



Munich Personal RePEc Archive

# **The effects of Bolsa Familia on human development: systematic review approach**

Ciula, Raffaele

November 2022

Online at <https://mpra.ub.uni-muenchen.de/116768/>  
MPRA Paper No. 116768, posted 20 Mar 2023 16:22 UTC

# The effects of Bolsa Familia on human development: systematic review approach

Raffaele Ciula

## Abstract

Usually conditional cash transfer programs (CCTs) are interpreted as passive policies dealing with income maintenance, and needs fulfilment, however, recently some part of the literature has suggested a more active role for them. The aim of this article is to investigate the inclusive role of human rights-based CCTs, using Bolsa Familia (BF) policy as a case study. Specifically, I assess the effect of this program on human development as a proxy of achievements in fundamental capabilities and human rights. I choose this type of development because, compared to economic development, it puts at the centre of the analysis human life quality. In order to infer some causal relation between BF and human development I use the systematic review approach, based on natural, quasi-experimental, counterfactual, and longitudinal analysis.

The main findings suggest some positive effect of the BF and human development. Hence, BF can be interpreted as human rights-oriented policy, which is able to create social inclusion in fundamental domains to some extent. The main policy implications deal with integrating BF with the education, and the health system as well as with complementary interventions more tightly, to ameliorate the advancement in human rights level.

**Keywords:** Human Development, Freedoms, Human Rights, BF, Inequality

## 1. Introduction

Human rights for children and adults are crucial to obtain fundamental entitlements which enable them to live a dignified life (Sen 2005; Sen 2006). Also, governments have an ethical obligation to promote and protect human rights, in this respect, CCTs based on human rights, which aim to support poor families, recently have been showed to play an active role in protecting and fostering freedoms, such as Chile Solidario, and the BF, (Shulte 2007; Barrientos, and Hulme 2010; de La Briere, and Rawlings 2006).

The topic of this article deals with evaluating human rights-oriented CCTs in terms of capability expansion for disadvantaged families by using BF as case study. Specifically, my aim is to analyze the impact of this policy on human development, expressed by the dimensions which form the Human Development Index (HDI): education, health, and income. In fact, the effects of BF on the HDI's single dimensions have been studied extensively but the BF overall inclusive role in terms of human development is still overlooked. Hence, I want to fill this gap in the literature, which is important because social policy based on human rights should be assessed not only in single dimensions, but it should be evaluated about its role in improving the quality of human life and the width of people's capability set: that is in promoting human development. In fact, human development expansion entails freedoms increase in crucial domains (Sen 2003) as well as an enhancement in fundamental human rights (Vizard 2006).

Further, this topic is interesting because of the interconnected nature of the BF, which is integrated with education, health policies, and complementary interventions, hence, it might have compounded effect on human development. In fact, education, health, and income are naturally linked together, and BF, by affecting each one contemporaneously, can increase their positive feedbacks in a

disproportionate way compared to a policy which targets only one domain. Also, Brazil is an interesting case study, because its constitution interprets income security, education, and health as fundamental human rights to be promoted and protected (de La Briere, and Rawlings 2006; Midgley, and Piachaud 2013). Therefore, it is important to inspect if BF is fulfilling the mandate of the Constitution. Finally, BF is one of the most important examples of CCTs in the world, hence, it can represent the average effects that human rights-based CCTs can exert on human development about nations which share similar features with Brazil. Hence, the effects of BF on human development may be generalized to these nations to some extent.

Moreover, I choose human development as definition of development as evaluative space because it can be interpreted as the substantial realization of basic human rights and capabilities (Sen 2005; Vizard, Fukuda-Parr, and Elson 2011), also it gives better picture about a broader concept of development which is people-centered (Sen 1999) compared to economic development, based only on resources (Sen 2000). About the inclusion of BF inside human rights-based CCTs, this policy protects and promotes fundamental human rights, and its conditionalities are based on human rights, further its structure includes cash transfers mingled with integrated policies and interventions, also it has participative structure. As these factors are pivotal characteristics of human rights-based social policies (Gabel 2016; Vázquez, and Delaplace 2011), BF can be included in the set of CCTs based on human rights.

