

ORIGINAL ARTICLE

Impact of works for taxes on the improvement of the quality of educational service: a case study in the District of Huaral, 2023

ABSTRACT

En el contexto de la educación en Perú, la modalidad de obras por impuestos The Works for Taxes modality has emerged as an innovative strategy to address infrastructure deficiencies in Peruvian schools in the context of education. This modality, regulated by Act 29230, establishes a regulatory framework that promotes collaboration between the public and private sectors, facilitating the financing and execution of initiatives aimed at the optimization of educational facilities. However, it is essential to analyze the real impact of this mechanism on the quality of education offered to the population, beyond the construction or improvement of physical conditions. Therefore, the main objective of this article was the analysis of the impact of works for taxes on the improvement of the quality of educational services in the district of Huaral during the year 2023. Using a descriptive correlation study with a quantitative approach and non-experimental design, the study involved a population of 100 employees and a sample of 80 employees chosen by simple random sampling. The results showed a strong positive correlation ($\rho = 0.854^{**}$) between works for taxes and the improvement of the quality of educational services. This indicates that a greater implementation of these works is related to a better perception of quality by educators and administrators. However, although works for taxes are effective in improving the quality of education, their success is dependent on proper management and efficient allocation of resources in accordance with local needs.

Keywords: quality; equipment and furniture; infrastructure; works for taxes; educational service.

Ligia Elena Changana Solis

ligiaelenachs@gmail.com

ORCID: <https://orcid.org/0009-0000-4161-4875>

Universidad Católica Los Ángeles de Chimbote, Facultad de Derecho y Humanidades, Áncash, Perú.

Submitted: 05/07/2024 - Accepted: 10/07/2024 - Published: 12/30/2024

INTRODUCTION

At the global level, it has been recognized that educational infrastructure is a critical factor in the socio-economic development of countries. In 2015, the United Nations Development Program and the United Nations Organization emphasized the importance of ensuring an adequate school environment in order to promote educational progress and reduce inequalities, highlighting the direct relationship between school infrastructure and academic performance (Montiel *et al.*, 2019). In developed countries, public policy has focused on continually improving educational quality, corroborating studies like Hanushek (1995) and Velez *et al.* (1994) that demonstrate the direct link between school physical conditions and student achievement.

In this context, contemporary society requires the active participation of different economic entities, including the state, NGOs and private companies, in order to promote sustainable development (Picas Contreras, 2001). Initiatives to promote corporate social responsibility, considered a central pillar in different social sectors, have been implemented to achieve this objective (Camacho Solís, 2015; Montesinos León y Morales Alvarado, 2021).

Companies that seek a responsible commitment to society adopt long-term sustainable business strategies that generate value in both internal operations and external interactions, with the aim of positively influencing their immediate environment (Orozco Martínez, 2020; Espinoza Tavera *et al.*, 2018; Núñez, 2003). This is in line with Cañas' (2018) assertion that corporate social responsibility is closely related to the activities of the company and its impact on the immediate environment.

In Peru, initiatives such as the "Works for Taxes" program have been promoted. This is an outstanding strategy that encourages private sector participation in infrastructure projects, thereby overcoming budgetary constraints on public investment (Instituto de Economía y Desarrollo Empresarial [IEDEP], 2023). This mechanism is emerging as an innovative alternative for overcoming budgetary constraints in investment projects (Vizcarra Silvestre, 2021). With a Spearman correlation coefficient

of 0.932 and an R-squared of 0.967, Ojeda Soto (2022) found a significant impact of this regime on the execution of public investment projects, indicating an effectiveness of 96.7%.

Implementing a tax-financed project financing system promotes synergy between the public and private sectors, helping to reduce deficiencies in national infrastructure and improve the welfare of the population (Montesinos León and Morales Alvarado, 2021; Ortiz Basauri, 2021). In a study, Fernández Mallqui (2020) examined works financed by taxes and found statistical significance with a Pearson value of 0.042 and a significance level below 0.05. This demonstrates the relationship between the financing modality and efficiency in the management of public projects.

However, negative perceptions about this mechanism exist. Alarcón Toledo (2015) found a direct and significant relationship ($p=0.003$) between perceptions and social attitudes, investigating the relationship between the perceptions of the population of the district of Moquegua and their attitudes towards works for taxes. It was found that the perception of the respondents was mostly low, indicating a negative attitude towards works for taxes in this locality.

Similarly, the World Economic Forum's Global Competitiveness Report 2008-2009 ranked Peru 113th in terms of infrastructure. This shows that Peru is lagging behind other countries in the region (Porter and Schwab, 2008). In addition, the Association for the Promotion of National Infrastructure (AFIN, 2017) recommended the allocation of between 6% and 7% of GDP annually to well-selected infrastructure projects without political interference.

The Works for Taxes (OXI) process, implemented by the central government, allows private companies to initially finance infrastructure projects and later recover the investment through reimbursements from the Public Treasury. This is done through Regional and Local Public Investment Certificates (CI-PRL) or National Government Public Investment Certificates (CIPGN) (Congreso de la República, 2023; El Peruano, 2023). This system aims to promote efficient and transparent management in the execution of public investment projects.

According to PROINVERSION, in 2023 alone, an investment of 535 million soles was registered under the Works for Taxes Law (ProInversion, 2023). This mechanism allows private companies to pay the third category of income tax through the execution of public projects, which has a tax rate of 29.5% in the country.

