

## The use of Net Promoter Score for evaluating Primary Health Care: results from population-based surveys

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THEMATIC ARTICLE

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**Abstract** *The objective of this study is to present patient satisfaction results using the Net Promoter Score (NPS). This is a cross-sectional study carried out with microdata from the Continuous National Household Sample Survey of 2022 and which corresponds to the module on Primary Health Care in which the sample carried out was 48,068 guardians of children under 13 years of age in all federation units. The main variables considered were the score given to the health service in the last service in the 12-month period and the main reason for this score. It should be noted that no region of the country achieved a result defined as a Quality Zone (between 51 and 75), concentrating on a category called Improvement Zone (between 1 and 50). The best performance was in the South region (+33) and the worst performances in the Northeast and Southeast regions (+27). The NPS can be an important ally to quickly assess the patient experience in primary health care services in Brazil.*

**Key words** *Primary Health Care, Service Evaluation, Health Services*

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## Introduction

The evaluation of Primary Health Care (PHC) services is crucial to measure the efficiency and quality of care provided worldwide. It involves a comprehensive analysis of several aspects, such as access, longitudinality, coordination, and comprehensive services. Countries worldwide implement different approaches and metrics to evaluate their PHC to improve healthcare delivery, identify gaps, and promote equitable access. Evaluation can also assist in policymaking and directing resources to improvement areas. Finding reliable and cost-effective evaluation strategies is an established challenge for PHC.

The Net Promoter Score (NPS) is a summary question whose first publication dates back to 2003, originated by Reichheld (2003), from the Harvard Business Review<sup>1</sup>. Companies have used the NPS tool to identify loyal customers and evaluate the growth of their service projects<sup>2</sup>. Due to its success, hundreds of companies in the business sector have started using the NPS tool<sup>3,4</sup>. Similarly, healthcare and other social sectors have also started incorporating the NPS tool in their clinics and hospitals to assess patient satisfaction with services provided, patient loyalty, and growth<sup>2</sup>. NPS is a popular survey method used globally and dubbed “The Ultimate Question”.

The instrument has been used to assess patient satisfaction with health services in England, the Netherlands, the United States, and Australia<sup>4-9</sup>. However, specialist services are the health services most frequently assessed with the NPS. In a recent systematic review, Adams *et al.*<sup>10</sup> observed the use of NPS in hospitals (5 studies), dental services (3 studies), PHC clinics (2 studies), orthopedic centers (2 studies), family planning centers (1 study), and mental health services (1 study). Only 12 studies were included in the research due to the inclusion criteria.

The NPS has been widely used by the National Health System in England since 2012. It was inserted and adapted within the Family Friends Test (FFT) program. It has been applied 25 million times since 2013 and is the world's most extensive collection of patient experience data. In a summary report published in February 2020, 90% of the patients in general practice services were promoters of this service, while 96% were promoters of dental services<sup>11-13</sup>.

In Brazil, the NPS was included in the Continuous National Household Sample Survey (PNAD-C), developed by the Brazilian Institute of Geography and Statistics (IBGE) in 2022<sup>14</sup>.

The PNAD-C carried out a household survey in more than 200 thousand households, becoming the most significant child health assessment survey ever carried out in Brazil<sup>15</sup>. This study aims to present patient satisfaction results using the Net Promoter Score (NPS).

## Methodological aspects

This cross-sectional study was conducted with microdata from the IBGE's National Household Sample Survey, which continues in the second quarter of 2022. We used the Primary Child Health Care module, in which the sample consisted of 48,068 people responsible for children under 13 years of age in all 27 federation units.

Implemented in Brazil in 2006, the Integrated Household Survey System (SIPD) aimed to reformulate the IBGE household surveys, providing indicators on the labor market with national coverage and producing baseline information for studying the country's socioeconomic development. The SIPD is a model for producing household sample surveys in which the planning, execution, analysis, and dissemination of results are coordinated, facilitating meeting new demands and streamlining the resources used. The sample of each survey in this system corresponds to a part or the entirety of a master sample, and the concepts and processes are harmonized between them.