In order to analyze this issue, I undertake a systematic review approach to summarize the literature about BF effect on education, health, and on income dimensions, including consumption, to infer the effect on the HDI too. The results. The outcomes suggest positive effect of BF on human development to some extent, although the impact on some aspect of health, and education need to be strengthen in order to make wellbeing more robust.

The structure of this article includes the introduction to the structure and the goals of BF, the methodology of the systematic review, and the theory of change produced by the BF. Further, it includes the findings of the systematic review, and the conclusions about the effect of BF on human development in Brazil.

## 2. Goals and structure of the BF

The BF is a social intervention that guarantees and promotes fundamental human rights written in the Brazilian constitution, whose social protection content is quite broad, as it includes Brazilian families in the society. (Drodge, and Shiroma 2004; Midgley, and Piachaud 2013). Specifically, the BF was set up in 2004 under Lula's government, and it received wide support at international level (Hall 2008). The budget of the BF in 2009 is 12.4 billion R\$ and the coverage is 41.2 million of individuals, which is 21.8% of Brazilian families (Soares 2012; Abreu 2011). It is important to highlight that this program's structure is based on discussions of a big share of different bodies, and organizations, including the World Bank, and the civil society (Trubek et al. 2013). This fact makes the policy-making process extensively participatory, in which citizens, and the poor had big voice on the BF structure. Particularly, the structure of the BF is derived from the merge of some separate programs, the Auxilio Gas, which delivers cooking fuel, the Bolsa Escola, that reduces costs of school attendance, the PETI, which tackles child labor, the Social Card Program, which delivers food, and basic necessities, and the Bolsa Nourishment which delivers cash transfer to families with children between 0 and 6 years old (da Silva e Silva et al. 2008). One goal of the aggregation of these policies into a single program is cost-efficiency: in fact, public savings, and administrative efficiency were achieved by bringing together similar administrative facilities, and overlapping programs. Specifically, the program eliminated duplication of administrative structures, also it reduced the number of administrative procedures to service, and to transfers access. Similarly, overlapping sub-national programs were embedded into the BF, which reinforced the elimination of redundant structures (Lindert et al. 2007). Broadly speaking, BF transfers cash to poor families: eligible families are those with pregnant women, and those with children less than 19 years old. The eligible family income in 2005 is up to 70 Reals, and between 70,01 Reals to 140 Reals, without including social transfers. In order to obtain the transfers, the recipients have to fulfil some conditions. Specifically, families have to grant at least 85% of monthly school attendance for children between 6 to 15 years old, and monthly attendance of 75% for individuals between 16 to 17 years old. Moreover, pregnant or breastfeeding women have to make periodical health visits, also they have to follow educational health, and nutrition meetings. Similarly, families have to give vaccinations to children whose age is lower than 7 years old and have to take them to healthcare centres (Mourao, and de Jesus 2011; Lindert et al. 2007).

Specifically, families self-select into the Cadastro Unico (CU), which is the database of poor families, and into the BF by self-declaring their income, also the municipalities make a list of potential beneficiaries using both income figures and often employing non-monetary indicators. Afterwards, the accuracy of this information is checked at federal level, which confirms the final list of BF recipients (Soares 2012). In addition, the federal government estimates the disadvantage of families using a multidimensional index, the Family Development Index (FDI). This index is structured along some dimensions: family composition, access to knowledge, access to employment, availability of income resources, childhood development, housing conditions, and absence of vulnerability (Quinhoes, and Fava 2010). Therefore, the FDI contributes to verifying self-reported incomes for BF eligibility, to identifying families in situations of vulnerability, and to identifying priority areas for further public action. (Lindert et al. 2007). Furthermore, local authorities consider whether family income is highly volatile and does not allow to fulfil the eligibility into BF, in this case, if families show multidimensional vulnerability the authorities can let these families in the BF (Soares 2012). Moreover, the exit rule lets graduated families stay inside the BF for two more years if their income is higher than the eligibility income threshold, but lower than the half monthly minimum wage per capita, and after two years they exit BF permanently (Hellmann 2015). Also, different transfers are provided to poor families, a basic payment, that is unconditional and independent of having children, this income is transferred only to extreme poor

