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Public Expenditure Quality and Municipal Water Service Sustainability: Diagnosis and Intervention Design in Picota, Peru

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ABSTRACT: Public expenditure quality and municipal water service continuity must be assessed using distinct administrative indicators and institutional perceptions. This study aimed to characterise both variables in 2025 in a district municipality in Picota Province, Peru, and to design an intervention proposal. An applied, quantitative, non-experimental, cross-sectional study with a descriptive and proposal-oriented design was conducted. Of 111 registered employees and contractors, 67 were initially selected by convenience, and 53 participated. Two 25-item questionnaires were used, with a reported Aiken's V of 0.97 and Cronbach's alpha coefficients of 0.98 and 0.97. Public expenditure was rated high by 64.15% of respondents, while 62.26% assigned the same rating to services. Programme 0083 accounted for 2.17% of the initial institutional budget; the recorded water supply was 12 hours per day, and 312 of 620 users had overdue payments (50.32%). A nine-component intervention was developed with a projected budget of PEN 52,000 and a planned 12-month pilot. Five experts awarded the proposal 401 out of 405 possible points (99.01%). This technical appraisal does not establish the intervention's effectiveness following implementation.

PLAIN ENGLISH SUMMARY

A 2025 assessment in a district municipality in Picota Province, Peru, examined staff perceptions of public spending and water services alongside administrative records. Although staff assessments were generally favourable, water was supplied for 12 hours per day, and 312 of 620 registered users had overdue payments. Researchers designed a nine-part, 12-month intervention proposal with a projected budget of PEN 52,000. Five experts reviewed the design, but the proposal has not yet been implemented or shown to improve water service outcomes.

1. INTRODUCTION

Access to a continuous and safe water supply depends both on service providers' technical capacity and on public-sector decisions governing the allocation, execution, and oversight of resources. The World Health Organization (WHO, 2023) recognises drinking-water safety as a component of public health protection. Likewise, the United Nations Educational, Scientific and Cultural Organization and UN-Water (UNESCO and UN-Water, 2023) documented global gaps in access to water and sanitation. From a public management perspective, these shortfalls call for a distinction between budget allocations, funded outputs, and the actual conditions under which services are delivered.

Research on water distribution networks indicates that infrastructure expansion alone does not ensure a continuous supply. Milman et al. (2021) examined the challenges involved in sustaining piped water systems, whereas Godinez Madrigal et al. (2022) identified the limitations of supply-expansion strategies that fail to address institutional and distributional constraints. In rural settings, Gansauer et al. (2023) described how organisational capacity and governance arrangements shape the operation of small-scale systems. Similarly, Murei et al. (2022) documented barriers to implementing water and sanitation safety plans in

South African communities, while Gemeda et al. (2021) demonstrated that classifying a system as functional does not necessarily establish its microbiological safety.

The allocation of responsibilities, oversight of service operators, and user participation also influence performance. Albalate et al. (2021) investigated the return of certain local services to municipal provision, while Esteve et al. (2024) showed that accountability mechanisms involving users help explain performance differences across service delivery arrangements. Experiences of public participation and rights-based claims documented by Masiangoako et al. (2022), together with the access constraints described by Moody et al. (2022), support treating continuity, equity, and oversight as distinct dimensions of service quality.

In Latin America, the relationship between perceived quality and service provision needs to be examined within its institutional context. Rodríguez-Correa et al. (2022) assessed perceived water service quality in Medellín, while López Moncada (2023) investigated service quality and user satisfaction with sanitation services in northern Peru. Méndez (2023), in turn, analysed health-related parameters of water intended for human consumption, underscoring the distinction between perceptions of service delivery and physicochemical or microbiological measurements. The Economic Commission for Latin America and the Caribbean (ECLAC, 2022, 2024) placed investment in water, sanitation, and water governance within the regional agenda for closing service gaps and adapting to changing environmental conditions.