In this sense, works for taxes have a significant impact on several aspects of social welfare, according to a study developed by Pauca Curi (2018). "First, 21.7% of the variation in the social benefits of settlers is attributed to these works; second, 40.4% of the variation in socioeconomic development and services; third, 11.3% of the variation in direct and indirect employment; and finally, 67.6% of the variation in social welfare indicators is related to the implementation of these projects".

In the field of education, infrastructure is a fundamental element that has a significant impact on academic performance (Development Bank of Latin America [CAF], 2016). Therefore, the allocation of financial resources to education is essential for the promotion of academic excellence and the stimulation of regional development (Bravo De la Ossa, 2018). In this sense, developed countries have begun to collaborate with international organizations, aiming to improve educational conditions and thus promote social and individual advancement (Montiel *et al.*, 2019).

In Peru, collaboration between the government and the private sector has been prioritized to improve infrastructure and public services (Alva Toledo, 2019; El Peruano, 2023). In the context of works for taxes, education stands out as the sector with the highest cumulative investment, reaching S/ 2,206 million, which represents a quarter of the total invested in 150 projects. Health follows with an investment of S/ 2,035 million (22.2% of the total in 20 projects), and transportation with S/ 1,989 million (21.7% distributed in 135 projects) (ComexPerú, 2024). These data underline the importance of the implementation of this financial system in the education sector.

In another study, Vizcarra Silvestre (2021) examined the impact of works for taxes on the quality of educational infrastructure, showing a strong positive correlation of (0.614;

$p=0.000$), which indicates a significant and beneficial relationship between works financed through this mechanism and the improvement of educational infrastructure. However, when we examine the current situation of educational infrastructure in Peru, we encounter a complex scenario, as shown in the report presented by "El Peruano":

It became clear that most schools in Peru face significant challenges in terms of infrastructure and basic services. With 76% of facilities in need of reinforcement, the need for investment and improvement in the education system is evident. Furthermore, the fact that 60% lack at least one basic service underscores the urgency of addressing these deficiencies to ensure an adequate educational environment for students.

This study highlights the importance of implementing policies and projects aimed at improving school infrastructure to ensure that all schools have adequate resources to provide a quality education.

Amid this reality, after the pandemic hit, students faced the challenge of returning to face-to-face classes in educational institutions that still lacked adequate infrastructure (Proinversion, 2023). This created a marked imbalance in education worldwide, and Peru was no exception. Economic difficulties forced more than 500,000 students to leave private schools and seek refuge in the public system. The largest increase in this migration was recorded between 2019 and 2020, when 356,241 students made the transition. This massive displacement of more than half a million young people to public schools demonstrates the urgent need to strengthen and update the country's educational infrastructure (Ministry of Education [MINEDU], 2023).

In light of this situation, it is necessary to ensure not only the availability of vacancies, but also adequate infrastructure, sufficient teaching staff and educational materials to accommodate this student migration. At the same time, the Institutional Strategic Plan of MINEDU focuses on closing the educational infrastructure gap and sets specific targets and a progress indicator to monitor progress in this area (MINEDU, 2022).

Table 1 shows the strategic planning of the Ministry of Education (MINEDU) to improve the educational infrastructure in Peru. The aim is to increase the level of resources and infrastructure for students.

Next, in relation to the Works for Taxes (WTI), the importance of strategic activity 8AEI is highlighted, which measures the strengthening of commitments with private companies based on the number of priority projects with signed investment agreements. Table 2 summarizes the strategic activity for partnerships with the private sector in education (AEI).

Its objective is to activate alliances with economic agents for the benefit of students. It is evaluated by the percentage of projects included in the National Government's priority portfolio through public-private partnerships, such as Works for Taxes and Public-Private Partnerships, with formalized agreement and/or contract.

The Ministry of Education has implemented a number of tools to address the infrastructure needs in the education sector. These strategies range from the National Educational Infrastructure Program (PRONIED) to

the promotion of public-private partnerships, as well as the implementation of Works for Taxes (MINEDU, 2014). The purpose of these modalities is to take advantage of the capacity and resources of the private sector to support the financing and execution of projects in the education sector.

Through this collaboration, it seeks to ensure effectiveness and efficiency in the implementation of these initiatives, thus promoting a positive impact on "the development and improvement of educational infrastructure". Specifically, works for taxes (OXI) have shown effectiveness, leading MINEDU in projects and amounts of investment committed to the education sector (National Educational Infrastructure Program [PRONIED], 2018). This highlights the vitality of public-private cooperation in the growth of educational infrastructure.

On the other hand, Act 29230, enacted in May 2008, provided a significant boost to the Works for Taxes mechanism, which aims to implement regional and local investment projects through agreements between the private sector and government entities (Congreso de la República, 2008). Since its implementation in 2015, the OXI modality has allowed local

Table 1

Strategic Planning by the Ministry of Education (MINEDU) to Improve the Provision of Educational Resources and Infrastructure in Peru

Code	Strategic Goal	Indicator	Baseline	2025 Target	2026 Target
OEI.05	Improve the provision of quality educational resources and infrastructure for students.	Percentage of progress in the reduction of the educational infrastructure network at the national level through the direct execution of the Pliego and/or through agreements with regional governments according to the PNIE.	4.0% (2017)	7.8%	8.2%

Note. The indicator used is the percentage improvement in closing the infrastructure gap. The baseline in 2017 was 4.0%, with projected targets of 7.8% by 2025 and 8.2% by 2026, reflecting a planned increase in the availability of educational infrastructure in the country. Prepared on the basis of information from the Institutional Strategic Plan 2019-2026 (MINEDU, 2022).