families; further a variable transfer is given if the family has at least one child up to fifteen years old, and if there are adolescents between sixteen and seventeen years old who attend school. Moreover, variable amount of money for families with children up to six years old is provided, this transfer is given until the household is below a specific per-capita monthly income (Trubek et al. 2013). These transfers do not have an incentive motivation, but have the specific aim to cover basic human rights.

Further, BF can be integrated with existing state, and municipal social programs, therefore the transfers of the latter interventions can be topped up with BF transfers, or they can be integrated with the services and the structure of the BF (da Silva e Silva et al. 2008; Hellmann 2015).

Similarly, the BF is included in a set of complementary programs, by using the information inside the CU (Hellmann 2015). The supplemental transfers delivered due to the enrolment in local, and complementary programs are received jointly with the BF transfers, using a new social card delivered by the Federal Government (Hellmann 2015). Further, since 2011 the BF has been placed inside an extensive web of services and programs: the Brazil Without Extreme Poverty, and the Zero Hunger Project (Trubek et al. 2013). In this sense, the coordination among different Ministries through joint action protocols is very important for the integration of all these programs (da Silva e Silva et al. 2008). Moreover, the interlinked nature of BF is based on the recognition of multidimensional notion of disadvantage, and on the interrelated nature of deprivations (Lindert et al. 2007). Similarly, BF and the complementary programs form a network of intersectoral services, which are coordinated, and flexible to the demands of families. The most important goal of this net of services is empowering households and allowing for permanent escape from multidimensional poverty. Also, they aim to widen and reinforce the impact of the BF cash transfers, as well as to reduce inequalities (Quinhoes, and Fava 2010; Mourao, and de Jesus 2011). Further, these programs include the same recipients, therefore self-selection and agency are eased. Moreover, the officials of the municipalities, the Social Control Councils members, and the state coordinators of the BF contribute to the knowledge of these schemes, and to the participation in these interventions. Specifically, the role of the CRAS is about home visits, to understand issues of families, to adapt the provision of the complementary services to individual necessities, as well as to help households have access to these interventions (Quinhoes, and Fava 2010). The complementary programs tackle different issues, employment and economic inclusion, examples are the Next Step program, access to microcredit programs, and interventions that give the possibility to open savings account (Hellman 2015; CGAP 2011). Further, education programs are included in the complementary interventions, such as Brazil Alphabetization, the ProJovem program, and Brasil Carinhoso (da Silva e Silva et al. 2008; Lindert et al. 2007; Cecchini et al. 2015; Gregol de Farias 2014 ). Finally, there are programs about light accessibility, and about housing ownership too (Robles, and Mirosevic 2013; Valença, and Bonates 2010; Chirivi, Quiroz, and Rodriguez 2011; Tatagiba et al. 2014).

About the registration process in the CU, families can visit and register at the fixed and mobile posts, at schools, health centres, social assistance centres, neighborhood organizations, churches, and at the central municipal office (Lindert et al. 2007). In the same places claimants can be informed about the main BF features, and the eligibility rules of the program, as well as about how to register in the CU. Also, social workers visit homes of potential beneficiaries to register them (Hellmann 2015). Moreover, media spread information about the BF structure and its eligibility rules. For example, the use of toll-free hotlines, the emails to the MDS, and the means “Speak with the MDS” promote transparency, accountability, and awareness of the BF (Lindert et al. 2007; Hellmann 2015). About the conditions, these are mandatory in order for claimants to stay in the BF, and they want to protect child current and future life quality, as well as to spur radical social change. Specifically, the government has the duty to create and expand services, and to coordinate public support to allow households to fulfil these conditions. Particularly, the CRAS, which is required in every municipality, plays an important role about BF implementation and conditionality fulfilment. This body, which is made of a team of social workers, designs, coordinates different services, and delivers them to the families in a flexible way. Similarly, the CRAS monitors service