In Peru, the National Sanitation Plan 2022–2026 calls for coordinated investment, capacity building, and sustainable service provision (Ministry of Housing, Construction and Sanitation [MVCS], 2021). In San Martín, the regional government approved an update to the Regional Sanitation Plan 2024–2027 (Regional Government of San Martín, 2024). However, without local management data, sectoral planning does not reveal how resources are distributed among maintenance, operations, oversight, and coverage improvements. The legal framework governing local public services defines municipal responsibilities that must be examined alongside budgetary capacity (Zegarra Valdivia, 2020; Quezada Rodríguez, 2021).

In a district municipality in Picota Province, the 2025 assessment recorded water supply for 12 hours per day and a storage system that had been in use for more than 20 years. According to budget data compiled from the Ministry of Economy and Finance's expenditure database (MEF, n.d.), the initial allocation to budget programme 0083 accounted for 2.17% of the district's 2025 initial institutional budget. The municipal register for August of that year listed 620 users, 312 of whom had outstanding payments. These administrative indicators raise a question distinct from staff perceptions: which planning and oversight arrangements should be incorporated into a proposal for reallocating and monitoring expenditure?

The gap addressed here is the lack of an operational approach that integrates a budgetary assessment, an evaluation of water service dimensions, and an expert-appraised intervention design within a small local government. The study aimed to characterise public expenditure quality and municipal water services during 2025, develop a management model addressing the constraints identified, and examine experts' assessments of its content and applicability. The study was not designed to estimate causal effects or demonstrate subsequent changes in service indicators.

1.1. Theoretical framework

Public expenditure quality concerns the relationship between allocated resources, management processes, and outcomes of collective interest. The new public management approach developed by Hood (1991) placed performance measurement and output control at the centre of administrative analysis. More recently, Adrianzén et al. (2022) linked state modernisation to efficiency, transparency, and responsiveness, whereas Sánchez González (2023) differentiated the assumptions of results-oriented management from those of governance based on deliberation and citizen participation. In the present study, the first variable was defined in terms of effectiveness, resource-use efficiency, transparency, and accountability.

Bureaucratic structures also condition implementation capacity. Kettl (2022) examined tensions between administrative organisation and contemporary complexity; Borry and Reuter (2022) incorporated a human rights-based approach into the assessment of bureaucracy; and Langer (2022) explored the relationship between formal rationality and substantive criteria for public action. Together, these perspectives support an analytical distinction: the existence of transparency procedures neither determines the resources allocated to maintenance nor guarantees water supply continuity. Assessing transparency mechanisms also requires observable accountability criteria (Vera Martínez, 2023).

Peruvian studies of public expenditure help distinguish budget execution from expenditure quality. Carranza et al. (2022) examined expenditure execution and quality in a local government, while Bazán et al. (2022) addressed macroeconomic

relationships between public expenditure and economic growth. These levels of analysis are not interchangeable: the share of the initial budget allocated to sanitation indicates a relative priority but does not directly measure technical efficiency, bacteriological quality, or the social impact of spending. Huamaní Cayllahua et al. (2022) investigated local public services and citizen satisfaction; because the present study did not directly survey service users, the units of observation must remain clearly differentiated.

The financial dimension encompasses the capacity to sustain operations, maintenance, and asset renewal under budgetary and tariff constraints. Villar Rojas (2023) framed the financial sustainability of public services in terms of service stability and cost control. Accordingly, jointly assessing outstanding accounts, institutional perceptions, and daily supply hours provides distinct inputs for priority setting, but no single measure establishes the overall quality of service delivery.