One of the fundamental points of the SIPD is the construction of a sampling structure to fit all household surveys. This structure is the master sample, defined as a set of areal units probabilistically selected from a master registry based on the 2010 Demographic Census, the changes in the Geographic Operational Base, and the National Address Registry for Statistical Purposes (CNEFE).

Subsamples are constructed from the master sample for the several surveys included in the SIPD. The Household Budget Survey, for example, uses a subsample of approximately 40% of the primary sampling units of the master sample. In comparison, the Continuous PNAD uses 100% of the primary sampling units of this sample.

The geographic scope of the Continuous PNAD is the entire National Territory, divided into census tracts of the 2010 Geographic Operational Base, excluding areas with unique features. The target population consists of all people living in permanent private households in the area covered by the survey.

The sampling plan adopted in the Continuous PNAD is a two-stage cluster selection, with stratification of the primary sampling units. In the first stage, the primary sampling units are selected with a probability proportional to the number of households within each defined stratum. The stratification adopted is that defined for the entire SIPD.

In the second stage, 14 occupied permanent private households are selected within each primary sampling unit by simple random sampling of the updated CNEFE. The sample of primary sampling units and households is divided by the three months of a quarter, following the rotation scheme described below.

The Continuous PNAD is collected quarterly, i.e., the total sample of households is collected over three months to produce estimates of the desired indicators at the end of this cycle. In these situations, the sample is planned in such a way as to rotate the selected households, maintaining an overlapping portion between two subsequent reporting periods. In the case of the Continuous PNAD, the sample rotation scheme adopted was the 1-2(5) scheme, which is the most efficient when one of the main interests of the research is changes in quarterly indicators. In this scheme, the household is interviewed for one month and then leaves the sample for two consecutive months, with this sequence repeated five times. It was necessary to define 15 household rotation groups, dividing the sample of primary sampling units into these groups to operationalize this scheme. Five groups are surveyed each month of the quarter, and at the end of the period, the sample is accumulated to produce the indicators.

The Continuous PNAD visits 15,096 primary sampling units spread throughout the National Territory every quarter. Fourteen households are visited in each, totaling 211,344 households per quarter<sup>14</sup>.

All Module 12 respondents from the Continuous PNAD (Second quarter of 2022) who answered the NPS were considered for the analysis. IBGE's methodology provides that only those who responded to having consulted a PHC Unit up to 12 months before the interview were invited to answer the NPS question. In other words, 40,106 people of the original total of 48,068 who started responding to the PHC Module (which corresponds to 38 million people in the expanded population) responded that the child received some type of care in the last 12 months (that is, 31.5 million in the universe).

The main variables considered were the score given to the health service in the last appointment in the 12-month period (which generated the NPS indicator) and the main reason for this score.

The Net Promoter Score is a tool that has been used to assess patient experience on an international scale. Using just one question, "On a scale of 0 to 10, how likely are you to recommend a particular service (name of service) to a friend or family member?"; the NPS compares the balance between those who are likely to recommend the services received or not, obtaining a solid indication of the patient's perception of the service by analyzing whether or not they would encourage other people to use it<sup>2,3</sup>. Patients responding to the NPS are divided into three categories: promoters (with scores of 9 and 10), neutral/passive (with scores of 7 and 8), and detractors (with scores from 0 to 6). Promoters are patients who are enthusiastic about the service, while detractors represent those who are dissatisfied and evaluate it negatively. Passive/neutral respondents, as the name suggests, are not necessarily dissatisfied nor inclined to actively promote the service provided to them. The final NPS calculation is based on the percentage of participants considered promoters, subtracted by detractors, disregarding the neutral/passive respondents. Thus, the result can range from "-100" to "+100", where the higher the value, the better the indicator<sup>2,3</sup>.

To better understand the outcomes, the result was categorized into Excellence Zone, between 76 and 90; Quality Zone, between 51 and 75; Improvement Zone, between 1 and 50; and Critical Zone, between -100 and 0<sup>16</sup>.

