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Technical-Social Governance for the Management of Health Services in A Healthcare Network in Peru, 2024

Víctor Antonio Perales Fabian[1]

Abstract

This study aligns with Sustainable Development Goal No. 17: Partnerships for the Goals, and aims to support the strengthening of technical-social governance in the management of healthcare services within a Peruvian healthcare network. It follows a quantitative, applied, non-experimental and descriptive approach. The study engaged 500 healthcare and administrative professionals from 23 health facilities, who shared their perspectives through validated surveys. Three core dimensions were examined: institutional, economic, and social. Results showed that the institutional dimension was perceived more positively, while the economic and social aspects revealed weaknesses in financial efficiency, citizen participation, and equity. Statistical analysis (ANOVA, $p < 0.05$) confirmed significant differences across dimensions, validating the study's hypothesis. The findings suggest that integrating these dimensions is essential for improving governance in health services. Strengthening management transparency, ensuring fair resource allocation, and promoting inclusive community involvement emerge as crucial steps forward.

Keywords: *Governance, Public Health, Institutional Management, Social Participation, Health Policies.*

Introduction

The coronavirus pandemic, declared in March 2020, caused an unprecedented global health impact, with millions of deaths and tens of millions of confirmed infections. In addition to the human toll, the crisis exposed structural flaws in the management of public policies, revealing weaknesses in both the health response and economic and social management. (Martínez-Córdoba et al., 2021)

In the Americas, the magnitude was particularly high: 186,265,607 cases and 2,891,057 deaths were reported by January 4, 2023, accounting for a significant share of the global total and exacerbating inequalities in access to timely care, especially in indigenous and Afro-descendant populations. In Europe, another related issue was the fragmentation and heterogeneity of community health services, which hindered continuity and personalization of care, highlighting the need for clear organizational frameworks and integrated policies with a multidisciplinary approach, including the contribution of nursing. (OPS, 2023; Caponnetto et al., 2024)

From a governance perspective, patterns of disorganization between actors and levels of government were observed, affecting the effectiveness of health management. For instance, in Wales, duplication, inefficient resource distribution, and weaknesses in accountability were reported, along with limited community participation in decision-making. These types of failures are linked to access and quality inequities related to socio-economic, cultural, and geographical factors, demanding that managers overcome resource shortages, internal resistance, and information gaps through organizational transformations focused on equity. (Krczal & Behrens, 2024; Chioma Anthonia Okolo et al., 2024)

Studies also show that funding and evidence-related issues affect the sustainability of services. In Pakistan, the Essential Health Services Package faced budgetary constraints, low availability of interventions, and data limitations for cost estimation, complicating planning. In the United States, insufficient and fragmented public health funding (only 2.5% of total health spending) was described,

[1] ORCID: https://orcid.org/0000-0001-7130-2370, Correo: pfabianv@ucvvirtual.edu.pe

with local departments reporting budget cuts and reliance on categorized funds that reduced flexibility, making structural reforms urgent. (Raza et al., 2024; Orr et al., 2024)

Comparative evidence strengthens the idea that inequality spans multiple components of the system: in India, income and geographic gaps were documented in reproductive, maternal, and child health services, suggesting the inclusion of social dimensions like ethnicity for more effective policies. In Brazil, public system users reported access difficulties, patient safety issues, and lack of functionality, pointing to the need for reforms to sustain universal coverage. At the same time, challenges related to talent management and diversity (resistance to change and cultural barriers) and shortages of specialized staff due to underfunding, as seen in Kenya, emerged. (Gandhi et al., 2021; Souza et al., 2024; Gardenswartz & Rowe, 2024; Nyawira et al., 2022)