Expenditure effectiveness and efficiency are related but distinct dimensions. Effectiveness concerns the alignment of public resources with institutional objectives, whereas efficiency refers to the organisation of processes and resources to deliver specified outputs. Transparency and accountability add further dimensions through which information access, the allocation of responsibilities, and oversight mechanisms can be assessed. Public management reforms examined by Adrianzén et al. (2022) and Sánchez González (2023) located these components within a results-oriented framework, while Esteve et al. (2024) provided comparative evidence on user-facing incentives and responsibilities in outsourced services. These perspectives do not imply that high institutional perception scores guarantee a particular level of investment or a material standard of supply: independent records of continuity, coverage, quality, and cost are needed to evaluate service provision. This distinction is particularly important when respondents are municipal officials and contracted personnel rather than households receiving the service.

The public services variable was operationalised across four dimensions: access, perceived quality, distribution efficiency, and financial sustainability. Access encompasses both geographical and temporal availability, whereas sanitary quality requires evidence beyond respondents' opinions. Gemeda et al. (2021) showed that infrastructure functionality does not establish microbiological safety; Milman et al. (2021) and Gansauer et al. (2023) examined the operational and governance conditions influencing the sustainability of small-scale systems. Financial sustainability incorporates revenue collection capacity and the maintenance of recurring activities, consistent with Villar Rojas (2023). Within these boundaries, the model brings together four expenditure dimensions and four service dimensions through a sequence of diagnosis, formulation, content validation, and planned subsequent evaluation. Comparing budgetary records with survey findings does not replace an impact assessment; rather, it supports the development of a proposal with indicators that will require independent measurements during implementation.

2. MATERIALS AND METHODS

2.1. Study design

An applied, quantitative, non-experimental, cross-sectional study with a descriptive and proposal-oriented scope was conducted in 2025. Municipal employees' perceptions and the available administrative records were described to inform a proposal that was subsequently submitted for expert appraisal. The design included no comparison groups, experimental allocation, or post-intervention measurement; consequently, causal effects were not estimated (Manterola et al., 2023; Maier et al., 2023).

2.2. Participants and sampling

The institutional staff register for August 2025 listed 111 individuals. A non-probability convenience selection initially identified 67 municipal staff members and contracted service providers: five municipal council members, one mayor, 34 payroll employees, and 27 long-term contractors performing administrative duties. External contractors, personnel assigned to specific agreements or projects, public works employees with less than five months of service, and those on leave or holiday were excluded. The final survey sample comprised 53 participants; the other 14 individuals were not included in the analytical dataset because of operational absences or non-consent, without a documented individual breakdown. Each staff member constituted a unit of analysis. Water service users were examined only through aggregated administrative records and did not take part in the surveys (Casteel & Bridier, 2021).

2.3. Instruments and administrative sources

Two questionnaires developed for the study were administered, each comprising 25 items rated on a five-point scale (1 = strongly disagree; 5 = strongly agree). The public expenditure questionnaire covered effectiveness (5 items), efficiency (10),

transparency (5), and accountability (5); the services questionnaire addressed access (5), quality (8), distribution efficiency (4), and financial sustainability (8). Five experts assessed adequacy, clarity, coherence, and relevance using a five-category ordinal rubric. Aiken's V was 0.97 for each instrument. A pilot study involving 39 public servants with similar characteristics yielded Cronbach's alpha coefficients of 0.98 for public expenditure and 0.97 for services. Neither dimension-specific coefficients nor an analysis of internal structure were available; therefore, overall internal consistency was not treated as conclusive evidence of construct validity.

The administrative indicators comprised the proportion of the initial institutional budget allocated to programme 0083, daily hours of water availability, and the municipal register of service users and outstanding payments as of August 2025. Staff responses concerning payment compliance were explicitly distinguished from the arrears rate calculated using user records. Staff responses concerning water quality were treated as perceptions rather than laboratory findings.

2.4. Data collection and analysis

Responses were compiled in Microsoft Excel, and frequencies and percentages were calculated. Each questionnaire had a theoretical total score ranging from 25 to 125 points. For both overall variables, the thresholds specified in the methodological matrix were used: low (25–58), moderate (59–91), and high (92–125).

