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Municipal management and recreational public spaces sustainability in a district in the northeast of Peru

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ABSTRACT
The objective of the study was to determine if the strategies implemented by the municipal management improve the recreational public spaces sustainability. The research was carried out in Tarapoto City, Peru in 2020. The sample consisted of 384 people, including architects, municipal officials, and Tarapoto district residents. Surveys were conducted through written questionnaires to determine if the strategies implemented by the municipal management improve the recreational public spaces sustainability. The independent variable was the strategies implemented by the municipal management, described by 9 dimensions: institutionality, territorial programs, social control, access to information, accountability, spatial relationship, resource allocation, technology and communication, and project execution. The dependent variable was the public spaces sustainability, defined by 6 dimensions: design and equipment, accessibility, safety, environmental quality, comfort and social appropriation. It was determined that the strategies implemented by the municipal management significantly improve ($p < 0.01$) the recreational public spaces sustainability in Tarapoto City through a correlation by ranges $\rho = 0.935$ and a determination coefficient $R2 = 0.938$, suggesting that 93.8% of the variation in the recreational public spaces sustainability is explained by the strategies implemented by the municipal management. It was estimated that the implemented strategies level by municipal management is regularly efficient in 66.67% and the sustainability of recreational public spaces in Tarapoto City is good in 63.54%.
Keywords: municipal management, sustainability, recreational public spaces.

INTRODUCTION

In a context of accelerated population growth and cities urbanization, policies and management instruments that focus on the public spaces treatment have been put aside. Added to this are the high levels of pollution and congestion that appear as one of the main negative externalities of this population growth. According to Talancha (2013) public spaces, especially those with a large green areas number, could compensate or mitigate the effects of this problem. However, their number is insufficient, their management is deficient and their quality as public spaces is debatable. It is a global trend that many world cities through their governments allocate funds to improve and

expand their public spaces, as it has been shown that this raises the life quality. For his part, Soto (2010) points out that there are multiple experiences at the international level, and specifically in Latin America, that provide solutions to current urban problems, based on intervention in public space, mainly in those neighborhoods that have emerged from informality, and that little by little have gone through an urban consolidation process, or in those that, despite having been conceived within formality, have been urban and social degradation victims. The Comprehensive Urban Projects in Medellín, Colombia, the Quiero Mi Barrio program in Chile and the Public Spaces Rescue Program in Mexico, are three examples of strategies carried out with different results, in which through physical intervention in the objective of public space is to improve both the urban conditions of those sectors that benefit from the actions carried out in them, as well as the public security situation. The quantity and quality of public spaces in the city have an impact on the citizen life quality of the citizen, so with its optimal management an adequate social integration is created (Jiménez, 2014).

In Peru, squares and other public spaces components have become conflict authentic areas for the development of various intentions; These spaces have become a true reflection of the collective identities construction within Peruvian society. Thus, the new zoning changes double the occupancy capacity, and can occur in less than 5 years in a country where the infrastructures are changed every 40 years, not to mention that they are obsolete and that, in many cases, they lack areas green. The traditional public space is now perceived as a dangerous and unsafe place, motivating the population to take shelter in private spaces that are increasingly hermetic and closed or private spaces of a collective nature that give an opposite image and with a concept of limited freedom.

Public spaces in general and recreational spaces in particular in Tarapoto City, reveal a high degree deterioration, dirt and lack of architectural elements and inequity conditions, lack of economic growth and poverty suffered by its inhabitants. Currently, in Tarapoto City, there are 06 playgrounds, 02 squares, 05 squares, 08 central planters, 51 lateral planters, 04 avenues, 01 Boulevard and 03 stairways. Making a total of 80 green areas which total 85,172.43 m2 located in the various neighborhoods of Tarapoto City. But, at the same time, it has a potential for natural remnants that can be attached to the public recreational spaces system of the city, that is, in recent years the city has had significant urban and marginal urban growth, without proper planning, originating a disorder and an inadequate management of public spaces and especially those that correspond to recreational public spaces. In this sense, the general objective of this research is to determine if the strategies implemented by municipal management improve the recreational public spaces sustainability in Tarapoto City, 2020, for which it is intended to identify the level of strategies implemented by the municipal management, the sustainability level of recreational public spaces, determine if the strategies implemented by municipal management regarding institutionality, social control, access to information, accountability, spatial relationship, resource allocation, technology and communication, improve the sustainability of recreational public spaces, project execution, design and equipment, accessibility, safety, environmental quality, comfort and social appropriation improve the sustainability of recreational public spaces in Tarapoto City, 2020.