On an analytical level, it is emphasized that governance influences spending behavior and long-term stability in the health system. Multinational studies found significant effects of governance quality on health expenditures, reinforcing that "good governance" improves efficiency and sustainability. Furthermore, the post-pandemic transformation requires proactive planning, surveillance, coordination, and strategic use of technologies (such as telemedicine), but also addressing misinformation and privacy concerns. Cases like Mexico showed that lack of coordination and accountability erodes public trust, making it central to strengthen collaboration mechanisms and accountability. (Azimi et al., 2023; Kozlakidis et al., 2020; Díaz-Castro et al., 2021)

In Peru and Latin America, the pandemic amplified structural problems: segmentation and fragmentation of the system, inequalities, poor resource distribution, infrastructure gaps (97% of first-level facilities and 96% of hospitals with inadequate infrastructure), and personnel shortages. Additionally, weaknesses in leadership, financial management, corruption, and low user participation, as well as critical barriers for rural, indigenous, and native communities, were observed. Experiences like HEARTS also show that coverage improves with political will, but depends on strong governance and interinstitutional coordination. In this context, the text suggests strengthening technical-social governance with institutional, economic, and social dimensions, aligned with alliances to achieve the Sustainable Development Goals (SDG 17) and aimed at improving management clarity, accountability, equity, and inclusion in healthcare networks. (Florian Ángeles, 2024)

The research question is formulated around **how to strengthen technical-social governance to optimize the management of health services in a healthcare network in Peru**, considering the **institutional, economic, and social dimensions** in an integrated manner?. Accordingly, the **main objective** is to **contribute to strengthening this technical-social governance** to improve the efficiency and equity of management, expand access to and quality of essential services, and sustain a more resilient and people-centered health response within the healthcare network.

Methodology

This research is applied and aims to propose practical solutions to specific problems in the management of a Health Network in Peru. It adopts a quantitative approach, based on data collection and statistical analysis to describe and assess the characteristics of the study population. In addition, it uses a non-experimental, simple descriptive design with a proposal, which makes it possible to observe the phenomenon without manipulating variables and to justify improvements based on the diagnosis conducted in the evaluated health facilities.

The study limits its scope to a sample of 500 staff members, intentionally selected for their relevance to the study's objective, in order to identify key aspects that can serve as a basis for decision-making. In this way, it seeks to generate objective and useful evidence for selecting alternatives and formulating strategies that optimize service management in the participating health facilities.

The main variable is defined as technical-social governance for the management of health services in a healthcare network in Peru (2024), understood as the set of technical-social practices, strategies, and processes that promote efficiency, equity, and quality in management. For analysis, it is organized into dimensions such as strategic planning, social participation, technical leadership, management clarity, and outcome evaluation, with the aim of capturing in an integrated manner how health services are governed and managed.

Measurement is structured through an operationalization table that specifies the conceptual and operational definition of each dimension, its indicators, and the measurement scale. These indicators make it possible to objectively assess the status of technical-social governance, identify strengths and

gaps, and use the findings as support for proposing improvement strategies; this table is included in the annexes to ensure methodological traceability.

The study population consists of 4,281 staff members assigned to 23 health facilities within the Health Network. Administrative or technical personnel with management-related duties and at least one year of experience were included, while those with less than one year of experience or who were unavailable during data collection were excluded. Sampling was non-probabilistic and purposive, prioritizing the participants' relevance to understanding the problem; details of the sample size calculation are reported in the complementary analysis annex.

To collect information, desk-based techniques and surveys were used to assess institutional, economic, and social dimensions. The instruments were validated by experts and showed internal consistency above 0.75; reliability was also verified using Cronbach's alpha and Kuder–Richardson, reaching an index of 0.85. The analysis combined descriptive and inferential statistics (frequencies, percentages, mean, median, standard deviation) and was processed using Microsoft Excel 2023 and the Real Statistics Resource Pack, ensuring ethical principles such as voluntariness and informed consent.