Questionnaires were administered to staff members available during the 2025 data collection period. Supplementary indicators were obtained from the Ministry of Economy and Finance budget database and the municipal register of users and outstanding debts as of August 2025. The administrative arrears rate was calculated as (users in arrears/registered users) × 100; the proportion concerning timely payment was based on an ordinal staff response and was reported separately.

The questionnaire forms included an explicit yes/no consent option, provisions for voluntary participation, and a commitment to anonymous publication of the results. The study documentation states compliance with the Research Ethics Code of César Vallejo University (University Council Resolution No. 0659-2024/UCV).

3. RESULTS AND DISCUSSION

3.1. Results

Overall scores were concentrated in the high category for both variables. Nevertheless, dimension-level distributions revealed differences between perceptions of budget management and service operations. Table 1 presents the counts and percentages obtained from the 53 valid questionnaires.

Table 1. Distribution of variable and dimension ratings (n = 53)

Variable/dimension	Low, n (%)	Moderate, n (%)	High, n (%)
Public expenditure, overall	1 (1.89%)	18 (33.96%)	34 (64.15%)
Expenditure effectiveness	6 (11.32%)	15 (28.30%)	32 (60.38%)
Expenditure efficiency	2 (3.77%)	19 (35.85%)	32 (60.38%)
Transparency	1 (1.89%)	14 (26.42%)	38 (71.70%)
Accountability	3 (5.66%)	10 (18.87%)	40 (75.47%)
Water services, overall	0 (0.00%)	20 (37.74%)	33 (62.26%)
Service access	2 (3.77%)	14 (26.42%)	37 (69.81%)
Perceived quality	1 (1.89%)	24 (45.28%)	28 (52.83%)
Distribution efficiency	0 (0.00%)	20 (37.74%)	33 (62.26%)
Financial sustainability	0 (0.00%)	26 (49.06%)	27 (50.94%)

Note. Percentages were derived from the frequency distributions reported in the questionnaires and calculated using the 53 completed responses. Categories represent municipal staff perception scores; they do not constitute an objective expenditure audit or a citizen survey.

Of the respondents, 66.04% agreed or strongly agreed that budget allocations enabled the service to meet its operational objectives, while 50.95% considered that they ensured territorial equity. Regarding service provision, 81.13% reported daily access, although the administrative assessment recorded only 12 hours of supply per day; 66.04% perceived access to be equitably distributed. Survey ratings of water quality did not replace independent sanitary testing.

Institutional records revealed a further distinction: 52.83% of staff disagreed that users met their monthly payment obligations, whereas administrative arrears affected 312 of 620 registered connections (50.32%). The former percentage reflects responses to a questionnaire item, while the latter concerns outstanding obligations recorded in the municipal user register. Table 2 presents the diagnostic indicators and their measurement scope.

Table 2. Administrative and perception-based indicators used in the intervention design

Indicator	2025 value	Source/interpretation
Survey participants	53 of 67 initially selected	Municipal staff survey; convenience sampling
Allocation to programme 0083	2.17% of the district initial budget	Programme share of the initial institutional budget; not equivalent to executed expenditure
Daily supply continuity	12 h/day	Local assessment of water availability
Accounts in arrears	312 of 620 (50.32%)	Municipal register, August 2025
Disagreement about timely payment	52.83%	Respondents' perceptions; item 20 of the services questionnaire
Reservoir age	More than 20 years	Infrastructure description provided in the assessment

Source: study survey and administrative records.

The proposed model comprised nine components addressing the shortcomings identified. Table 3 sets out their planned mechanisms of action, operational responsibilities, and monitoring indicators. These indicators and targets form part of the design and are not implementation outcomes.