quality, their quantity and makes accountable the local government to the citizens. Furthermore, the various local councils allow individuals to participate in the policy-making process, and to express their demands about the BF. Moreover, families which cannot meet the conditions can consult the CRAS to overcome their issues. In this regard, the CRAS sets up personalized assistance for these households, and in this period of assistance sanctions are suspended (Hellmann 2015). However, when families do not abide by these regulations four warnings are sent before the transfer is permanently suspended, although only variable transfers can be blocked (Soares 2012). Further, highly vulnerable BF recipients, identified using the FDI, are delivered social worker accompaniment, and social services (Lindert et al. 2007). Similarly, the Government set up an appeal system which can be used by recipients when the suspension of benefits is considered unfair, and the CRAS helps families under every aspect of the disputes (Trubek et al. 2013).

About the administrative structure of the BF, there are three levels of interaction, federal, regional, and municipal level. Also, the MDS signed joint agreements with the municipalities to implement the decentralization of BF. These agreements describe the rules of the operationalization of BF for every government layer. Particularly, municipalities must deal with service availability, good quality service standards, and with the creation of social control councils. Moreover, municipalities must select the list of potential beneficiaries, using the CU, also municipalities compute eligible recipients quota, within the potential eligible set of beneficiaries in the CU. Specifically, the national government sets BF quotas to municipalities according to poverty headcount for a municipality, and then municipalities employ spatial maps of poverty, vulnerability, and other indicators, such as the human development index, to identify and target geographic concentrations of poverty (Lindert et., al 2007). Further, municipalities have to fill and update the information inside the CU and must monitor health, and education conditions fulfilment. Moreover, the design of complementary programs is decided by the three governance levels, within a coordination body, (Trubek and al. 2013), and they are implemented at municipal level. Finally, the MDS has different audit organizations which contribute to monitoring the actions of the municipalities (Lindert 2007). Moreover, to avoid possible corruption, and clientelism, money is transferred directly by the Federal Government to families' bank account.

Overall, the structure, and the main features of the BF which delivers, agency, freedoms, and participation suggests that this policy is a human-rights based CCT which includes and empowers a wide set of beneficiaries (Salomon 2007; Gabel 2016; Vázquez, and Delaplace 2011, Vizard, 2006).

### **3. Possible effects of BF on health, education, and income**

As far as the mechanisms through which BF may have an impact on healthcare, education, and income are concerned, it directly affects the availability of vaccination card, and the access to healthcare through the health conditionalities, which incentivize parents to let children go to healthcare centres, and that incentivize pregnant women to go to health checks too. Also, the cash transfer can give the resources to reach the healthcare centres, similarly, the amelioration of nutrition can be a direct consequence of the availability of in-kind, and cash transfers (Lignani et al. 2010; Kamakura, and Mazzon 2014). Further, income security can reduce overworking, the need of being employed in more jobs contemporaneously, the issue of working not enough hours, and via these channels the BF can avoid mental, or physical health issues. Finally, school attendance conditionalities can increase the level of education of children and indirectly enhance the level of health (Sen 2013; Sen 2015).

