

TECHNICAL NOTE

N.º 19/2014

Subsidies for discussion of the  
Seminar Administrative Records  
and Complex Sample Surveys

MDS

SAGI

MINISTRY OF SOCIAL DEVELOPMENT AND FIGHT AGAINST HUNGER

SECRETARIAT FOR EVALUATION AND INFORMATION MANAGEMENT

**Technical Note**

No. 19/2014 - Subsidies for discussion of the Seminar Administrative Records and Complex Sample Surveys

**Responsible Technicians**

Alexander Cambraia Nascimento Vaz

Alexandro Pinto

Cecília Lariú

Marconi Sousa

Paulo Jannuzzi

**Revision**

Paulo de Martino Jannuzzi

SAGI Technical Notes is a publication made by the Secretariat for Evaluation and Information Management. It has been created to systematize technical notes, exploratory studies, products and technical handbooks, consultancy reports and analytical reflections made by the Secretariat. The Notes tackle themes in the Ministry of Social Development and Fight Against Hunger's field of interest, and are intended to subsidize directly or indirectly the diagnostic cycle and the conception, monitoring and evaluation of policies, programmes and actions.

The target audience are technicians and managers responsible for the policies and programmes developed by MDS in federal, state and municipal levels. From this point of view, the Notes are technical and scientific texts to be applied with adequate purpose and dimension in order to be suitable to the Policy Cycle. Their production is characterized by objectivity, specific focus and time opportunity.

The notes may be transformed in articles for publication in the future, such as in Cadernos de Estudos (Journals), Revista Brasileira de Monitoramento e Avaliação – RBMA (Brazilian Journal of Monitoring and Evaluation) or another technical and scientific magazine to reach a broader audience.

**Keywords:** *Evaluation; Monitoring; Surveys; Records*

**Unity in Charge****SECRETARIAT FOR EVALUATION AND INFORMATION MANAGEMENT**

Esplanada dos Ministérios | Bloco A | Sala 307

CEP: 70.054-906 Brasília | DF

Telephone: 61 2030-1501 | Fax: 2030-1529

[www.mds.gov.br/sagi](http://www.mds.gov.br/sagi)

**SECRETARY OF EVALUATION AND INFORMATION MANAGEMENT**

Paulo de Martino Jannuzzi

**DEPUTY SECRETARY**

Paula Montagner

## ABSTRACT

The aim of this technical note is to systematize points to subsidize the discussion in the Seminar Administrative Records and Complex Sample Surveys in the production of information and knowledge to monitoring and evaluation of Policies and Social Programs, held in CDDI/IBGE, 3<sup>rd</sup> and 4<sup>th</sup> of November, 2014. The three sections that are part of this study provide specific inputs to be debated in distinct panels at the seminar.

### **1. Institutionalizing the Monitoring and Evaluation of social policies in Brazil: the experience of SAGI/MDS in the creation of statistical systems, research centres and institutions for the undertaking of studies and research**

Constructing a national statistical system necessarily involves discovering what are the main forms of data that the country needs, who produces it and how it should be interpreted. This concept arises from an ample process of priority identification, negotiation and consensus building, which involves extensive dialogue among entities and institutions regarding the nature of necessary information.

According to Brazilian Legislation (Law 6.183, of 11/12/1974), the responsibility of coordinating the national statistical system is afforded to the Brazilian Institute of Geography and Statistics (IBGE). IBGE has become the principal provider of data and information in the country, responsible for meeting the needs of the most diverse strata of civil society, as well as of federal, state and municipal governments. Its institutional mission is to “portray Brazil using the necessary information to allow for an understanding of the country’s reality and to allow its citizens to exercise their rights”.

In addition to the IBGE, there are other agencies concerned with the production of national statistical data, but with an explicit focus on social themes, such the Institute of Applied Economics Research (IPEA), the National Institute of Studies and Educational Research (INEP) and the National Institute of Space Research (INPE).

In this institutional context, we have observed a recent upsurge in the production of statistics with the aim of supporting Brazilian social policies.