The analyses followed three main stages. First, the NPS calculation is presented by state. Next, the main reason for assigning the score for the last service was categorized, excluding the "Other" option. To this end, we opted to present interval estimates with 95% confidence and a 5% level of statistical significance. Finally, the continuous score was categorized as low score (0-6), the "detractors"; a neutral score, the "unaffected" (7 and 8); and high score (9 and 10), the "promoters", to perform correlation analysis with the Primary Care Assessment Tool (PCATool) score, which the instrument also allowed calculating. The calculation of the PCATool score followed the method published by the Ministry of Health<sup>17</sup>. All analyses were performed in the statistical program Stata 15.1.

## Results

In the 2022 Continuous PNAD, 89.1% of 38 million children under 13 eligible to respond to the PHC module had a father/mother as the head of the family, with a similar distribution among the regions of the country. Furthermore, 31.5 million children under 13 received health care at a PHC unit 12 months before the interview, assigning a score from zero to 10 to this care, which, as we saw previously, allows calculating the Net Promoter Score (NPS) indicator.

This is the most significant Brazilian sample of respondents for this indicator. We observed that no region of the country achieved a result defined as Quality Zone (between 51 and 75), concentrating on a category called Improvement Zone (between 1 and 50). The South achieved the best performance (+33), and the worst was recorded in the Northeast and Southeast (+27 each). Among the Brazilian states, Rio Grande do Sul stands out (+41), with a performance closer to the Quality Zone. Rondônia, Acre, Amapá, Tocantins, Ceará, Rio Grande do Norte, Pernambuco, Alagoas, Bahia, Espírito Santo, São Paulo, Paraná and the Federal District performed below Brazil's performance (+28) (Graph 1).

The main reason given by respondents to justify the NPS score was the performance of the health unit professionals (team) in resolving the problem (35.7% [34.7%-36.7%]), followed by reception – how the child's guardian was served at the unit (32.4% [31.5%-33.3%]). On the other hand, we observed regional differences. In the North and Northeast, reception stood out against the other reasons. Teamwork was mentioned more often in the South and Southeast (Table 1).

When associating the proportion of people who assigned scores of 9 or 10 (“the health unit promoters”) with the PCATool score (which can also be calculated in the Children's PHC module of the 2022 Continuous PNAD), we observed a correlation between the highest scores given in the evaluation of the PHC unit and the highest scores obtained when applying the PCATool methodology (Graphs 2 to 5).

## Discussion

We observed that no region of the country achieved an NPS defined as a Quality Zone (between 51 and 75), concentrating on a category called Improvement Zone (between 1 and 50). The best performance was in the South (+33),