Table 2

Strategic Activity for Partnerships with the Private Sector in Education (AEI)

Code	Strategic Goal	Indicator	Baseline	2025 Target	2026 Target
AEI.08.03	Strategic collaborations established with economic actors for the benefit of students in the educational system.	Proportion of projects included in the national government's priority list that are carried out through the mechanisms of works for taxes and public-private partnerships, with a concession and/or formalized contract.	40% (2017)	82%	83%

Note. The baseline in 2017 was 40%, with targets of 82% in 2025 and 83% in 2026, indicating a notable increase in private sector participation in improving the education system. Based on information from the 2019-2026 Institutional Strategic Plan (MINEDU, 2022).

governments to participate with previously prioritized investment projects (PROINVERSIÓN). This has required the creation of special committees for the selection of private companies and supervisors, who play a crucial role in the successful implementation of these projects (Executive Order 005-2014-EF).

In the city of Huaral, four priority projects in the educational sector have been identified and submitted for technical evaluation by the Comptroller General of the Republic. These projects address specific improvements in different educational institutions, which are detailed as follows:

- Implementation of improvements in the educational services of I.E.P. N° 20399 La Esperanza, located in the sector of La Esperanza Baja.
- Improvement of the educational services of I.E.P. N° 20826 San Juan Bautista, located in the Huaral District.
- Improvement of educational services in I.E. No. 100, located in the Huaral District.
- Reinforcement of Pavilions A and B of I.E.P. N° 20403 Carlos Martínez Uribe, located in the Huaral District.

It is essential to highlight the value of these actions in the field of education, since strengthening the quality of education has a significant impact on the socio-emotional development of children (Bodero Delgado, 2014). It is imperative that all stakeholders, including the State, regional and local governments, the private sector, the community and parents, work together to guarantee universal access to quality education and provide the necessary support for students to succeed, both in terms of academic performance and personal development. The investment question is: Will the works for taxes have an impact on the improvement of the quality of educational services in the district of Huaral by the year 2023? Based on this, the general objective was set as follows. Analyze the impact of the tax works and the improvement of the quality of the educational service in the district of Huaral for the year 2023.

Finally, the general hypothesis was stated: The works for tax impact on the improvement of the quality of educational service in the district of Huaral for the year 2023.

METHODS

The research in question was of an applied type, according to Ñaupas Paitán *et al.* (2018), it seeks to solve practical problems and answer specific questions through the application of scientific methods. In addition, it delved into a quantitative approach as proposed by Ugalde Binda and Balbastre-Benavent (2022), this methodological choice is based on statistical techniques to make the results measurable and assess their relevance in a comprehensive manner. The hypothetical-deductive method was used, which according to Baena Paz (2017) is a method that starts from the formulation of hypotheses based on previous observations and submits them to empirical tests to confirm or refute their validity.

In this sense, there was a descriptive correlational level, this approach focuses on describing the characteristics of a phenomenon and analyzing the relationship between two or more variables without establishing causality (Guevara Alban *et al.*, 2020). And cross-sectional, that is, the relationship between the variables studied was evaluated by collecting information at a single point in time (Hernández Sampieri and Mendoza Torres, 2018).

Regarding the research design, it was non-experimental, as stated by Hernández Sampieri and Mendoza Torres (2018), this methodological stance is characterized by its observational nature, without deliberate manipulation of variables. Instead, it focuses on the analysis of existing phenomena in their natural context. This is appropriate for assessing the impact of tax works on the quality of education in Huaral, as it allows the analysis of the influence of these works without external intervention. Although this approach does not establish causality, a survey was used to collect data under natural conditions, thus strengthening the validity and understanding of the results obtained.

As for the study population, the 100 employees of the Provincial Municipality of Huaral who are directly involved in projects of interest to the educational sector were included. To guarantee the representativeness of the sample, simple random probability sampling for finite populations was used, which ensures that each individual in the population has the same probability of being selected, minimizing bias (Hernández-Ávila and Carpio Escobar, 2019). The sample size of 80 workers was determined by applying the sampling formula for finite populations, with a margin of error of 5% and a confidence level of 95%, which ensures that the conclusions can be generalized to the entire population and maintains the reliability of the findings.

A survey was used for data collection, whose questionnaire was designed and then validated by experts to ensure its accuracy and consistency with the objectives and conceptual framework of the study (Ñaupas Paitán *et al.*, 2018). During the validation process, the experts assessed its relevance and adequacy to accurately measure the proposed theoretical constructs. In terms of reliability, Borjas García (2020) highlights that it is used to measure the internal consistency of the questionnaire; for this purpose, the Cronbach's alpha coefficient was used, obtaining a value of 0.973, which shows a high coherence and reliability of the items evaluated, ensuring the soundness of the instrument.

This instrument is composed of 14 items distributed in the two main variables and their respective dimensions. For variable 1, taxation, specific indicators were designed and divided into dimensions x1: infrastructure and x2: equipment and facilities. Meanwhile, for variable 2, quality of educational services, items were developed that are grouped into the dimensions y1: Quality of Service and y2: Level of performance. An ordinal Likert scale with five response options was used, where Never = 1, Almost never = 2, Occasionally = 3, Frequently = 4, and Always = 5.