In the past decade, Brazil has observed a clear political switch favouring investment in social policies directed to the poorest. This decision played a large role in promoting the creation of various institutions, such as the Ministry of Social Development and Fight Against Hunger (MDS) in 2004, which is responsible for the structuring of policies related to social

development. This expansion also required the organization of a system able to meet the data requirements needed to quantify social issues and to direct the planning, implementation, and evaluation of social policies.

This process led to the creation of the Secretariat for Evaluation and Information Management (SAGI) within the MDS. As technical-administrative unit of the Ministry, SAGI is responsible for its knowledge management, monitoring, and evaluation activities, and for the formulation of policies and programmes. The Secretariat undertakes activities that allow the MDS to better understand its target group, its logic of programme intervention, the problems encountered, the best practices learned and the impacts of government efforts in the area of Social Development.

This institutionalization of monitoring and evaluation activities within the MDS as a part of policy management and in the context of its social programmes is strengthening the institutional capacities of the Ministry, especially as regards its objective to construct and consolidate a net of social protection in the country. This is occurring via two mechanisms. Firstly, different agreements and partnerships are being established between SAGI and public research institutions, such as IBGE. These help finance the social research activities regularly conducted by the Institute regarding, for instance, food and nutritional security, social assistance, productive inclusion, access to social programmes and income transfers, and professional training. This set of research activities is directed at supporting various assessment and monitoring analyses.

Undertaking research requires forming or contracting research teams, institutions or consultancies that possess an adequate technical profile and the necessary capacities to face methodological challenges and the complications of large-scale fieldwork. Consultancies specialized in market, survey or economic research; university research centres; and internal teams for monitoring and evaluation can all help meet at least part of this informational demand. The experiences of the MDS have shown that evaluation research activities – if they are to be undertaken using complex samples with national coverage and an extensive number of households, and which expect to use similar surveys in the future in order to update informational content – require the inputs of research institutions with sufficient experience and financial resources, such as national statistical agencies.

Thanks to this strategy, cooperation with IBGE has, since 2004, led to the creation of accompanying research for the National Household Sample Survey (PNAD) in various themes: 1) Complementary Aspects of Education and Income Transfer Programmes within

Social and Food Security Programmes (2004); 2) Complementary Aspects of Education, Housework, and Child Employment and Access to Income Transfer Components of Social Programmes (2006); 3) Complementary Aspects of Young People's and Adults' Education and Professional Training (2007); 4) Food Security (2004/2009).

Additional financing has been assigned to accompanying research for the Survey of Basic Municipal Information (MUNIC) in topics of Social Assistance (2005, 2009 and 2013), and for the Survey of Basic State Information (ESTADIC) as regards Social Assistance.

There are several other activities currently being undertaken. These include a Research Project on Entities of Social Assistance, a Longitudinal Panel on Families in a Situation of Poverty (where support is being offered in sample design and in technical supervision), and a merging effort to match the Single Registry for Social Programmes and the National Address File for Statistical Purposes (By National Secretary of Citizenship Income). Furthermore, the MDS is currently producing accompanying research for PNAD 2013 in themes of Food and Nutritional Security and of Access to Social Programmes, as well as on Urban and Rural Productive Inclusion for the MUNIC 2014, the ESTADIC 2014, and the PNAD 2014 (Professional Qualification Supplement, Productive Inclusion and Mobility Supplement, and Access to Social Programmes and Single Registries Supplement).

It can therefore be observed that innovative studies or replications of previously realised national investigations have been rendered viable by the cooperation between the MDS and IBGE. This was done by applying the methods that IBGE employs in order to effectively portray Brazil in a manner that allows for understanding of the country's reality and that helps its citizens exercise their rights.

The second manner to institutionalize the functions of monitoring and evaluation occurs through the bidding processes realized by SAGI in order to contract institutions and researchers to execute evaluation studies. For instance, between 2004 and 2014, SAGI contracted specialists to conduct approximately 189 evaluation studies of various policies, programmes and services of the MDS. This external contracting of consulting firms, institutional entities, researchers selected by the National Research Council (CNPq) and universities allowed for economies of scale, methodological diversity, increased scope and higher quality. However, although externally contracted, research activities are always supervised by SAGI. In this manner, a mixed evaluation model is being consolidated: one which combines the independence advantages of external evaluation with the benefits gained in terms of technical ability and extensive programme knowledge typical of an internal

evaluation.

