore, the value of p=0,000 indicates acceptance of the researcher's hypothesis. This underscores the critical importance of improving the management of these spaces as a key strategy for raising the general well-being of the inhabitants. Local authorities, urban planners, and the

community must work together to develop and maintain green areas that contribute positively to a healthier, more inclusive, and sustainable urban life.

Table 3. Contingency table for general hypothesis

			Green space management	Urban quality of life
Spearman's rho	Green space management	Correlation coefficient	1	,617**
		Sig. (bilateral)		0.
		N	192	192
	Urban quality of life	Correlation coefficient	,617**	1
		Sig. (bilateral)	0,000	
		N	192	192

**. The correlation is significant at the 0,01 level (bilateral).

Table 4. Inferential results for specific hypotheses

		Maintenance and care	Accessibility and safety	Community participation	Environmental sustainability
Quality of urban life	CC	,382**	,467**	,400**	,568**
	Sig. (b)	0	0	0	0,000
	N	192	192	192	192

**. The correlation is significant at the 0,01 level (bilateral).

The results shown in table 4 indicate that there is a positive and statistically significant correlation between different aspects of green area management and urban quality of life in Juliaca.

Regarding the maintenance and care of green areas and urban quality of life, the value of Rho=0,382 suggests a moderate positive correlation between these factors. This suggests that improvements in the maintenance and care of the green regions are associated with a better urban quality of life, although the relationship is not extremely strong. Furthermore, the value of p=0,000 indicates acceptance of the researcher's hypothesis.

About the accessibility and safety of green areas and urban quality of life, the value of Rho=0,467 indicates a moderate to strong positive correlation between the accessibility and safety of the green regions and urban quality of life. This implies that when green areas are more accessible and safer, there is a noticeable improvement in urban quality of life. The value of p=0,000 indicates acceptance of the researcher's hypothesis.

About community participation in green areas and urban quality of life, the value Rho=0,400 infers a moderate positive correlation between community participation in green areas and urban quality of life. This means that greater community participation in the use and care of the green regions is associated with a better quality of life in urban areas. Furthermore, the value of p=0,000 indicates acceptance of the researcher's hypothesis.

About the environmental sustainability of green areas and urban quality of life, the value of Rho=0,568 indicates a strong positive correlation between the ecological sustainability of the green regions and urban quality of life. This suggests that sustainable practices in the management of green areas have a significant impact on improving urban quality of life, indicating the adoption and promotion of sustainable practices in the management of green regions. This includes the implementation of efficient irrigation systems, the use of native species, and environmental conservation and education programs. In addition, the value of p=0,000 indicates the acceptance of the researcher's hypothesis.

These results reveal significant and positive correlations between various aspects of green space management and urban quality of life in Juliaca. The strength of these correlations varies, being strongest in the case of environmental sustainability. These relationships suggest that improvements in these specific aspects of green space management can lead to a noticeable increase in the urban quality of life of Juliaca's residents. Local authorities and urban planners should focus on comprehensive strategies that address the maintenance, accessibility, safety, community participation, and environmental sustainability of green areas to maximize the positive impact on urban quality of life.

DISCUSSION

The results of this study confirm that green space management has a significant impact on urban quality of life in the city of Juliaca. In line with Wang et al.[2], improving the management of these spaces not only beautifies the city but also promotes the health, well-being, and social cohesion of its inhabitants. As noted

by Nguyen et al.[3], urban policies and development strategies must continue to prioritize and improve the management of green areas to achieve a healthier and more sustainable urban environment.

The study confirms that there is a moderate positive correlation between the maintenance and care of green areas and urban quality of life in Juliaca. This finding is consistent with Battisti et al.[7], who suggest that improving the maintenance of green areas can have a positive impact on the quality of life of residents. Therefore, urban policies and management strategies must prioritize the care and maintenance of these spaces to ensure a healthier and more pleasant urban environment for all residents.

The results of this study also confirm that there is a moderate to strong positive correlation between the accessibility and safety of green areas and urban quality of life in Juliaca. Similar to Ha et al.[10], improving the accessibility and safety of these spaces is essential to raising the quality of life of residents. Urban policies and development strategies need to focus on creating and maintaining green areas that are easily accessible and safe for all citizens, ensuring a healthier, more inclusive, and prosperous urban environment.