Finally, the statistical procedure was carried out using SPSS v.26, where frequency tables were made to describe the variables, in addition to reliability analysis through

Cronbach's alpha coefficient to ensure the consistency of the instrument. Spearman's Rho correlation analysis was used to examine the relationships between variables. These statistical procedures were fundamental to test the proposed hypothesis and facilitate the interpretation of the results.

RESULTS

It is essential to analyze how the employees of a government agency perceive their working environment in order to better understand their performance and the excellence of the services they provide. Within this situation, the current analysis focuses on two fundamental aspects: the realization of projects through taxes and the quality of the educational service. From a descriptive perspective, the results were as follows:

Table 3 shows the results on the execution of works for taxes in the context of the public service of education in the Provincial Municipality of Huaral and the Local Educational Management Unit (UGEL No. 10) indicating clear patterns in the frequency of use of this mechanism. Of the total number of respondents, 52.5% indicated that it was used frequently, while 16.3% indicated that it was used constantly. 8.8% reported occasional use and 22.5% reported almost no use.

The high frequency of use (68.8% when combining the "often" and "always" categories) suggests that this mechanism is a regular tool for managing works, although the presence of 22.5% who consider that it is rarely used indicates possible obstacles or limitations to its use in some specific cases. With regard to the specific dimension of infrastructure, 63.7% of the respondents indicate that the execution of works is frequently carried out, while only 11.3% affirm that it is always carried out. The results show that 2.5% consider these interventions to be occasional and 22.5% consider them to be rare.

In this sense, when comparing these data with those of the general implementation, it is observed that the infrastructure is one of the areas in which the implementation is less constant, with a smaller proportion (11.3%) indicating that it is carried out continuously.

This contrast indicates the existence of specific challenges in the management of infrastructure works, possibly related to the availability of resources, planning or local priorities.

On the other hand, in the equipment dimension, 17.5% of respondents indicated that the program is always implemented, while 48.8% described it as frequent. However, 28.7% of respondents said it was only done occasionally, and 5% said it was almost never done. Combining the “always” and “often” categories, the total is 66.3%, indicating a positive trend toward program implementation in this dimension. However, the 28.7% who reported occasional implementation suggests that although the program is regularly integrated in many cases, there are still areas where its application is not consistent, which could indicate differences in resource allocation or priorities in terms of educational equipment.

In general, the results show a positive trend in the execution of works for taxes in

both dimensions, although with specific areas for improvement in terms of consistency and regularity.

In Table 4, the quality of the educational service in the district of Huaral, according to the officials in charge of public education in the provincial municipality of Huaral and UGEL No. 10, shows different results. About 16.3% of the respondents always perceive a good quality in the educational service, while 47.5% often perceive it. On the other hand, 33.8% stated that this quality was only occasionally perceived and only 2.5% stated that they almost never perceived it.

These data suggest that, in general, most respondents perceive the quality of the educational service as acceptable, since the categories “always” and “often” total 63.8%. However, the fact that 33.8% perceive it as occasional is an indicator of possible inconsistencies in the provision of the service, which

Table 3

Frequencies of the Execution of Works for Taxes Variable with their Dimensions

Variable Grouped Frequencies: Execution of Works for Taxes												
5		4		3		2		1		Total		
f	%	f	%	f	%	f	%	f	%	f	%	
Variable 1: Execution of Works for Taxes												
Variable x.	13	16.3%	42	52.5%	7	8.8%	18	22.5%	0	0%	80	100%
Dimension x1 Infrastructure	9	11.3%	51	63.7%	2	2.5%	18	22.5%	0	0%	80	100%
Dimension x2 Equipment	14	17.5%	39	48.8%	23	28.7%	4	5.0%	0	0%	80	100%
Never = 1. Almost never = 2. Occasionally = 3. Frequently = 4. Always = 5.												

Never = 1. Almost never = 2. Occasionally = 3. Frequently = 4. Always = 5.

Note: Information obtained after administering the questionnaire. Prepared by the author.

Tabla 4

Frequencies of the Variable “Quality of Educational Services” with its Dimensions

	Variable Grouped Frequencies: Quality of Educational Services											
	5		4		3		2		1		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
	Variable 1: Execution of Works for Taxes											
Variable and Quality of educational service	13	16.3%	38	47.5%	27	33.8%	2	2.5%	0	0.0%	80	100%
Dimension and 1 Quality of service	11	13.8%	40	50.0%	29	36.3%	0	0.0%	0	0.0%	80	100%
Dimension and 2 Level of performance	12	12.0%	43	53.8%	23	28.7%	2	2.5%	0	0.0%	80	100%
Never = 1. Almost never = 2. Occasionally = 3. Frequently = 4. Always = 5.												

Never = 1. Almost never = 2. Occasionally = 3. Frequently = 4. Always = 5.

Note. Information obtained after administering the questionnaire. Prepared by the author.

could be related to variations in resources or educational management.

In view of these findings, it is essential to identify the areas where deficiencies are perceived, reviewing both the criteria that determine the quality of the service and the current regulatory framework. With this assessment, it will be possible to implement specific projects, such as the execution of works for taxes that respond to specific needs and ensure a sustainable level of quality over time, in line with educational objectives and community expectations.