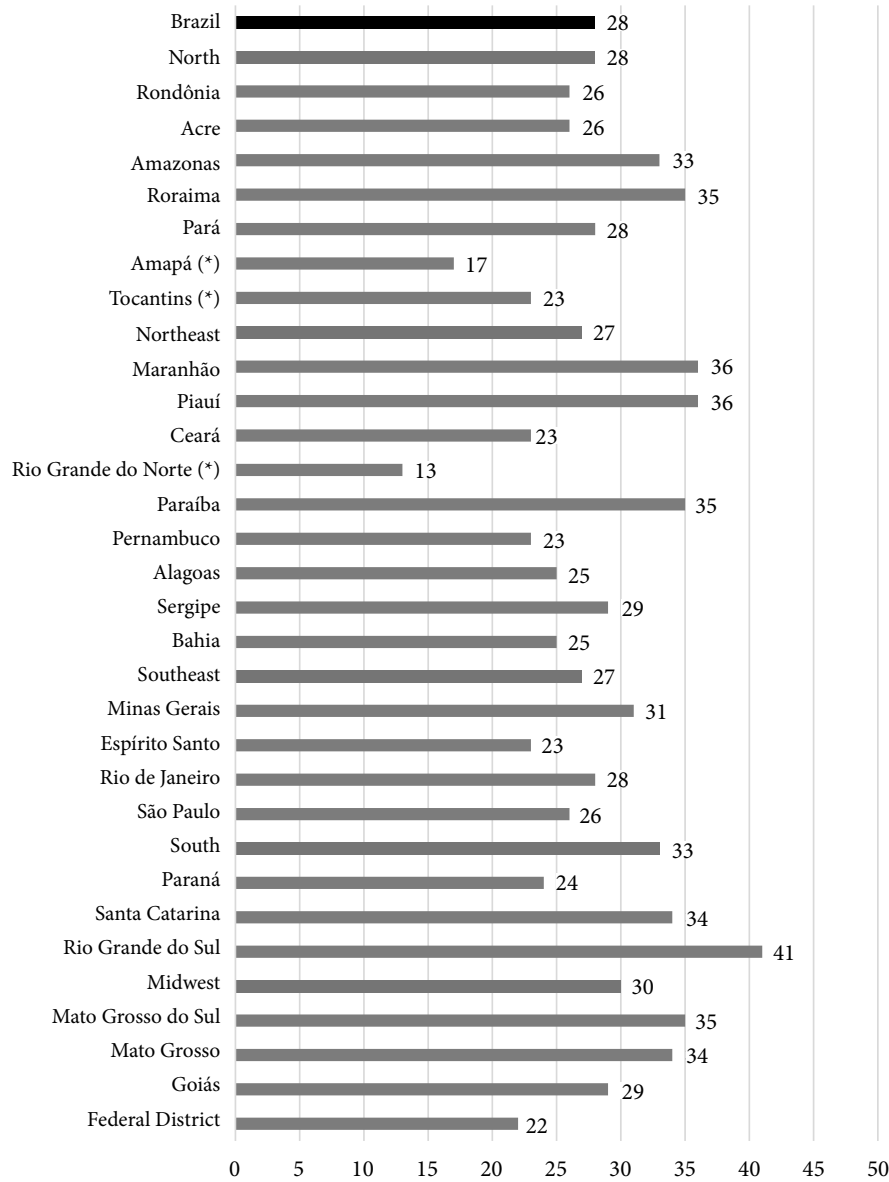
and the worst was in the Northeast and Southeast (+27 each). Among the Brazilian states, Rio Grande do Sul stands out (+41), with a performance closer to the Quality Zone. The main reasons stated by the children's guardians to give their score (of 0 to 10) were “the health unit's professional (team) performance in resolving the health problem” and “reception”, which means that health units must pay attention to these characteristics when planning and organizing their primary care services.

We found few studies applying the NPS summary question within the PHC. Although it is employed internationally to measure patient satisfaction in hospitals, dental clinics, and specialized centers, its use in PHC appears to be more widespread in the UK's National Health System (NHS)<sup>10</sup>. The NHS reformulated the NPS and called the modified version the Friends and Family Test (FFT), transforming the traditional NPS numerical response scale into a 5-point Likert scale<sup>10</sup>. The NHS periodically used the FFT, specifically for PHC, and the results for September showed a 92% positive evaluation<sup>18</sup>.

Studies using the NPS or FFT within the PHC had mixed methodology, focusing on qualitative assessment. The NPS could be used with a broad profile of patients, including less educated adults and children. Moreover, the NPS research showed high patient completion rates, generating a large data volume. On the other hand, some questioned whether the NPS recommendation summary question was appropriate in the health-care setting, especially if patients have a limited choice of health professionals (access difficulty)<sup>5,10,19,20</sup>.

Adams *et al.*<sup>10</sup> found that the patient feedback section was the most helpful NPS component. The feedback section in the NPS is well-used by patients, and these comments can help contextualize the quantitative results collected from the NPS survey. For this reason, following a review by the FFT (in 2014), the open-ended question was made mandatory due to the perceived value of these comments. The results of these studies were not found in the comments section. In Brazil, reception and resolution were the most frequent justifications for assigning a response to the NPS question. However, the service speed was pointed out when we looked specifically at the reason for assigning a low score.