In this manner, SAGI has contributed to the creation of extensive research networks in themes of social development, via the constitution of a demand for studies and research. Finally, one can observe that multidisciplinary research teams have been created, since contracting processes are conducted in a manner that reflects the differential needs of every group.

## **2. Integrating Public and Administrative Registries in the evaluation of social programs: the experience of SAGI/MDS**

The design of research and evaluation studies is becoming more complex as Brazilian social policies continue to rapidly grow in terms of scope and scale of population coverage. This is because social policies which present integrated strategies - such as Bolsa Família, whose approach includes educational coverage, health services, social assistance provision, as well as income transfers - pose new methodological challenges in the evaluation of their results and impacts, which standard field studies, such as experiments and quasi-experiments, cannot fully tackle.

Without considering the ethical imperatives, political viability, or technical capacities of such studies in the context of social policies, increasing evidence has been found in Brazil indicating that, in the context of integrated social programs implemented by numerous and diverse agents – each with their level of competence and commitment – field studies suffer limitations in the estimation of the effects of specific programs and projects, which should be their main contribution, as well as in the estimation of overall effects. The multiplicity of pseudo-randomization factors in the definition of treatment groups, the difficulties of distributing units of analysis in a longitudinal manner, and the size of the sample needed for the desired significance levels can explain some of the concrete limitations of this type of study.

In this view, a study design able to respond to these necessities, at least in part, and to adequately evaluate the effects of social programs in a cooperative and articulate manner needs to be based upon integrated databases, coming from administrative and public registries, created by policy management units and sectorial programmes. Once quality, relevance and specificity of the data are ensured, this strategy would allow researchers to construct models apt for comparative evaluation – or pseudo-randomization – of factual and

counterfactual situations, of treatment and control groups, of larger or lesser interaction of programmes, and of different contexts as regards target populations or implementing agencies. Quasi-experimental, ex-post studies could also be designed using this methodology. Furthermore, in what is perhaps its greatest comparative advantage, this strategy allows researchers to organize data in a longitudinal manner, and according to much more flexible and interesting chronological order or periodical panel data in order to analyse the effects of “time or regularity of exposure to the social programme”.

Naturally, in order to guarantee the relevance of an evaluation study conducted using this methodology, as well as the internal and external validity of its results, it is necessary to ensure that administrative registers and public registries contain variables of analytical interest, that these possess a certain known degree of reliability, that the biases in population coverage are known, and that there are adequate methods of integrating databases according to deterministic, probabilistic methodologies, or, ideally, thorough common random variables. In Brazil, such premises seem to apply to an ample number of the data sources provided by social welfare Ministries, although with considerable variation in terms of the maturity of registries, of collection and actualization mechanisms and, especially, of their observed use in the production of statistical data and of evaluation studies. The Single Registry for Social Programmes (CadÚnico) is one of the most high-quality administrative registries, with its ample range of socioeconomic variables for individuals and families, regular updates and vast population coverage (more than 70 million people, concentrated among the 20% poorest in the Brazilian population). Furthermore, the CadÚnico provides several types of information that could be used as random variables to perform integrations with other databases, such as the Social Identification Number (NIS), the Natural Persons Register (CPF), and others.

Taking advantage of this characteristic of CadÚnico, the Ministry of Social Development and Fight Against Hunger has developed various evaluation studies to quantify the overall impacts on beneficiaries of Bolsa Família and other social programmes in terms of Education, Public Health, and Productive Inclusion<sup>2</sup>. One of these studies was conducted using, other than the CadÚnico, Bolsa Família’s Benefit Payment System (Folha de Pagamentos), a database which allows for the identification of beneficiaries in the Single Registry, and the Ministry of Health’s Food And Nutritional Surveillance System (Sistema de Vigilância Alimentar e Nutricional) in order to evaluate the overall effects of the programme and of the basic healthcare offered to mothers and children. Through the

integration of the data from these sources, it was possible to construct a longitudinal panel of children from 0 to 5 years of age, included in Bolsa Família and who were systematically supported by health-care teams in the period between 2008 and 2012. The study found not only the expected impact in terms of a reduction in extreme malnutrition (as measured by a height deficit) of beneficiary children, but also, quite surprisingly, a decrease in the risk of a child becoming overweight or developing infantile obesity, two phenomena clearly on the rise in the country.