About the effects of BF on education, attendance conditionalities, and the cash transfers may cause reduction in parents' and children's worked hours, as well as can increase parents' incentivization of letting their children go to school, these factors can spur positive outcomes on education attendance, and attainment (Soares 2012; Santos, and Magalhaes 2012; Ferro, and Nicollela 2007, Simoes, and Sabates 2014; Soares 2013). A first possible mechanism deals with the fact that the BF family becomes richer due to the transfers, hence it does not need children to work anymore, or it does not need children to work long hours. Moreover, cash transfers can spur a reallocation of worked hours between parents, hence one of the parents can decrease the amount of worked hours to take care of the house and the children. In turn, this fact causes a decrease in domestic unpaid work of children. Both factors can increase school attendance, and education achievement. In fact, parents' worked hours reallocation can improve parenting, and child education monitoring. Similarly, BF can deliver more income security, and can contribute to generating valued employment possibilities, both means can reduce parental stress, increase parenting, and indirectly improve education achievement. Also, the benefits can cover a big part of costs related to education, such as books, and transportation costs, which can enhance education attainment (Ferrario 2014; Cruz, and Ziegelhofer 2014). Finally, health conditionalities can contribute to easing education access.

About income, cash transfers can increase the amount of family disposable income (Andrade et al. 2012), similarly the level of transfers may spur individuals to increase worked hours to reach a valued level of monthly income, and savings. Moreover, the transfers, complementary programs, in-kind transfers, can increase the possibility to search for jobs and to find good employment opportunities in the formal sector, as well as to work sufficient hours, which can increase the level of family income. Also, the BF can give the possibility to quit informal, and precarious jobs to search for better employment opportunities. Similarly, the cash transfers, and complementary programs, can give the possibility to start new business, to ameliorate the economic situation of current business, and to generate further job opportunities in the formal sector (da Silva e Silva, and de Almada Lima 2014; ILO 2006; Nazareno 2016). All these factors can increase family income level. However, BF might have negative influence on employment, and income domain, such as by reducing working hours or by discouraging job searching (Marinho, and Mendes, 2012).

This section highlights how BF can have positive outcomes on health, education, and income level, also these findings suggest that BF may have positive effect on the overall human development of Brazilian families.

## 4. Methodology

As no study about the impact of BF on the HDI has been undertaken yet, I use systematic review to estimate the effects of this policy on education, health, income and based on the results I try to infer some impact on the latter index as proxy of human development. Specifically, the systematic review summarizes the literature on a particular topic employing inclusion criteria useful to collect articles focused on the aim of the study (Hakim 2000). Particularly, I review studies suggesting some causal link between BF, education, health, and income, by using quasi-experiments, natural experiments, counterfactual analysis, observational, and longitudinal analysis. Moreover, I did not carry out meta-analysis because of the big variety of outcomes that the different research articles consider. The main steps of this standard systematic approach deal with well-defined research questions, key variables description, inclusion and search criteria, quality assessment of the articles, and the final results. The last step is divided in four sections, each for every dimension, and at the end there is a summative conclusion on the impact of BF on human development. About the variables for each dimension, the education domain includes enrolment and attendance rate, drop-out rate, repetition rate, pass-grade, test score achievements, professional and computer courses, missed school days and school hours, age-grade discrepancy, and adult education. About the health domains, I use healthcare utilization, access to public healthcare centres, number of babies born dead, deaths in the childhood, babies born full term, mortality rate, prenatal care visits, height-for-age and weight-for-age measures, weight/height, psychosocial health, post-neonatal mortality rate, body-mass index, birthweight, immunization card possession, timely vaccination, illnesses, healthcare visits, hospital admissions, and oral health conditions. Finally, about income the main variables are headcount poverty, poverty severity, ordinal measures of poverty, poverty intensity, HI measure, poverty gap, and food consumption expenditures, basic items consumption expenditures, health expenditures, and education expenditures.

Moreover, I focus on the concept of human development to assess this policy because it encompasses economic development, and it includes domains related the possibility to live a worth life, and related the human rights achievement (Sen 2000). I use the HDI to represent human development, because it is well-established index created by the UNDP based on Sen's Capability Approach (Anand, and Sen 1997; UNDP 2000). It also shows social inclusion in education, health, and income, which are also human rights promoted and protected by the Brazilian constitution.

### 4.1. Research questions

The main research questions analyze the impact of BF on education, health, income and on human development, specifically:

What is the evidence that BF affects education, health, and income outcomes?

What is the evidence that BF has an impact on human development?