Reception is an access practice that aims to restore the relationship of professional-patient solidarity and agility<sup>20</sup> to increase equity, the resolution of the first contact, and care speed. Ob-



**Graph 1.** Net Promoter Score (NPS) assigned by guardians of children under 13 years of age who used some Primary Health Care service in the last 12 months. Brazil, Great Regions, and Federation Units, 2022.

(\*) The coefficients of variation are above 20% in these UFs. Thus, estimates must be carefully analyzed.

Source: Authors, based on microdata from the Continuous National Household Sample Survey (PNAD-C) developed by IBGE in 2022.

jectively, implementing this tool is represented by the distribution of forms to organize the queue, organizing the ‘walk-in demand’ in the agendas, and the conversation between the team and patients, followed by individual negotiations and clinical care<sup>21</sup>.

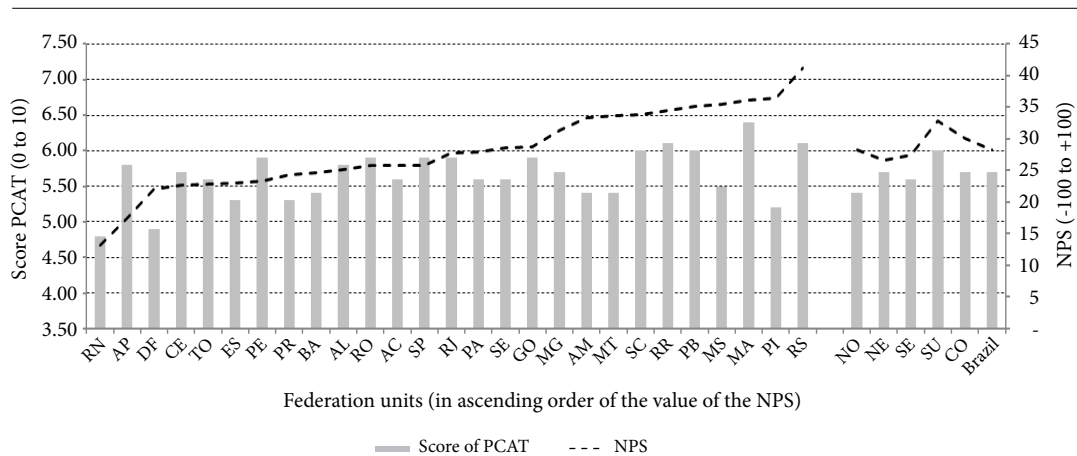
However, despite the significant increase in people registered/linked to teams working in Brazilian PHC services, 74,685.77 people registered in 2018 to 170,816.484 in 2022<sup>22</sup>, and an apparent increase in equity in access to and use of PHC health services for rural areas, the Brazilian

**Table 1.** Distribution of children under 13 years of age who received care at a Primary Health Care service according to the main reason for assigning the score (0 to 10) given by the child's guardian and respective confidence intervals. Brazil, Great Regions, 2022.

| Main reason       | Brazil                 | North                  | Northeast              | Southeast              | South                  | Midwest                |
|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Reception (1)     | 32.4%<br>[31.5%-33.3%] | 38.9%<br>[36.2%-41.6%] | 35.9%<br>[34.4%-37.4%] | 28.8%<br>[26.9%-30.7%] | 31.3%<br>[29.0%-33.6%] | 31.7%<br>[29.3%-34.1%] |
| Service speed (2) | 23.2%<br>[22.2%-24.2%] | 24.0%<br>[21.8%-26.2%] | 20.7%<br>[19.3%-22.1%] | 24.9%<br>[23.1%-26.7%] | 21.4%<br>[19.6%-23.2%] | 26.1%<br>[23.5%-28.7%] |
| Team (3)          | 35.7%<br>[34.7%-36.7%] | 29.9%<br>[27.4%-32.4%] | 33.7%<br>[32.0%-35.4%] | 37.2%<br>[35.2%-39.2%] | 39.9%<br>[37.6%-42.2%] | 34.6%<br>[31.8%-37.4%] |
| Total             |                        |                        |                        |                        |                        |                        |

Note: (1) The way the guardians or the children were received at the Health Unit; (2) The speed or delay in the child's care (speed); (3) The performance of the health unit's professionals in resolving the problem (team). The interval estimates consider confidence intervals (95%CI) and a 5% level of statistical significance.