A similar initiative developed by the MDS was a study regarding the performance and results of students participating in Bolsa Família, compared to non-beneficiary students in public institutions. The study was undertaken via the integration of the registries of the School Census of Basic Education with those of Bolsa Família's Benefit Payment System. This approach allowed for the analysis of the schooling trajectory of students between 2008 and 2012, and revealed a faster advance in performance on the part of beneficiary students compared to the others, especially in the North-East of the country.

More recently, this methodological strategy has been employed in the evaluation of the focus, access and performance of Bolsa Família beneficiaries in the National Programme of Access to Technical Education and Employment (PRONATEC), which is part of the strategy for Productive Inclusion of the Plan Brasil Sem Miséria. Furthermore, in order to capture the programme's effects on the professional qualification of beneficiaries upon entering the formal labour market, this study integrates registries of the Annual Social Information Report (RAIS) and of the General Register of Employed and Unemployed Citizens (CAGED), both from the Ministry of Labour and Employment, and registers of Individual Micro-entrepreneurs (MEI). A similar strategy is being employed to evaluate the access of Bolsa Família beneficiaries to opportunities of Technical Education and Higher Level Education. The study is being undertaken using the individualized registries of students, collected with specific instruments developed by the National Institute of Studies and Educational Research.

Public policies require evaluation strategies adequate to their high level of complexity in design and operational arrangements. The construction of longitudinal datasets using administrative registries is certainly an important step in the production of specific, public-policy oriented information and knowledge. The limitations and potential of this methodological strategy, especially as regards external validity of results, will become more



evident as new studies are undertaken and as meta-evaluations point to regularities and irregularities in the results of different studies.

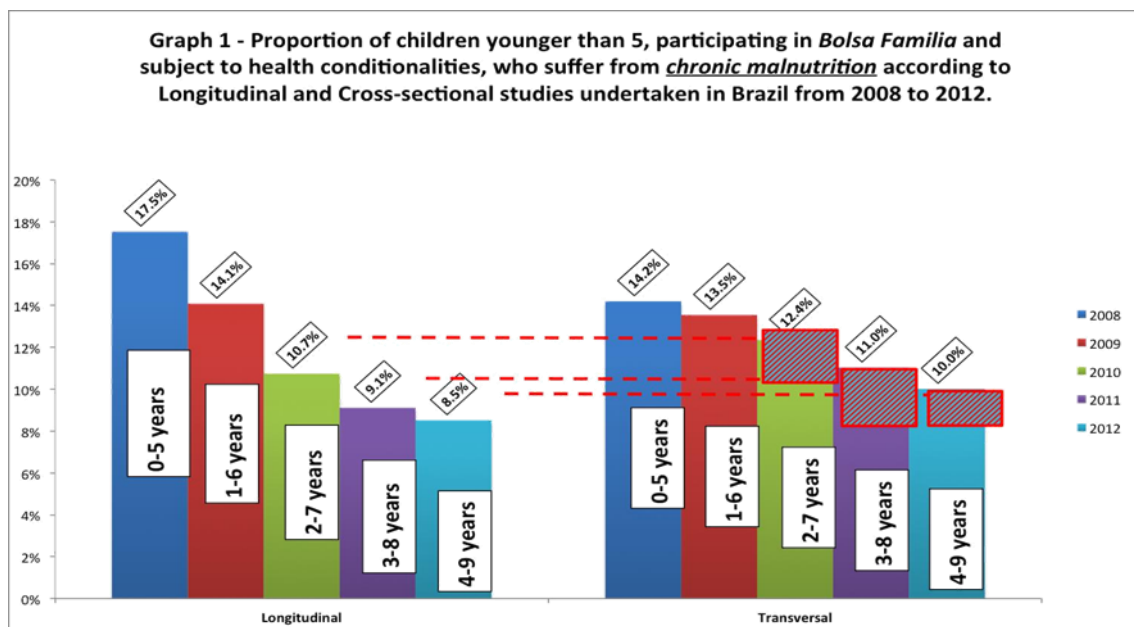
### **3. Analysing the change in nutritional status of children between 0 and 5 years of age participating in Bolsa Família's health programme**