Results

Objective 1: Institutional dimension (governance framework and inter-institutional coordination)

The institutional results showed relatively strong ratings for having a clear, up-to-date regulatory framework and for following documented decision-making procedures, with mean scores above 3.5. In contrast, lower mean scores were observed for effective coordination among institutions and for the implementation of control and follow-up mechanisms to assess efficient resource use, suggesting that inter-institutional articulation and monitoring systems remain key areas for improvement. Although the dimension reported summary statistics (MA = 5.56; DE = 19.60; MIN = 1.0; MAX = 136.08), the histogram indicated that most scores clustered at the low end (0–10) with a strong right-skew and a major outlier near 137, which likely inflated the mean and reduced the interpretability of traditional descriptive statistics, supporting the use of more robust measures (e.g., median and interquartile range) and data cleaning before final interpretation.

Objective 2: Economic dimension (efficiency, equity, and investment in health programs)

The economic dimension presented a mean of 18.16 and a very large standard deviation (DE = 55.83), indicating substantial dispersion and heterogeneous perceptions about financial management. Items related to efficiency in using financial resources (Items 16–17) received moderate ratings, while periodic evaluations and corrective actions to improve efficiency (Item 18) were weaker, suggesting that a continuous improvement cycle has not been consistently consolidated. Clear deficits were reported in perceived equity of financial resource distribution (Items 19–21), especially regarding policies to reduce disparities and guarantee equity (Item 20), and preventive/promotional investment (Items 22–24) was rated below desirable levels, pointing to insufficient prioritization of prevention and inconsistent impact evaluation. The distribution was heavily right-skewed with an outlier near 390 (MAX = 389.55), compressing the main body of data (mostly 0–40) and reinforcing the recommendation to prioritize median/IQR and consider non-parametric approaches when comparing groups.

Objective 3: Social dimension (equity, inclusion, human rights, justice, and transparency)

For the social dimension, the mean was 12.66 with high dispersion (DE = 39.24), reflecting an intermediate overall perception but with wide variability across respondents. Equity as a general principle (Item 25) and respect for human rights (Item 31) were perceived more positively; however, moderate-to-low scores appeared for effective policies to reduce inequalities and systematic monitoring with corrective actions (Items 26–27), indicating that equity oversight is not fully institutionalized. Inclusion in decision-making (Items 28–30) was consistently weak, as were transparency and accountability items (Items 37–39), suggesting limited community feedback mechanisms and insufficient access to clear information. The histogram again showed strong right-skew with most scores concentrated between 0 and 25 and an outlier near 270 (MAX = 273.68), supporting the need for outlier review and robust descriptive statistics.

Cross-Objective Synthesis (differences across dimensions and hypothesis support)

A one-way ANOVA comparing the institutional, economic, and social dimensions yielded $F = 11.90$ with $p = 0.000007$, demonstrating statistically significant differences among dimensions ($p < 0.05$). Overall patterns suggested that the institutional dimension had a higher concentration of relatively better perceptions (at least on normative clarity and procedures), while the economic dimension showed the greatest dispersion, and the social dimension revealed notable weaknesses in inclusion and transparency. At the same time, all three histograms indicated that scores were generally concentrated in low ranges and were strongly affected by extreme outliers, meaning that strengthening technical-social governance should prioritize (1) coordination and monitoring in the institutional domain, (2) equity and prevention-oriented investment in the economic domain, and (3) participation and transparency mechanisms in the social domain, while also improving data robustness through outlier diagnostics and complementary non-parametric analyses when appropriate

Discussion

The pandemic exposed structural weaknesses in political leadership, intergovernmental coordination, financial adequacy, and equity of access to services. At both global and regional levels, severe impacts and persistent inequality patterns were documented, with particularly pronounced effects on historically vulnerable groups; this context underscores the importance of examining how technical-social governance operates within Peruvian healthcare networks. (Martínez-Córdoba et al., 2021; OPS, 2023)

Comparative evidence shows that institutional organization shapes continuity of care: in Europe, the fragmentation of community-based care and organizational heterogeneity have hindered continuity, while in Wales, misalignments across government levels have generated duplicated efforts and weaknesses in accountability. In the United States, public health has also been characterized by marginal and highly fragmented financing, reinforcing the idea that governance depends not only on rules but also on sustained coordination and stable resources. (Caponnetto et al., 2024; Krczal & Behrens, 2024; Orr et al., 2024)