Source: Authors, based on microdata from the Continuous National Household Sample Survey (PNAD-C) developed by IBGE in 2022. Excluding "other reasons", mentioned less frequently.



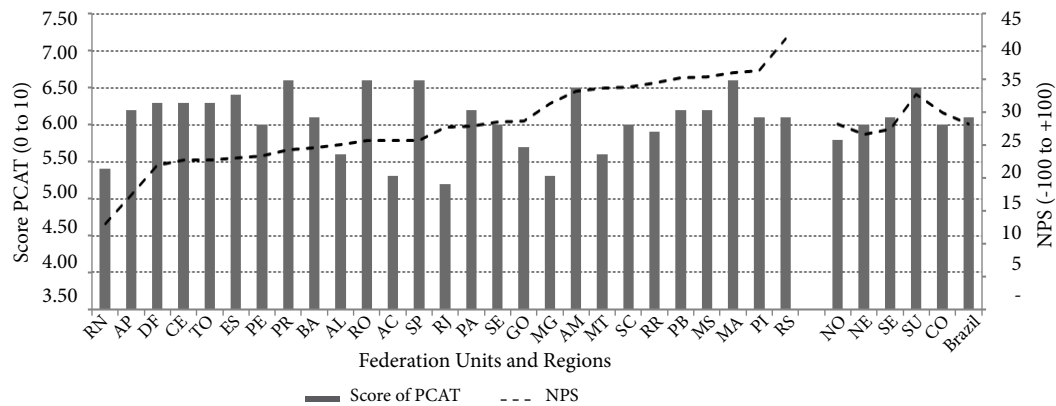
**Graph 2.** Net Promoter Score (NPS) and the association between the score (0 to 10) attributed to the PHC service and the overall PCATool score. Brazil, Great Regions, Federation Units, 2nd quarter/2022. All scores (in ascending order of the "NPS" indicator).

Obs 1: The overall PHC score corresponds to the PCATool score - reduced version, applied to those responsible for children under 13 years of age who used some PHC service in the 12 months before the reference date of the PNAD-C fielded between April and June/2022. Obs 2: In the instrument's methodology, a score above 6.6 corresponds to a high degree of presence and extension of PHC attributes. Obs 3: In 2022, the general scores of children's PHC observed were: Brazil (5.7 [5.6;5.8]), North (5.2 [5.4;5.6]), Northeast (5.7 [5.6;5.8]), Southeast (5.6 [5.5;5.7]), South (6.0 [5.8; 6.2]), Midwest (5.7 [5.4;6.0]). The South Region stands out as the one that obtained the best results in evaluating users responsible for children under 13 years old compared to other regions of the country, particularly the North, Northeast, and Southeast regions.

Source: IBGE - Continuous National Household Sample Survey (PNAD-C), 2<sup>nd</sup> quarter 2022.

northern and northeastern regions, non-whites, schooling, hypertensive patients and diabetic patients, we identified persistent access barriers that characterize this attribute as one of the main challenges for PHC<sup>22</sup>. Historically, access is the PHC attribute with the worst evaluation in