Table 3. Model components and proposed operational mechanisms

Planned component and action	Indicator or verification evidence	Responsible unit/planned schedule
Expenditure planning (GpR)	Align programme 0083 with PEI/POI and targets; proportion of expenditure linked to indicators; SIAF and CEPLAN reports	Planning and budget unit; months 1–6
Preventive maintenance (SGMP)	Schedule system interventions; record compliance with the maintenance plan and faults; operational logs (baseline pending)	Public services and technical team; pilot programming

Planned component and action	Indicator or verification evidence	Responsible unit/planned schedule
Technical capacities (DDC)	Practical training in SIAF/SIGA/CEPLAN; share of certified personnel (proposed target ≥90%)	Administration and technical managers; months 1–4
Water expenditure transparency (PTAGH)	Publish targets, spending, and records; verify the frequency of reporting and incidents	Administration and transparency units; throughout the pilot
Social oversight and auditing (SAS)	Accountability channels and activity monitoring; meeting minutes and oversight reports	Council members, internal control, and citizen participation; throughout the pilot
Water infrastructure	Prepare a modernisation project portfolio and supply-continuity system; hours of service (proposed target ≥18 h/day, contingent on implementation)	Technical services unit; subsequent design and project management
Territorial equity (PIEH)	Prioritise investments by area; physical project progress and territorial coverage (proposed target ≥95% of physical implementation)	Planning and public services; design during months 4–9
Sanitary monitoring (PMS-CP)	Formalise laboratory testing and verifiable disclosure of results; frequency and outcomes according to protocol	Sanitary technical unit and competent officials; throughout the pilot
Economic sustainability	Improve billing, collections, and payment culture; administrative arrears (proposed target <30%)	Tax administration and revenue collection; months 7–12

Source: proposed intervention model; indicators and targets are prospective, not observed outcomes.

The proposal included a planned 12-month pilot and a projected budget of PEN 52,000, allocated across four operational areas (Table 4). The schedule assigned capacity development to months 1–4, budget restructuring to months 1–6, water infrastructure investment planning to months 4–9, and the sustainability strategy to months 7–12. Projected allocations do not represent expenditure already incurred. Five experts completed 45 ratings against nine criteria, each scored on a scale of up to nine points: 41 ratings of nine and four ratings of eight. The aggregate score was 401 out of 405, or 99.01% (401/405 × 100; mean aggregate score of 44.5556 out of 45 per criterion). This score represents the assessment obtained on the appraisal rubric, not effectiveness, predictive validity, or confirmed financial feasibility.

Table 4. Projected budget for the proposed pilot by strategic area

Proposed strategic area	Budgeted activity	Estimated cost (PEN)
Results-based planning (GpR)	Restructuring of programme 0083, update of PEI/POI, and software design	21,480.00
Capacity development (DDC)	In-person mentoring, technical assistance, and logistics	2,800.00

Proposed strategic area	Budgeted activity	Estimated cost (PEN)
Strategic water infrastructure plan (PIEH)	Consultancy for the design and approval of the plan	5,000.00
Sustainability and payment culture	Collection activities, awareness raising, and revenue system upgrade	22,720.00
Total projected	12-month pilot (excluding capital expenditure on equipment)	52,000.00

Note. Amounts are planning estimates, not executed budget expenditure. The infrastructure component covers the design of a plan rather than the construction of works. Interinstitutional technical support and the use of existing equipment were considered. Sources: resource matrices and the intervention project schedule.

3.2. Discussion

The principal finding was the coexistence of predominantly favourable institutional ratings with observable constraints on supply continuity, budgetary prioritisation, and revenue collection. This difference is not a statistical contradiction: questionnaires captured the perceptions of a group of municipal staff members, whereas administrative records documented operational measures of a different nature. Comparing these sources informs the model's formulation but does not demonstrate that perceived expenditure quality causally explains water supply continuity.