## 4.2. Search and inclusion criteria

In order to undertake this systematic review, I searched for articles which indicate causal quantitative links between BF and various aspects of health, education, income poverty, and consumption, specifically, this search tool includes natural experiments, quasi-experiments, other experiments, counterfactual analysis, and observational, longitudinal studies (see table 3). Particularly, I retained the quantitative outcomes of the mixed method studies, and I excluded qualitative studies because there is no agreement on the way to address their quality of methodology (Bronson and Davis 2011). Specifically, I selected articles using the following criteria: English or Portuguese abstract, and English text, their adherence to the research questions of the review, and the originality of research analysis. I excluded the analysis at macroeconomic level because my aim is to account for the impact at individual, and municipal level, I also excluded articles which do not focus on the three domains: education, health, income, and consumption. I collected studies from a variety of online databases: IBSS, Econlit, SocIndex, IDEAS, Google Scholar, Internet using Google search engine, and the LSE database, which contains many online journals and gray literature, using a combination of many keywords, such as BF and human development, or BF and health, BF and education, BF and income poverty (see table 3). Particularly, in the first step, I retained 2,812 articles between peer-reviewed academic articles, official publications, and gray literature, by inspecting their titles, abstracts, as well as the introduction and conclusions. In the second step, I carefully read the content of these articles and I kept 220 papers as they match the inclusion criteria. In the third stage, I focused on the internal validity of these articles, and I retained 32 articles. Finally, I reviewed the external validity, construction validity, statistical conclusion validity, and the internal validity, and I retained 27 articles (see table 2). Specifically, there are 27 articles, but 28 empirical analyses, in fact the Ph.D. thesis by Bastagli (2008) contains a counterfactual analysis and a control-treatment analysis.

### 4.3. Quality assessment of the studies

The quality assessment of quantitative studies is a crucial step to weight the importance of the articles in terms of their results (Bronson, and Davis 2011). I will assign weights to each analysis according to its internal validity, using the Modified Maryland Scientific Methods Scale (Sherman, et al. 2002; Madaleno, and Waights 2014), that is according to the level of causal impact that can be inferred from the studies. Also, in order to assess the overall weight of the articles for each dimension I added the external validity, the construct validity, and the statistical conclusion validity. Particularly, the external validity indicates the generalizability of the BF outcomes of the articles for the whole Brazil, and the statistical conclusion points out the statistical outcome of the results, including the sample size of the analyses. Finally, the construct validity focuses on the fact that the measurement considered analyzes the research question (Bryman 2008, Farrington 2003), and this category of validity is include the articles in this systematic review. Specifically, this scale attaches weight one to cross-sectional comparison between treated and groups, as well as to before-and-after comparison of a treated group over time. However, control variables are not used to match treated and control groups or periods. This scale assigns weight two to cross-sectional studies which compare treated and control groups, and to before-and-after comparison of treated groups over time, which make use of appropriate control variables or matching techniques to adjust differences between treated and controls groups, and to control for before-and-after changes over time (Madaleno, and Waights 2014). This scale gives weight three to an empirical analysis if there is “comparison of outcomes in treated group after an intervention, with outcomes in the treated group before the intervention, and a comparison group used to provide a counterfactual (e.g. difference in difference). Techniques such as regression and (propensity score) matching can be used to adjust for difference between treated and untreated groups, but there are likely to be important unobserved differences remaining” (Madaleno, and Waights 2014, 4). It also assigns weight four if “quasi-randomness in treatment is exploited, so that it can be credibly held that treatment and control groups differ only in their exposure to the random allocation of treatment” (Madaleno, and Waights 2014, 4). Examples of appropriate techniques are instrumental variables or regression discontinuity, which should be adequately designed. Finally, I attach high weight to the empirical analyses that have a score of four in the Modified Maryland Scientific Methods Scale (MMSM), I attach good weight to articles whose score is three, similarly, I attach low weight to the papers which have a score of two, and I attach very low weight to the analyses that show a score of one.