METHODOLOGY

The investigation was carried out in Tarapoto City, Peru. The population was made up of architects, municipal officials and residents of Tarapoto City, 2020. Table 1 shows the population distribution. The sample consisted of 384 people, including architects, municipal officials, and residents of Tarapoto City (Table 2). Surveys were conducted through written questionnaires to determine if the strategies implemented by the municipal management improve the sustainability of recreational public spaces. The questionnaire referring to the independent variable (Strategies implemented by municipal management) was made up of 9 dimensions: institutionality, territorial programs, social control, access to information, accountability, spatial relationship, resource allocation, technology and communication and execution of projects; with a total of 52 items. Likewise, the questionnaire referring to the dependent variable (public spaces sustainability), was made up of 6 dimensions: design and equipment, accessibility, safety, environmental quality, comfort and social appropriation; with a total of 36 items.

Table 1. Distribution of the architects' population, municipal officials and residents of the Tarapoto City, 2020.

Condition	Gender		TOTAL
	Men	Women	
Workers	40	32	72
Architects	279	200	479
Citizens	63 087	94 632	157 719

Total	63 406	944 864	158 270

Source: Colegio de Arquitectos Regional San Martín (2018) / Municipalidad Provincial de San Martín/INEI (2017).

Table 2. Distribution of the architects' sample, municipal officials and residents of Tarapoto City, 2020.

Condition	Gender		TOTAL
	Men	Women	
Workers	10	10	20
Architects	18	12	30
Citizens	177	157	334
Total	205	179	384

Source: Colegio de Arquitectos Regional San Martín (2018) / Municipalidad Provincial de San Martín/INEI (2017).

RESULTS

Table 3 shows that 66.67% of the architects, municipal officials and Tarapoto City residents consider an efficient level of the strategies implemented by the municipal management, while 27.08% consider a regularly efficient level, and 6.25% consider a deficient level. Consequently, it is identified that the strategies implemented by the municipal management in Tarapoto City have a predominantly efficient level. Results that can be compared with the Boscán research (2019), who concludes that sustainable urban management, linked to institutional strategic processes, makes cities the space for adaptation to such changes and complexities.

Table 3. Strategy levels implemented by municipal management in Tarapoto City, (2020)

Levels	Implemented strategies	
	f	%
Very poor	0	0.00
Deficient	24	6.25
Regularly efficient	104	27.08
Efficient	256	66.67
Very efficient	0	0.00
Total	384	100

Table 4 shows that the level with the highest prevalence is the efficient level, obtaining 45.05% in the institutional dimension, 42.45% in territorial programs, 62.76% in social control, 47.14% in access to information, 49.74% in accountability, 63.28% in spatial relation, 53.13% in resource allocation, 48.70% in technology and communication, and 56.77% in project execution. These results can be compared by the research of Molina (2018), who concluded that public policy aimed at satisfying social requirements has been shaping the scenario of comprehensive well-being in people.

Table 4. Dimension levels of the strategies implemented by municipal management in Tarapoto City, 2020

Levels		Very poor	Deficient	Regularly efficient	Efficient	Very efficient	TOTAL
Institutionality	f	0	39	140	173	32	384
	%	0.00	10.16	36.46	45.05	8.33	100
Territorial programs	f	0	60	143	163	18	384
	%	0.00	15.63	37.24	42.45	4.69	100
Social control	f	0	59	84	241	0	384
	%	0.00	15.36	21.88	62.76	0.00	100
Access to information	f	0	48	106	181	49	384
	%	0.00	12.50	27.60	47.14	12.76	100
Accountability	f	15	70	99	191	9	384
	%	3.91	18.23	25.78	49.74	2.34	100