With regard to the dimension of quality of services, the specific evaluation of the dimension of quality of educational services shows that only 13.8% of the respondents consider that quality services are always provided. 50% consider that this quality is often achieved and 36.3% consider that it is sometimes achieved. This pattern reflects the need to review and adjust the processes that ensure the quality of educational services in order to achieve a uniform perception of quality by all stakeholders.

Regarding the level of performance, 53.8% of respondents consider it to be frequent, while 15% consider it to be always present. Some 28.7% consider the performance to be occasional and only 2.5% consider it to be inadequate.

Most respondents have a positive perception of the level of performance (68.8% when the "often" and "always" categories are combined), which is an indicator that the goals and objectives set for educational management are generally being met. However, the percentage

of those who consider this to be the case occasionally (28.7%) and the small but present group who consider it to be inadequate suggest that intervention and monitoring strategies should be strengthened in order to raise the standard and reduce these variations. The results reflect a predominantly positive perception of the quality and performance of the educational service in the Huaral district, but also show areas where consistency and uniformity of quality should be strengthened.

As for the inferential analysis, the general hypothesis was tested:

H0: Works for taxes will have no impact on the improvement of the quality of educational services in the district of Huaral by 2023.

Hg: Works for taxes will have an impact on the improvement of the quality of educational services in the district of Huaral by 2023.

Table 5 shows a p-value of 0.000, which is below the significance threshold ($\alpha = 0.05$). This allows us to reject the null hypothesis (H0) and accept the alternative hypothesis (Hg). Likewise, Spearman's correlation coefficient (Rho) reaches a value of 0.854**, which shows a positive and high correlation between the implementation of works for taxes and the quality of educational services in the district of Huaral. This means that the implementation of works for taxes has a significant positive impact on the quality of education in the district during the year 2023, with a confidence level of 0.01 bilateral, showing a statistically significant relationship.

Table 5
General Hypothesis Testing

		Execution of Work for Taxes	Quality of Educational Service in the District of Huaral
Spearman's Rho	Correlation coefficient	1.000	.854**
	Execution of Works for Taxes		
	Sig. (two-tailed)	.	.000
	N	80	80
	Quality of Educational Service in the District of Huaral		
	Correlation coefficient	.854**	1.000
	Sig. (two-tailed)	.000	.
	N	80	80

Note. **. The correlation is significant at the 0.01 level (bilateral). Prepared by the author.

DISCUSSION

The objective of this research was to analyze the impact of works for taxes on the improvement of the quality of educational services in the district of Huaral during the year 2023. The general hypothesis has been tested: *Works for taxes will impact the improvement of the quality of educational services in the district of Huaral by 2023*. The results indicate a significant relationship between the execution of works for taxes and the improvement of the quality of educational services, which is evidenced by a p-value of 0.000. In addition, the Spearman's correlation coefficient of 0.854** shows a high positive correlation, which indicates that the greater implementation of projects under this fiscal regime is associated with a significant improvement in the quality of educational services. This finding not only underscores the effectiveness of the works-for-taxes mechanism as an educational investment strategy, but also highlights the need for a rigorous approach to the planning and implementation of these projects to ensure that they actually translate into tangible benefits for the educational community.

These findings are consistent with the studies of Ojeda Soto (2022), who demonstrated a high effectiveness of works for taxes in the execution of public investment projects, with a correlation coefficient of 0.932 and an R-squared of 0.967, indicating a level of effectiveness of 96.7%. In both cases, it is evident that the financing mechanism is an effective tool for strengthening infrastructure and, consequently, educational services, demonstrating a trend towards better management and public-private cooperation that, when properly applied, has a significant positive impact on educational infrastructure and, consequently, on the quality of educational services. The direct link between these findings allows us to conclude that the works-for-tax modality is not only efficient, but also replicable in other regions, taking into account local management peculiarities.

However, there are studies with inconsistent results, such as that of Alarcón Toledo (2015), who found a negative attitude and low perception of work for taxes in the district of

Moquegua, with a ($p=0.003$). In this sense, there are areas of inconsistency in the perception of the quality of educational services. Some 33.8% of respondents indicated that such quality is only occasional, which resonates with the observations of Montesinos Leon and Morales Alvarado (2021), who noted that at the national level, variations in management and resource allocation affect the perception of the effectiveness of these programs. In this sense, the lack of uniformity in the perception of quality in Huaral suggests that although the works-for-taxes model is generally effective, its success depends largely on the local capacity to adequately manage resources and maintain consistent and transparent planning.

With regard to the specific analysis of the variable execution of works for taxes, the dimensions of infrastructure and equipment were disaggregated and evaluated in terms of their frequency of application. The results show that infrastructure is frequently carried out in 63.7% of the cases, but only 11.3% of the respondents indicated that these works are always carried out, showing that although there is a high level of implementation, continuity is not always guaranteed. This finding is in line with the study by Vizcarra Silvestre (2021), who, when analyzing educational infrastructure, reported a significant positive correlation (0.614; $p = 0.000$), highlighting the need for consistency in implementation to ensure sustainable improvements.

Next, in the equipment dimension, it was observed that 17.5% felt the program was always implemented and 48.8% felt it was often implemented, for a total of 66.3%, reflecting a positive trend. However, the 28.7% who reported occasional implementation indicate that there is room for improvement. This variability in perception may be related to differences in resource allocation or project prioritization, aspects that have also been highlighted in previous studies, such as that of Fernández Mallqui (2020), who found a significant but less robust relationship in the correlation (Pearson = 0.042), indicating that although there is a positive impact, its magnitude and constancy depend on external factors and the specific context.