About the counterfactual analysis, this scale does not evaluate this methodology, so I assessed the quality of this empirical approach with respect to the goals of the articles. In this sense, I assign high weight to the first-round counterfactual analyses, as they are able to show that BF transfers can reduce income poverty with respect to a specified poverty threshold.

About the final weights, a regression discontinuity experiment set up by Cruz, and Ziegelhofer (2014) is assigned high weight. Similarly, first-round counterfactual analyses by Bither-Terry (2014), Da Costa (2008), Higgins (2011), Soares (2013), and Bastagli (2008) are assigned high weight.

Moreover, Nilsson and Sjoberg (2013) implement a regression discontinuity experiment whose forcing variable is not so sharp due to the lack of identification possibility of the treated families, therefore good weight is assigned (see table 1). Moreover, quasi-experiments by Neri (2008), Shaffland (2014), Reynolds (2013), and longitudinal fixed-effect models by Guanais (2013), Rasella et al. (2013), Shei (2013), and Simoes, and Sabates (2014) minimize the experimental bias caused by the non-randomization of the control group, hence the weight assigned is good (see table 1). Cross-sectional quasi-experiments by Amaral, Goncalves, and Weiss (2014), Andrade et al. (2012), Silveira, van Horn, and Campolina (2013), de Oliveira (2005), De Braw et al. (2015), De Braw et al. (2012), Kamakura, and Mazzon (2014), Shei, et al. (2014), and Bastagli (2008) are assigned low weight (see table 1). Finally, cross-sectional articles by Bohn et al. (2014), de Oliveira

et al. (2013), Mourao, Ferreira, and de Jesus (2012), Paes-Sousa, and Santos (2009), Paes-Sousa, Santos, and Miazaki (2011) are assigned very low weight, because of the inclusion of inadequate inclusion or because of no inclusion of control variables (see table 1).

## 5. Results

As mentioned in the previous sections, the selection process led to including twenty-eight articles and twenty-nine empirical analyses in this systematic review. Specifically, most of the papers show quasi-experiments (seventeen), also three articles contain natural experiments, four papers include observational studies, and five articles contain counterfactual analyses (see table 4). Similarly, this set of articles are made up of seventeen peer-reviewed papers, three working papers, three theses, two reports, one unpublished article, and two book chapters (see table 5). In the following subsections, the findings about education, health, and income as well as consumption are analyzed.

### 5.1. Education

About the dimensions education attendance, enrolment, professional courses, and other education courses attendance, empirical analyses by Silveira, van Horn, and Campolina (2013), De Brauw et al. (2015) De Brauw et al. (2012), Reynolds (2015), Bastagli (2008), and Mourao, Ferreira, and de Jesus (2012) show positive, and significant outcomes on attendance. Similarly, an analysis by Amaral, Goncalves, and Weiss (2010), suggests positive outcome on enrolment. Moreover, all these papers have high or good external validity except for Mourao, Ferreira, and de Jesus, (2012), which shows low external validity. However, Mourao, Ferreira, and de Jesus (2012) shows no statistically significant outcomes about literacy courses participation, youth and adult education courses, and school attendance for children between 6 and 17 years old. Also, Reynolds (2015) indicates no statistically significant difference about young people who have been treated with a gap. Further, de Oliveira (2005) points out negative outcome on school attendance, but it shows positive outcome on allocating further time to study. Also, Nilsson, and Sjöberg (2013), Shaffland (2014), and Neri (2008), which have high or good external validity, highlight negative outcomes on school enrolment (see table 1). Hence, BF suggests negative effect on school enrolment, and positive outcome on school attendance.