In this analysis, the institutional dimension appears to be the strongest: regulatory frameworks, standardized procedures, and formal channels for coordinating actors are acknowledged. However, these strengths coexist with operational gaps (irregular supervision, limited feedback, and insufficient subnational managerial capacity), aligning with approaches that stress the need for clear structures to coordinate sectors and levels, especially in decentralized settings. (Lanford et al., 2022; Takahashi et al., 2023)

Even with regulations and procedures in place, institutional performance becomes fragile when effective coordination across government levels is lacking. This is reflected in bureaucratization, regulatory duplication, and inconsistent outcomes, patterns observed in Peru as well as in comparable experiences. Moreover, factors such as corruption and limited technical capacity among senior managers widen the gap between rules and practice, highlighting the urgency of strengthening technical and administrative capabilities so that institutional arrangements can produce tangible results. (Díaz, 2023; Tineo, 2023; Krczal & Behrens, 2024; Ramírez Cosme, 2024)

The economic dimension received the most critical assessments: respondents reported uncertainty about budget sufficiency, rigid execution, volatile transfers, and low prioritization of prevention and health promotion, which calls into question spending efficiency and sustained investment. This interpretation is consistent with evidence linking budget fragmentation to declining quality and to structural financing and coverage problems across countries, reinforcing the need for more effective allocation, control, and impact-evaluation mechanisms. (Esperanza et al., 2024; Souza et al., 2024; Raza et al., 2024; Orr et al., 2024)

In Peru, long-term planning is undermined by frequent changes, delayed payments, stockouts, and budget readjustments; internal differences across facilities were also observed, with some executing budgets relatively smoothly while others face shortages and delays, including reallocations that reduce funding for equipment maintenance and medicines. Experiences such as HEARTS show that progress may remain limited without stable financing and logistical support; therefore, measures such as protected programmatic budgets, public monthly execution dashboards, and cost-effectiveness training for managers have been proposed. (Ministerio de Salud, 2024; Saavedra & Jiménez, 2022)

The social dimension shows an intermediate mean but high variability, reflecting contradictory perceptions regarding participation, rights, and transparency: while equity and rights are recognized discursively, weaknesses persist in effective inclusion, citizen consultation, and accountability. This aligns with international and national evidence indicating that the exclusion of vulnerable populations and territorial gaps undermines legitimacy and adherence, and with statistical findings (ANOVA) confirming significant differences across dimensions, supporting the view that technical-social governance is multidimensional and unevenly developed; consequently, normative strength alone does not offset financial weakness or participatory deficits. (Díaz-Castro et al., 2021; Gandhi et al., 2021; Nyawira et al., 2022; Montag et al., 2021; Novoa Jacobo & Valverde Meza, 2024)

Conclusions

In conclusion, while clear regulatory frameworks, procedures, and inter-institutional alliances exist, the ability to select and execute alternatives was limited due to insufficient managerial support, systematic supervision, and feedback mechanisms. The institutional structure functioned as a useful reference but was underutilized in practice. The economic component revealed inefficiency and instability, with reallocated budgets, delayed transfers, and inadequate investment in prevention and promotion, compromising equity and access. Furthermore, spending management lacked close oversight and clear cost-effectiveness criteria. The social component demonstrated significant gaps in equity and inclusion, with many users unaware of participation channels, and additional barriers faced by rural or indigenous language-speaking groups. The protection of rights, management transparency, and accountability were perceived as weak, fueling distrust and limiting the legitimacy of decisions. Ultimately, when regulations are not supported by operational capacity, financing does not align with priorities, and participation is ineffective, the technical-social governance framework suffers. However, committed human capital and sufficient evidence were identified, offering a foundation for redirecting management towards greater equity, efficiency, and transparency.

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