Similarly, when evaluating the quality of the educational service, the results show that 63.8% of the respondents consider the quality of the educational service to be high, while 33.8% consider it to be occasional. This finding is consistent with what was observed in the World Economic Forum's Global Competitiveness Report (2008-2009), which placed Peru in a lagging position in infrastructure (113th place), suggesting that the implementation of works for taxes should be accompanied by policies and strategies to improve the quality of educational services more uniformly and sustainably in specific regions. Occasional perceptions of quality may also be related to instability in resource allocation or problems in local management, underscoring the importance of integrating these interventions into a holistic approach.

On the other hand, Montesinos León and Morales Alvarado (2021), as well as Ortiz Basauri (2021), point out that the collaboration between the public and private sectors, promoted by the works for taxes, has been key to reducing the gaps in educational infrastructure and improving the well-being of the population in general. This is in line with the findings of this study, as it shows that, at least in Huaral, the synergy created by this financial scheme contributes significantly to the improvement of education, as reflected in the mostly positive perception of the respondents.

However, there are limitations in the implementation of works for taxes in certain specific areas, which underscores the need for additional studies that analyze the barriers that prevent a more consistent and effective application of the program in all its dimensions. As shown in the study by Pauca Curi (2018), the impact of works for taxes can vary considerably depending on the context and region, meaning that some areas benefit more than others in terms of socioeconomic development and educational services.

It should be noted that this study also has limitations that should be taken into account for a rigorous analysis. First, because it is based on a cross-sectional sample, it prevents us from observing changes in perceptions of educational quality and the impact of the works for taxes over time. In addition, relying on

respondents' perceptions may introduce bias, especially if they feel pressure to respond positively because of their relationship with local authorities. This focus on Huaral District alone further limits the generalizability of the results to other regions.

Therefore, it is recommended that future research adopt a longitudinal approach and conduct mixed analyses that integrate both quantitative and qualitative data. It is also advisable to use standardized measurement instruments to minimize response bias. Despite these limitations, the study highlights the importance of efficient and contextualized management of fiscal work to maximize its positive impact on educational quality.

Finally, although it has been demonstrated that works for taxes have a significant impact on improving the quality of educational services in Huaral District, areas of inconsistency in their application have also been identified. This situation highlights the urgency of implementing a more effective management and equitable distribution of resources. An approach that guarantees not only the correct implementation of the works, but also their long-term sustainability will ensure a positive and lasting impact on the quality of educational services for the community.

CONCLUSIONS

The analysis of the impact of works for taxes on the improvement of the quality of educational services in the district of Huaral during the year 2023 showed how these interventions can transform the educational environment. The results showed a strong positive correlation, with a $\rho = 0.854^{**}$, which means that the greater the frequency of these works, the greater the improvement in the quality of educational services. This is a clear indication that the works for taxes are not only implemented effectively, but also have a tangible impact on the perception of educators and administrators of the educational system.

However, the study also shows that despite this positive relationship, challenges remain that need to be addressed: 33.8% of respondents perceive the quality of education as occasional, indicating that although the works

are being carried out, their impact is neither uniform nor sustained over time. Furthermore, the dimension of educational infrastructure reveals that 22.5% of respondents consider that the execution of works is almost non-existent, underlining the need for more robust and coherent management, noting that it is not enough to carry out works; these interventions must be accompanied by adequate planning and efficient allocation of resources to ensure their sustainability.

Therefore, while the works-for-taxes program has proven to be an effective tool for improving the quality of education, its success depends on comprehensive management that takes into account local realities and needs.

For this reason, it is essential that local and regional authorities strengthen the management and supervision of works for taxes by establishing a more robust management framework, including the creation of monitoring committees composed of community members and educational representatives. The active participation of these stakeholders will ensure that the works are not only implemented effectively, but also maintained in appropriate conditions over time.

The development of ongoing training programs for project managers and officials involved in the implementation of the works is also encouraged. This training should focus on best practices in project management and efficient use of resources to ensure that interventions are sustainable and of high quality.

Finally, greater collaboration between education authorities and the community should be encouraged. Fluid communication among all stakeholders will allow the adaptation of interventions according to the real needs of the educational environment, which in turn will contribute to improving the quality of educational services in the Huaral district.