Bolsa Família (in Portuguese, Programa Bolsa Família, or PBF) is a Brazilian income transfer programme, whose main objective is to ensure the access of impoverished families to basic social rights and to break the inter-generational cycle of poverty by imposing socially desirable conditions to which both beneficiary families and political authorities must commit. Within its health component, the Bolsa Família Programme includes offering pre-natal services to pregnant women, providing health support to new mothers in the postpartum period, accompanying child growth and development, and running vaccination activities, to be undertaken within the Primary Care Unit of Brazil's Unified Health System (SUS).

The administrative registries available in the Federal Government's Single Registries for Social Programmes (CadÚnico), in Bolsa Família's Benefit Payment System (Folha de Pagamentos) and in the Food and Nutritional Surveillance System (Sisvan Web), have been utilised as a baseline by the Ministry of Social Development and Fight Against Hunger (MDS) and the Ministry of Health (MS) in order to implement the CadSisvan project. The aim of this project is to evaluate current trends in the nutritional status of children benefitting from Bolsa Família and having received SUS services from 2008 to 2012. The programme evaluated children younger than 5 years old who were in possession of at least one weight or height register within the Sisvan system. Following these criteria, 1.901.370 children were included in the 2008 analysis, with the number rising to 2.365.276 in 2012. The analysis was performed using data included within the information system – with data availability being determined by the geographical coverage of PBF and by the health conditionalities specific to each year studied. Research results point to a reduction of 51.4% in the health deficit by age, which went from 17.5% in 2008 to 8.5% in 2012, using as a baseline the longitudinal data collection of the same individuals across various years (Figure 1). This longitudinal analysis is therefore focused on the accompaniment of the same group of individuals across the years considered in the analysis. In addition, another group was created, including individuals of less than 5 years of age in 2008 and who had at least 1 (one) accompanying

visit in the remaining years included in the study. The total number of children studied amounted to 408.605. As the study progressed, they have obviously increased in age, so that, in 2012, the same group was composed of individuals from 4 to 9 years of age.

The most important aspect to be considered when analysing results for this group is the fact that the check-up of children’s health conditions occurred in a systematic way during all of the period studied. This has ensured that the children effectively received regular and permanent medical support. If we compare members of the treatment group to the children in the control group - who had the same age in the specific years of interest, but who did not benefit from regular health check-ups - we can observe that those benefitting from comprehensive health services presented better results in nutritional terms.



Source: SISVAN 2008-2012, CadÚnico 2012

We can therefore conclude that the length of accompaniment of children on the part of Primary Care teams has a positive impact on the nutritional status of beneficiaries. There is, in fact, a lower chance that children included in the *Bolsa Família* Programme, and subject to the previously mentioned health conditionalities for a time longer than four years, will suffer from a height or weight deficit. For children who received continuous accompaniment within the Primary Care Unit, the study observed a reduction of 50% in the chance of malnourishment and a 10% reduction in the probability of being overweight (Table 1).

**Table 1 – Odds Ratios and Standard Errors observed for the relationship between time spent within the PBF and nutritional status, according to the standard indicator of height according to age – Brazil, 2012**

Variable	Categories	Nutritional Status Height x Age	
		Deficient	Regular
	Up to 1 year	Baseline	Baseline
Length of access to PBF and health services	From 1 to 2 years	0.9 (0.352)	1,659* (0.648)
	From 2 to 4 years	0,88* (0.347)	1,875* (0.653)
	More than 4 years	0,48** (0.189)	2,213** -0.811

Source: SISVAN 2008-2012, CadÚnico 2012

These findings would suggest that the length of participation in the Programme - more specifically a longer period of exposure to income transfers and to access to health services - has the possibility of ameliorating the nutritional status of participating children. Therefore, we can conclude that this type of social programme can lead to health improvements among its beneficiaries, especially as regards more vulnerable groups such as young children.