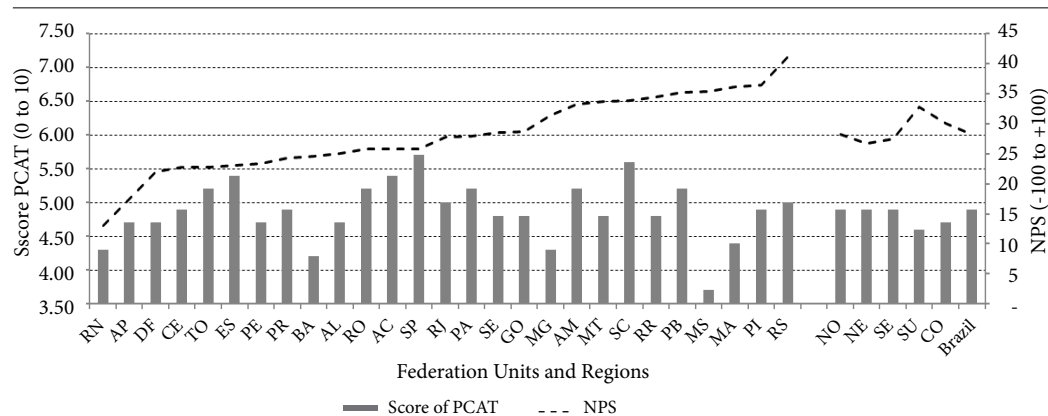
studies using the PCA-Tool<sup>23</sup>. Thus, we can speculate that the difficulty in assuring access to professional appointments remains one of the main reasons patients attribute a quality evaluation, in the results of this research, linked to the category reception and service speed.



**Graph 3.** Net Promoter Score (NPS) and the association between the score (0 to 10) attributed to the PHC service and the overall PCATool score. Brazil, Great Regions, Federation Units, 2nd quarter/2022. Score 9 or 10 - “promoters” (by ascending order of the “NPS”) indicator.

Obs 1: The overall PHC score corresponds to the PCATool score - reduced version, applied to those responsible for children under 13 years of age who used some PHC service in the 12 months before the reference date of the PNAD-C fielded between April and June/2022. Obs 2: In the instrument’s methodology, a score above 6.6 corresponds to a high degree of presence and extension of PHC attributes. Obs 3: In 2022, the overall children’s PHC scores observed were: Brazil (5.7 [5.6;5.8]), North (5.2 [5.4;5.6]), Northeast (5.7 [5.6;5.8]), Southeast (5.6 [5.5;5.7]), South (6.0 [5.8;6.2]), Midwest (5.7 [5.4; 6.0]). The South Region stands out as the one that obtained the best results in evaluating users responsible for children under 13 years old compared to other regions of the country, particularly the North, Northeast, and Southeast regions.

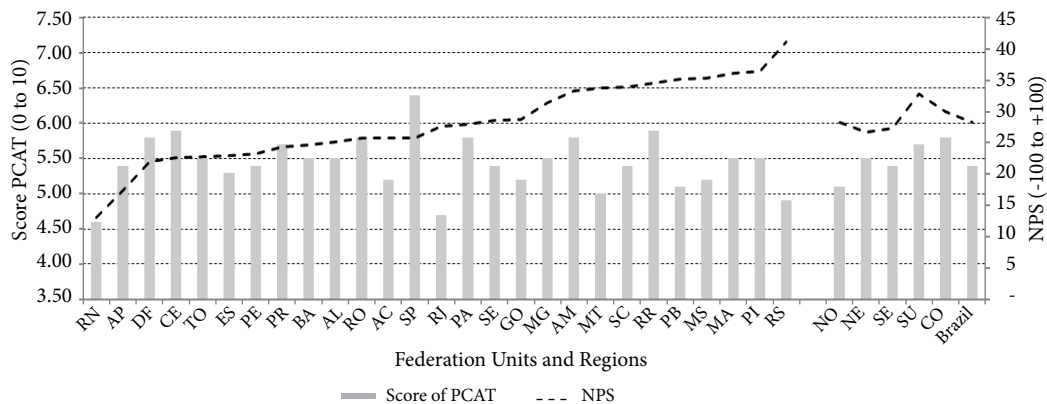
Source: IBGE - Continuous National Household Sample Survey (PNAD-C), 2<sup>nd</sup> quarter 2022.



**Graph 4.** Net Promoter Score (NPS) and the association between the score (0 to 10) attributed to the PHC service and the overall PCATool score. Brazil, Great Regions, Federation Units, 2nd quarter/2022. Score 0 to 7 - “detractors” (by ascending order of the “NPS”) indicator.