REFERENCES

- Alarcón Toledo, R. (2015). *Percepción y actitud social de la población del distrito de Moquegua frente a la modalidad de Obras por Impuestos promovida por la Municipalidad Provincial Mariscal Nieto, año 2015* [Tesis de pregrado, Universidad Nacional de Moquegua]. <https://repositorio.unam.edu.pe/bitstreams/73caddb78-5d42-422c-a95b-2abf249e7e48/download>
- Alva Villacorta, M. (2019). Aplicación del mecanismo de Obras por Impuestos para impulsar la competitividad del territorio. En *Antamina*. CEPAL. https://www.cepal.org/sites/default/files/events/files/4.milton_alva_obras_por_impuestos_oxi_antamina.pdf
- Asociación para el Fomento de la Infraestructura Nacional (AFIN). (2017). *Un plan para salir de la pobreza: Plan Nacional de Infraestructura 2016 - 2025* (Asociación para el Fomento de la Infraestructura Nacional, Ed.). AFIN. <https://afin.org.pe/wp-content/uploads/2020/10/plan-nacional-infraestructura-2016-2020.pdf>
- Baena Paz, G. (2017). *Metodología de la investigación*. (3ª ed). Grupo editorial Patria. http://www.biblioteca.cij.gob.mx/Archivos/Materiales_de_consulta/Drogas_de_Abuso/Articulos/metodologia%20de%20la%20investigacion.pdf
- BancodeDesarrollodeAméricaLatina(CAF).(2016). La importancia de tener una buena infraestructura escolar. En *CAF.com*. <https://www.caf.com/es/actualidad/noticias/2016/10/la-importancia-de-tener-una-buena-infraestructura-escolar/>
- Boderó Delgado, H. (2014). El impacto de la calidad educativa. *Apuntes de Ciencia & Sociedad*, 4(1), 112-117. <https://doi.org/10.18259/acs.2014011>
- Borjas García, J. (2020). Validez y confiabilidad en la recolección y análisis de datos bajo un enfoque cualitativo. *Trascender, contabilidad y gestión*, 5(15), 79-97. <https://doi.org/10.36791/tcg.v0i15.90>
- Bravo De la Ossa, A. (2018). La educación como eje fundamental para el desarrollo. *Revista Diálogo*, (1), 20-30. <https://doi.org/10.37594/dialogus.v1i1.151>
- Camacho Solís, J. (2015). Las normas de responsabilidad social. Su dimensión en el ámbito laboral de las empresas. *Revista latinoamericana de derecho social*, (20), 3-29. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1870-46702015000100003&lng=es&tlng=es.
- Cañas, T. (2018). *Responsabilidad social corporativa*. Editorial Elearning.

- ComexPerú. (2024, julio 12). *Obras por impuestos y brecha de infraestructura educativa*. Sociedad de Comercio Exterior del Perú. <https://www.comexperu.org.pe/articulo/obras-por-impuestos-y-brecha-de-infraestructura-educativa>
- Congreso de la República. (2008). Ley N.º 29230 - Ley que impulsa la inversión pública regional y local con la participación del sector privado. En *Gobierno de Peru*. <https://www.gob.pe/institucion/presidencia/normas-legales/425980-29230>
- Congreso de la República. (2023). Promoción de la inversión: obras por impuestos y mecanismos de inversión público - privada. En *Nota de información referencial*. https://www.congreso.gob.pe/Docs/DGP/DIDP/files/nir_17_promoci%C3%93n_de_la_inversi%C3%93n_obras_por_impuestos.pdf
- Decreto Supremo N.º 005-2014-EF, Decreto Supremo que aprueba el Reglamento de la Ley N.º 29230, Ley que impulsa la Inversión Pública Regional y Local con participación del Sector Privado. (2014). Ministerio de Economía y Finanzas. *Diario Oficial El Peruano*, 14 de enero. <https://www.gob.pe/institucion/mef/normas-legales/226887-005-2014-ef>
- El Peruano. (2023). MEF crea mesa ejecutiva para optimizar mecanismo de Obras por Impuestos. En *Diario Oficial del Bicentenario*. <https://www.elperuano.pe/noticia/213180-mef-crea-mesa-ejecutiva-para-optimizar-mecanismo-de-obras-por-impuestos>
- Espinoza Tavera, P., Meza Salas, A., & Paiva Lázarro, F. (2018). *Obras por Impuestos: Impacto en la población peruana y en la creación de valor de las empresas - Caso de estudio: Proyecto "Mejoramiento de los servicios educativos de la I. E. N.º 100, distrito de Huaral, provincia de Huaral - Lima"* [Tesis de Maestría, Universidad Peruana de Ciencias Aplicadas (UPC)]. https://repositorioacademico.upc.edu.pe/bitstream/handle/10757/623857/Espinoza_TP.pdf?sequence=14&isAllowed=y
- Fernández Mallqui, G. (2020). *Obras por impuesto y su incidencia en la gestión de proyectos de inversión pública, en los Gobiernos Locales de la Provincia de Pasco, años 2014 - 2018* [Tesis de maestría, Universidad Nacional Daniel Alcides Carrión]. http://repositorio.undac.edu.pe/bitstream/undac/2290/1/T026_41822768_M.pdf
- Guevara Alban, G., Verdesoto Arguello, A., & Castro Molina, N. (2020). Metodologías de investigación educativa (descriptivas, experimentales, participativas, y de investigación-acción). *RE-CIMUNDO*, 4(3), 163-173. <http://recimundo.com/index.php/es/article/view/860>
- Hanushek, E. (1995). Interpreting recent research on schooling in developing countries. *The World Bank Research Observer*, 10(2), 227-246. <https://doi.org/10.1093/wbro/10.2.227>
- Hernández-Ávila, C., & Carpio Escobar, N. (2019). Introducción a los tipos de muestreo. *Alerta, Revista Científica del Instituto Nacional de Salud*, 2(1), 75-79. <https://camjol.info/index.php/alerta/article/view/7535>
- Hernández Sampieri, R., & Mendoza Torres, C. (2018). *Metodología de la investigación: las rutas: cuantitativa, cualitativa y mixta*. Mc Graw Hill educación. <http://repositorio.uasb.edu.bo:8080/handle/54000/1292>
- Instituto de Economía y Desarrollo Empresarial (IEDEP). (2023). Obras por Impuestos en Perú: Colaboración estratégica entre los sectores público y privado. En *Revista digital de la camara de comercio Lima*. <https://lacamara.pe/obras-por-impuestos-en-peru-colaboracion-estrategica-entre-los-sectores-publico-y-privado/>
- Ministerio de Educación (MINEDU). (2014). *Infraestructura PRONIED Presentación*. <https://www.minedu.gob.pe/p/politicas-infraestructura-pronied.php>
- Ministerio de Educación (MINEDU). (2022). Plan Estratégico Institucional 2019-2026 (Modificado). En *Resolucion Ministerial n. 344-2022*. Ministerio de Educacion. https://www.minedu.gob.pe/normatividad/plan_institucional/RM_344-2022-minedu.pdf
- Ministerio de Educación (MINEDU). (2023, mayo 13). *Más de 500 mil estudiantes pasaron a colegios públicos durante la pandemia*. Gobierno del Perú. <https://www.gob.pe/institucion/minedu/noticias/756784-mas-de-500-mil-estudiantes-pasaron-a-colegios-publicos-durante-la-pandemia>
- Montesinos León, N., & Morales Alvarado, L. (2021). El mecanismo de obras por impuestos y la responsabilidad social empresarial en el Perú. *SUMM, Revista disciplinaria en ciencias económicas y sociales*, 3(1), 1-25. <https://doi.org/10.47666/summa.3.1.09>
- Montiel, I., Mayoral, A., Navarro Pedreño, J., & Maiques, S. (2019). Acoustic Comfort in Learning Spaces: Moving Towards Sustainable Development Goals. *Sustainability*, 11(13), 3573. <https://doi.org/10.3390/su11133573>