From a budgetary perspective, the 2.17% share of the initial institutional budget allocated to programme 0083 describes the relative weight of rural sanitation in the 2025 initial budget; it does not, by itself, establish underexecution or inefficiency. This distinction is consistent with the performance measurement problem raised by Hood (1991): resources, processes, and outcomes constitute separate units of analysis. Carranza et al. (2022) investigated the relationship between local budget execution and expenditure quality, whereas Bazán et al. (2022) studied macroeconomic effects of public expenditure. The present evidence concerns municipal operational management and cannot therefore be extrapolated to aggregate economic performance. The proposed model links allocation indicators to verifiable activities, consistent with the administrative improvement agendas described by Adrianzén et al. (2022).

Higher ratings for transparency and accountability than for effectiveness and efficiency distinguish different administrative functions. The perceived dissemination of information may coexist with investment levels insufficient to meet specific maintenance needs. Kettl's (2022) and Langer's (2022) accounts of administrative coordination and rationality, together with the rights-based perspective discussed by Borry and Reuter (2022), support distinguishing formal compliance from substantive outcomes. The accountability arrangements reviewed by Vera Martínez (2023) further justify incorporating institutional oversight and public access to budget information. Sánchez González (2023) situates these elements within a framework combining results-based management and public participation.

The reported 12-hour daily supply should be interpreted as a municipality-level measure of service continuity, not as a measurement of potability. Milman et al. (2021) examined the challenge of sustaining piped services, while Godinez Madrigal et al. (2022) highlighted the importance of considering institutional alternatives to expanding physical supply. For small-scale systems, Gansauer et al. (2023) documented limitations in management capacity; the barriers described by Murei et al. (2022) point to the need to integrate safety, operations, and responsibility arrangements. The proposed scheduled-maintenance component addresses these combined concerns, although its effect on service interruptions will require subsequent observation.

Perceived water safety should likewise not be equated with microbiological test results. Gemeda et al. (2021) identified differences between functional classifications and the microbiological quality of water supplies, while Méndez (2023) examined sanitary quality parameters for drinking-water sources. Accordingly, the model includes a protocol for monitoring and communicating laboratory results. This distinction clarifies interpretation of the service quality dimension, which received a high rating from 52.83% of staff members but did not constitute certification of water safety.

The financial assessment identified outstanding payments from more than half of registered users. The proximity of that proportion to staff disagreement regarding monthly payments does not make the two measures equivalent. Villar Rojas (2023) linked service sustainability to financial stability, while Esteve et al. (2024) reported performance differences associated with user accountability arrangements. Against this background, the proposed collection improvements address the need to record revenues and liabilities using administrative indicators that can be compared over time. The literature on remunicipalisation discussed by Albalate et al. (2021) also demonstrates that organisational arrangements do not substitute for assessing specific management mechanisms.

Latin American research provides two complementary points of comparison. Rodríguez-Correa et al. (2022) and López Moncada (2023) examined users' perceptions of service quality, whereas Huamaní Cayllahua et al. (2022) investigated citizen satisfaction with local public services. In Picota, the respondents were municipal employees and contracted personnel; consequently, the study provides no direct evidence of household satisfaction. This limits direct comparison and identifies household user surveys as an avenue for future research. The community participation documented by Masiangoako et al. (2022), together with the inequalities in access examined by Moody et al. (2022), also supports including geographically disaggregated monitoring and complaint channels rather than treating a municipality-wide average as a sufficient coverage indicator.

The regulatory and sectoral framework is consistent with the national priorities established by the MVCS (2021) and San Martín's updated regional plan (Regional Government of San Martín, 2024). At the regional level, ECLAC (2022, 2024) has examined investment and governance needs for basic services, while indicators reported by WHO (2023) and UNESCO and UN-Water (2023) provide reference points for water access and safety that should not be confused with locally measured outcomes. Legal analyses by Quezada Rodríguez (2021) and Zegarra Valdivia (2020) establish service continuity as a public responsibility whose fulfilment depends on verifiable institutional conditions.