Obs 1: The overall PHC score corresponds to the PCATool score - reduced version, applied to those responsible for children under 13 years of age who used some PHC service in the 12 months before the reference date of the PNAD-C fielded between April and June/2022. Obs 2: In the instrument’s methodology, a score above 6.6 corresponds to a high degree of presence and extension of PHC attributes. Obs 3: In 2022, the general scores for children’s PHC observed were: Brazil (5.7 [5.6; 5.8]), North (5.2 [5.4; 5.6]), Northeast (5.7 [5.6; 5.8]), Southeast (5.6 [5.5; 5.7]), South (6.0 [5.8; 6.2]), Midwest (5.7 [5.4; 6.0]). The South Region stands out as the one that obtained the best results in evaluating users responsible for children under 13 years old compared to other regions of the country, particularly the North, Northeast, and Southeast regions.

Fonte: IBGE - Continuous National Household Sample Survey (PNAD-C), 2<sup>nd</sup> quarter 2022.



**Graph 5.** Net Promoter Score (NPS) and the association between the score (0 to 10) attributed to the PHC service and the overall PCATool score. Brazil, Great Regions, Federation Units, 2nd quarter/2022. Score 7 or 8 - “unaffected” (by ascending order of the “NPS” indicator).

Obs 1: The overall PHC score corresponds to the PCATool score - reduced version, applied to those responsible for children under 13 years of age who used some PHC service in the 12 months before the reference date of the PNAD-C fielded between April and June/2022. Obs 2: In the instrument’s methodology, a score above 6.6 corresponds to a high degree of presence and extension of PHC attributes. Obs 3: In 2022, the general scores for children’s PHC observed were: Brazil (5.7 [5.6;5.8]), North (5.2 [5.4;5.6]), Northeast (5.7 [5.6;5.8]), Southeast (5.6 [5.5;5.7]), South (6.0 [5.8;6.2]), Midwest (5.7 [5.4;6.0]). The South Region stands out as the one that obtained the best results in evaluating users responsible for children under 13 years old compared to other regions of the country, particularly the North, Northeast, and Southeast regions.

Source: IBGE - Continuous National Household Sample Survey (PNAD-C), 2nd quarter 2022.

Another reason attributed by patients to performance in the NPS is resolution. The low-resolution rate of PHC in Brazil has been extensively reported in the literature. High rates of referrals to specialties<sup>24</sup>, erroneous referrals of PHC patients to specialties<sup>25</sup>, and the slow reduction in hospitalizations for PHC-sensitive conditions, even before the COVID-19 pandemic<sup>26</sup>, reinforce this perception.

This is the first news, at least to the authors’ knowledge, of a study that associates the highest PCATool scores with the proportion of health unit promoters under the NPS (that is, those who give the highest scores in their evaluations).

### Final considerations

Adopting the Net Promoter Score (NPS) to assess the quality of Brazilian PHC services is a significant innovation by IBGE in the 2022 Continuous PNAD, representing the largest household survey on child health assessment ever conducted in Brazil<sup>25</sup>. Evidence suggests that the NPS can be used as a starting point to understand better the

patient’s experience, which can help identify areas that require further investigation and detailed examination<sup>6,11,18,19</sup>. The IBGE continued to use it in its National Demographic and Health Survey (PNDS), which went to the field in 2023 with a module on access to and use of health services for men and women of childbearing age.

This is the first report, at least to the authors’ knowledge, of a study that associates the highest PCATool scores with the proportion of health unit promoters according to the NPS (that is, those who give the highest scores in their evaluations).

Initially developed to evaluate brands and companies, NPS is now also finding its place in evaluating healthcare services. Previously accused of not being applicable outside of commercial settings, it is now beginning to prove its worth as a simple and valuable way of determining and understanding patient satisfaction. Its simplicity allows its use in settings with few resources or less-educated populations. However, there are still doubts as to whether the Net Promoter Score can be used as the sole method for evaluating services provided in PHC, requiring



greater use in studies, comparisons with internationally used PHC scores, and literature ded-

icated to interpreting its results and comparing/correlating them with other evaluation methods.

## Collaborations

All authors participated in the preparation stages of the article. LF Pinto reviewed the data analysis and the final writing of the text.

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