- Ñaupas Paitán, H., Valdivia Dueñas, M., Palacios Vilela, J., & Romero Delgado, H. (2018). *Metodología de la Investigación. Cuantitativa - Cualitativa y Redacción de la tesis*. (5ª ed.). Ediciones de la U. https://drive.google.com/drive/folders/1JIdQ-FylFToVraY4Un4XaMo3_cnnNBuqP
- Núñez, G. (2003). La responsabilidad social corporativa en un marco de desarrollo sostenible. *CEPAL – SERIE Medio ambiente y desarrollo*, 72. <https://repositorio.cepal.org/server/api/core/bitstreams/4fa567cb-d58f-454e-8d10-9c08b922cc86/content>
- Ojeda Soto, J. (2022). *Contribución del régimen de obras por impuestos en la ejecución de proyectos de inversión pública, Trujillo - 2021* [Tesis de maestría, Universidad César Vallejo]. https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/91702/Ojeda_SJA-SD.pdf?sequence=1&isAllowed=y
- Orozco Martínez, I. (2020). De la ética empresarial a la sostenibilidad, ¿por qué debe interesar a las empresas? *The Anáhuac Journal*, 20(1), 76-105. <https://doi.org/10.36105/theanahuacjour.2020v20n1.03>
- Ortiz Basauri, C. (2021). Control de la Superintendencia Nacional de Aduanas y administración tributaria en obras por impuestos, 2019. *Quipukamayoc*, 29(59), 17-24. <https://doi.org/10.15381/quipu.v29i59.20145>
- Pauca Curi, L. (2018). *Obras por impuestos en beneficio social del poblador del distrito de Huaral. 2017* [Tesis de maestría, Universidad César Vallejo]. <https://repositorio.ucv.edu.pe/handle/20.500.12692/16976>
- Picas Contreras, J. (2001). *El papel de las organizaciones no gubernamentales y la crisis del desarrollo una crítica antropológica a las formas de cooperación* [Tesis de doctorado, Universitat de Barcelona]. <http://hdl.handle.net/10803/705>
- Porter, M., & Schwab, K. (2008). *The Global Competitiveness Report 2008–2009* (The World Economic Forum, Ed.). Global Competitiveness Network. https://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2008-09.pdf
- Proinversion. (2023). *Proinversión: 2023 sería un año récord de adjudicaciones mediante obras por impuestos*. <https://www.investinperu.pe/es/pi/detalle-noticia/proinversion-2023-seria-un-ano-record-de-adjudica#:~:text=En%20el%20evento%20el%20director,mecanismo%20de%20Obras%20por%20Impuestos>
- Programa Nacional de Infraestructura Educativa (PRONIED). (2018). Reconocen al Minedu como la entidad pública con mayor cantidad de proyectos en Obras por Impuesto. En *Gobierno de Peru*. <https://www.gob.pe/institucion/pronied/noticias/204367-reconocen-al-minedu-como-la-entidad-publica-con-mayor-cantidad-de-proyectos-en-obras-por-impuestos>
- Ugalde Binda, N., & Balbastre-Benavent, F. (2022). Investigación cuantitativa e investigación cualitativa: buscando las ventajas de las diferentes metodologías de investigación. *Revista de Ciencias Económicas*, 31(2), 179-187. <https://doi.org/10.15517/rce.v31i2.12730>
- Vélez, E., Schiefelbein, E., & Valenzuela, J. (1994). Factores que afectan el rendimiento académico en la educación primaria. En *MINEDU*. <http://repositorio.minedu.gob.pe/handle/20.500.12799/4317>
- Vizcarra Silvestre, R. (2021). Infraestructura educativa y las obras por impuestos en un escenario político de rentabilidad social. *Arquitek*, (20), 93-104. <https://doi.org/10.47796/ra.2021i20.555>

Conflict of interest

The author has no conflicts of interest to declare.

Author contributions

Ligia Elena Changana Solis (lead author): research, writing (original draft, review, and editing).