Spatial relationship	f	0	37	78	243	26	384
	%	0.00	9.64	20.31	63.28	6.77	100
Resource allocation	f	0	54	110	204	16	384
	%	0.00	14.06	28.65	53.13	4.17	100
Technology and communication	f	0	53	130	187	14	384
	%	0.00	13.80	33.85	48.70	3.65	100
Projects execution	f	0	14	118	218	34	384
	%	0.00	3.65	30.73	56.77	8.85	100

Table 5 shows that 63.54% of the architects, municipal officials and residents of Tarapoto City consider a good sustainability level of recreational public spaces in Tarapoto City, while 23.18% consider a regular level, 7.03% a very good level and 6.25% a bad level. Consequently, it is identified that the sustainability of recreational public spaces in Tarapoto City has a predominantly good level. These results can be compared with the research by García (2017), who concluded that urban planning and planning projects and instruments with their different names depending on the system regulated by each country or region: general, partial, territorial planning, intercommunal plans , regional, sectional, etc., and above all those that define the public space design as a mechanism for urban sustainability, open space projects, urbanization and the like are eminently managed under local governance criteria.

Table 5. Sustainability levels of recreational public spaces in Tarapoto City, 2020

Levels	Public-recreational spaces sustainability	
	f	%
Very bad	0	0.00
Bad	24	6.25
Regular	89	23.18
Good	244	63.54
Very good	27	7.03
Total	384	100

Table 6 shows that the level with the highest prevalence is the good level, obtaining 46.88% in the design and equipment dimension, 42.97% in accessibility, 54.95% in safety, 43.49% in environmental quality, and comfort. 56.25% and 42.19% in social appropriation. Results that are related to the study by Pérez (2016), who concluded that the characteristics of urban centers, in addition to the potential they have for the paradigms incorporation of sustainable criteria, allow defining a comprehensive planning model based on regeneration and evolution of public spaces. Likewise, it is observed that 57.8% of the architects, municipal officials and residents of Tarapoto City consider that the strategies implemented by the municipal management are efficient and the sustainability of recreational public spaces is good. On the other hand, the results shown in Table 7 suggest that the strategies implemented by municipal management significantly improve ($p < 0.01$) the sustainability of recreational public spaces in Tarapoto City. In that order, it is observed that the adjustment coefficient ($R2 = 0.938$) suggests that the 93.8% variation of the recreational public spaces sustainability is explained by the strategies implemented by the municipal management. These results can be compared with the research of Schroeder and Torres (2020), who conclude that different actions have been carried out such as collaborative analysis activities, participatory design workshops with citizens, mapping, strategies to promote local identity and awareness about public spaces and implementation of parks with the involvement of the population.

On the other hand, Table 7 shows that the architects, municipal officials and residents of Tarapoto City consider that the strategies implemented by municipal management through social control, design and equipment, accessibility and safety are efficient and sustainability recreational public spaces is good, with which it is evidenced that said strategies implemented by municipal management significantly improve the sustainability of recreational public spaces in Tarapoto City 2020. These results can be complemented with the research of Mendoza (2019), who concludes that urban environmental factors of public spaces significantly influence the collective social self-esteem of the population of the Laura Caller Human Settlement of Los Olivos. Therefore, it is specified that if urban environmental factors are improved and public spaces are better used, the collective social self-esteem of the population of the Laura Caller Human Settlement will be improved. Likewise, such results can be supported by the theory on the humanization of public space, where it is considered essential that, when designing the city, the influence it produces on social life is not lost sight of: The physical framework can influence to a greater or lesser

extent in the social situation of the inhabitants. The physical frame itself can be designed so that desirable forms of contact are hampered or even impossible. Architecture can literally be an obstacle to desirable activity patterns. Therefore, the urban planning paradigm of Gehl (2014) can be understood as a reaction to the primacy that modern functionalism gave to the construction of roads and highways for automobiles as a synonym of progress for cities and that they forgot to the human scale.