The study confirms that there is a moderate positive correlation between community participation in green spaces and urban quality of life in Juliaca. In agreement with Rodríguez et al.[14], increasing community participation in the use and care of green spaces is essential to improving the quality of life of residents. Urban policies and development strategies need to focus on promoting and facilitating community participation, ensuring that green areas are inclusive, well-maintained, and actively used by all citizens, thus contributing to a healthier, more cohesive, and prosperous urban environment.

The study confirms that there is a strong positive correlation between the environmental sustainability of green areas and urban quality of life in Juliaca. In agreement with Guarda et al.[1], Benini et al.[18], and González et al.[20], sustainable practices in green space management, such as the implementation of efficient irrigation systems, the use of native species, and conservation and environmental education programs, have a significant impact on improving the quality of life of residents. Urban policies and development strategies need to focus on adopting and promoting sustainable practices, ensuring a healthier, more resilient, and prosperous urban environment for all citizens.

The results of this study underscore the importance of comprehensive and sustainable management of green areas in Juliaca. Improvements in the maintenance, accessibility, safety, community participation, and sustainability of these spaces have a significant and positive impact on urban quality of life. Urban development policies and strategies should prioritize these areas, fostering an urban environment that is healthy, inclusive, and resilient for all citizens.

CONCLUSIONS

About the overall objective, the study carried out in the city of Juliaca has demonstrated a moderate to strong positive correlation between green space management and urban quality of life. This finding implies that, as green space management in Juliaca improves, the urban quality of life of its inhabitants also tends to improve. This suggests that there is a significant and consistent relationship between green space management and various indicators of urban quality of life, such as physical and mental health, social cohesion, safety, and the general well-being of residents. This also implies that improvements in aspects such as maintenance, accessibility, safety, sustainability, and community participation in green spaces can have a direct and positive impact on urban quality of life.

About the first specific objective, the results indicate a moderate positive correlation between the maintenance and care of green areas and urban quality of life. This means that, in general, improvements in the maintenance and care of the green regions are associated with an improvement in urban quality of life. Although this relationship is not extremely strong, it is significant, indicating that the condition of green areas has a noticeable impact on the quality of life of Juliaca's inhabitants. This underscores the importance of properly maintaining and caring for green areas to improve urban quality of life, including regular cleaning, pruning, watering, and infrastructure repair. Local authorities and urban managers should prioritize the allocation of resources for the ongoing maintenance of these green spaces.

About the second specific objective, the result indicates a moderate to strong positive correlation between the accessibility and safety of green areas and urban quality of life in general. When green areas are more accessible and safer, there is a noticeable improvement in urban quality of life. This moderate to strong relationship indicates that the accessibility and safety of green areas are important factors that significantly influence the well-being of Juliaca's inhabitants. Therefore, accessibility to green areas should be a priority in urban planning, including the creation of well-maintained pedestrian and bicycle paths, the removal of architectural barriers for people with disabilities, and the installation of adequate signage. Improvements in the accessibility and safety of green areas have a direct impact on urban quality of life. Citizens have more opportunities for recreation, physical activity, and social interaction in safe and accessible environments, which improves their physical and mental health.

About the third specific objective, the results indicate a moderate positive correlation between community

participation in green areas and urban quality of life. This implies that greater community participation in the use and care of the green regions is associated with an improvement in urban quality of life. Although the relationship is not extremely strong, community participation has a significant impact on the quality of life of the inhabitants of Juliaca. Therefore, involving the community in the planning, design, and maintenance of green areas can increase the sense of belonging and responsibility towards these spaces, resulting in more effective use and care. The inclusion of diverse demographic groups in activities and decisions related to green areas ensures that these spaces meet the needs of the entire community.

About the fourth specific objective, the results indicate a strong positive correlation between the environmental sustainability of green areas and urban quality of life. Suggesting that the implementation of sustainable practices in green space management has a significant impact on improving urban quality of life. Consequently, implementing conservation and environmental education programs can enhance community awareness and commitment to sustainable practices, leading to increased investment in green infrastructure, including the creation of more urban green spaces that integrate sustainability principles. This may include the construction of vertical gardens, green roofs, and ecological corridors that connect different green areas within the city.

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