Five experts assessed nine aspects of the proposal and awarded a combined score of 401 out of 405 (99.01%). This figure represents the observed appraisal score and is neither a probability of success nor an impact estimate or certification of budgetary feasibility. Future evaluations will require a baseline for each key performance indicator (KPI), clear differentiation between perceptual and administrative measures, and a temporal comparison using a design capable of assessing improvements actually achieved.

4. CONCLUSION

The 2025 assessment identified a disparity between municipal staff members' favourable evaluations of expenditure quality and the water service, and administrative indicators of continuity, budget allocations, and payment recovery. Rural sanitation accounted for 2.17% of the initial budget, recorded supply lasted 12 hours per day, and 312 of 620 registered users were in arrears (50.32%). The 52.83% disagreement regarding payment compliance reflects an institutional perception and must not be substituted for the administrative arrears rate.

On this basis, a nine-component model was developed encompassing budget planning, maintenance, staff capacity, transparency, oversight, infrastructure, territorial equity, sanitary monitoring, and revenue recovery. The design included a projected budget of PEN 52,000 and a 12-month pilot. Five experts awarded 401 out of 405 points, equivalent to 99.01% of the rubric's maximum score. This finding describes a technical appraisal of the proposal rather than demonstrated improvements in service continuity or quality. The study's contribution lies in integrating perceptual findings and administrative indicators into a verifiable intervention whose effectiveness will need to be assessed following implementation.

4.1. Limitations

Convenience sampling and the final sample of 53 participants from a single municipality limit the generalisability of the proportions to other institutions and the service-user population. The cross-sectional design precludes causal inference and the identification of temporal trends. Questionnaires measured staff perceptions without independent microbiological testing or direct household surveys. Only aggregate content-validity coefficients were available, without item-level ratings needed to reproduce their statistical precision; exact survey dates, administration time, a breakdown of non-responses, and specific handling of missing values were not documented. Budget data for programme 0083 referred to the initial institutional budget, not a product-level efficiency audit. Finally, the model underwent expert appraisal but was not implemented, and no follow-up measurements of its targets were collected.

4.2. Future research

The proposed model provides a monitoring framework for organising responsibilities, sources of verification, costs, and timelines for the planned pilot. Before implementation, consistent baselines should be established for actual hours of supply, programme 0083 budget execution, revenue collection, and laboratory results; the proposed targets must not be confused with observed outcomes. Subsequent research could compare pre- and post-implementation periods and, where an appropriate reference group is available, assess changes through a prespecified quasi-experimental design. User-level information and geographically disaggregated measures of continuity and satisfaction are also needed, alongside assessments of operating costs, sanitary conditions, and distributional effects. Progress must be verified using dated, auditable municipal records rather than staff perceptions alone.

5. DECLARATIONS

5.1. Ethics approval and informed consent

The questionnaire forms included an explicit yes/no consent option, provisions for voluntary participation, and a commitment to anonymous publication of the results. The study documentation states compliance with the Research Ethics Code of César Vallejo University (University Council Resolution No. 0659-2024/UCV).

5.2. Use of artificial intelligence

ChatGPT (OpenAI) was used to support the adaptation of the manuscript to the journal template, the organisation of sections, and English-language translation and editing. The numerical results, findings, interpretations, and bibliographic references were not independently generated by the tool. The author is responsible for reviewing and confirming the manuscript content.

5.3. Conflict of interest

The author declares no conflicts of interest.

5.4. Funding

The research was self-funded.

5.5. Data availability

The analysis used aggregated questionnaire data and municipal administrative documentation. No verifiable public repository containing individual-level data was identified. Any future access to individual records will require authorisation and safeguards for confidentiality.

5.6. Author contributions

[The sole listed author should confirm specific contributions to conception, design, data collection, analysis, writing, and manuscript approval.]

5.7. Acknowledgements

[To be completed by the author, if applicable.]

Editorial verification: A study-specific ethics committee approval identifier was not provided in the source manuscript; the institutional research ethics code cited above is not automatically equivalent to study approval.

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