In relation to the design and equipment in the sustainability of recreational public spaces, according to Acosta (1993) they constitute a captivating activity that, like architectural design, implies the need for artistic sensitivity, social awareness and technical capacity. That is why the adequate proposal of urban design contributes not only to the execution of public or private works of high aesthetic and constructive quality, but to the extent that the constituent elements of the same are contemplated, which necessarily implies the existence of, as Acosta proposes well, of the harmony between the link between artistic sensitivity, social conscience and obviously the technical capacity that will allow to raise the constructive quality of the design. The homogeneity in the type of constructions, heights, materials, colors, etc., of the buildings produces a monotonous, tired urban landscape that is unlikely to be retained in our memory.

On the other hand, Castro (2011) points out that accessibility is an indicator of the distance that separates an inhabitant of the city from the places where he can satisfy his needs, in such a way that accessibility has an impact on the life quality of its inhabitants, understood as the satisfaction degree of the population essential needs: health, housing, food, work, income, etc. as well as other needs related to their social and physical environment, such as their political participation, cultural and leisure activities, among others. The phenomenon of accessibility is interrelated with urban planning, infrastructures and equipment, which should ensure a universal accessibility condition, free of physical and social barriers that constitute the most autonomous and natural way possible.

In relation to safety in the public recreational spaces sustainability, the results obtained can be compared with what is specified by Jiménez (2014), who points out that in the sustainability of public recreational spaces it must have good maintenance, control, administration and promote citizen participation as the main actor for the achievement of a sustainable public space. In addition, it is an opportunity to strengthen citizenship. It contributes to improving the distribution, articulation, access, identity, use frequency, power, of public spaces, developing self-esteem and social relationships, improving urban life. Being one of the municipal management objectives in addition to civic rights (housing, education, health, etc.) urban rights, through the development of policies and public spaces projects, being able to co-finance them with other administrations.

Table 6. Dimension levels of recreational public spaces sustainability in the Tarapoto City, 2020

Levels	Design and equipment		Accessibility		Safety		Environmental quality		Comfort		Social appropriation	
	f	%	f	%	f	%	f	%	f	%	f	%
Very bad	16	4.17	8	2.08	31	8.07	24	6.25	15	3.91	18	4.69
Bad	45	11.72	60	15.63	39	10.16	61	15.89	30	7.81	38	9.90
Regular	107	27.86	142	36.98	69	17.97	107	27.86	52	13.54	51	13.28
Good	180	46.88	165	42.97	211	54.95	167	43.49	216	56.25	115	29.95
Very good	36	9.38	9	2.34	34	8.85	25	6.51	71	18.49	162	42.19
Total	384	100	384	100	384	100	384	100	384	100	384	100

Table 7. Strategies implemented by municipal management and sustainability indicators of recreational public spaces in Tarapoto City, 2020

Municipal management strategies	Recreational public spaces sustainability		
	Spearman rank correlation		Determination coefficient
	Coefficient	P value	
	0.935	0.000	0.938
Dimension			
Institutionality	0.692	0.000	0.591
Territorial programs	0.589	0.000	0.561
Social control	0.680	0.000	0.646

Access to information	0.619	0.000	0.448
Accountability	0.589	0.000	0.457
Spatial relationship	0.612	0.000	0.332
Resource allocation	0.653	0.000	0.585
Technology and communication	0.585	0.000	0.501
Projects execution	0.478	0.000	0.465
Design and equipment	0.703	0.000	0.677
Accessibility	0.724	0.000	0.699
Safety	0.684	0.000	0.688
Environmental quality	0.511	0.000	0.353
Comfort	0.447	0.000	0.186
Social appropriation	0.474	0.000	0.303

CONCLUSIONS

It was identified that the strategies implemented by the municipal management in Tarapoto City have a predominantly efficient level. It was identified that the sustainability of recreational public spaces in Tarapoto City has a predominantly good level. Finally, it is observed that the architects, municipal officials and Tarapoto City residents consider that the strategies implemented by municipal management through social control, design and equipment, accessibility and safety are efficient and the sustainability of recreational public spaces is good, which shows that said strategies implemented by municipal management significantly improve the sustainability of recreational public spaces in Tarapoto City in 2020.

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