About age-grade discrepancy, and grade repetition, Amaral, Goncalves, and Weiss (2010), and De Brauw et al. (2012), show positive effect of BF on these dimensions (see table 1). However, about grade repetition, De Brauw et al. (2015) shows statistically non-significant outcome. Therefore, the outcomes highlight positive effect of BF, although the quality of the articles is low. About grade progression, and pass-grade, De Brauw et al. (2015) indicates positive but non-significant outcome on grade progression. Also, De Brauw et al. (2012), and Simoes, and Sabates (2014), which focuses on fourth grade students, show positive and significant results. However, De Oliveira (2005) points out negative effect on school progression (see table 1). Hence, the overall outcome shows positive effect of BF on the previous dimensions.

About drop-out rate, De Brauw et al. (2015), and De Brauw et al. (2012), highlight positive but non-significant outcome. However, Simoes, and Sabates (2014), and de Oliveira (2005) suggest positive significant effect (see table 1). Hence, the results indicate positive result on this dimension. About school outcomes, Simoes, and Sabates (2014) shows positive effect of BF on test scores

about Portuguese language, but negative results about Maths. Hence, the outcome is mixed (see table 1).

Finally, about missed school days, Shaffland (2014) suggests slightly negative but not statistically significant outcome on missed schooldays, whereas Neri (2008) shows positive findings on missed school days. Probably, the final outcome on this dimension indicates positive outcome.

Overall, the analysis on different aspects of educations suggests positive influence of BF on education.

## 5.2. Health

As far as the broad dimension healthcare access is concerned, it includes access to prenatal care, to public healthcare centres, healthcare utilization, the use of dental services, of adequate prenatal care services, and hospital admissions due to diseases. About this broad dimension, De Brauw et al. (2012), Shei et al., (2014), and Rasella et al. (2013), which show high external validity except for Shei et al. (2014) whose external validity is low, indicate positive results on the previous outcomes. On the other hand, de Oliveira et al. (2013), and Mourao, Ferreira, and de Jesus (2012), which show low external validity, indicate negative outcomes about dental care services use, and prenatal visits. Also, Mourao, Ferreira, and de Jesus (2012) show no statistical significance about medical visits to health centres, and about gynecological visits. Similarly, De Brauw et al. (2012) shows not statistically significant outcome about pregnant women with no prenatal care visits and positive, statistically significant outcome on prenatal care visits, but both analyses show low sample size. Moreover, this article shows no significant outcome about pregnant women receiving adequate prenatal care. Probably, this analysis suggests positive outcome of BF on these dimensions.

About health outcomes, which is made up of prevalence of dental caries, severity of caries, illness, and psychosocial health, respiratory infections, and malnutrition Shei et al. (2014), and Rasella et al. (2013) indicate positive findings, whereas de Oliveira et al. (2013) suggests negative results about dental caries and caries severity. This analysis shows positive impact on these dimensions.

About valid vaccination cards, and timely vaccinations, De Braw et al. (2012), Bohn et al. (2014), which have high external validity, as well as Mourao, Ferreira, and de Jesus (2012), Shei et al., (2014), and Rasella et al., (2013) indicate positive findings on both dimensions. However, Andrade et al. (2012) show statistically non-significant outcome on both dimensions, also Paes-Sousa, Santos, and Miazaki (2011) indicate non-significant outcome on child health card possession. Hence, the main result on this dimension is positive.

About anthropometric measures, Paes-Sousa, and Santos (2009), Paes-Sousa, Santos, and Miazaki (2011), point out positive effect of BF on height-for-age, weight-for-age. Moreover, De Braw et al. (2012) show positive outcomes about weight/height, body-mass index, and babies born full-term, however it indicates non-significant results on height-for-age, weight-for-age, birthweight, stunting, and wasting. Further, Paes-Sousa, and Santos (2009), Paes-Sousa, Santos, and Miazaki (2011) point out statistically non-significant outcomes about weight/height, and normal birthweight. The number of articles which show no significant outcomes on high number of dimensions probably points out mixed outcome.

About babies born dead, deaths of babies during the childhood, under-five years old mortality rate, infant mortality rate (up to one year old), post-neonatal mortality rate (between 28 days and 364 days old), and neo-natal mortality rate (similar to babies born dead: up to 28 days old), Shei et al. (2013), Rasella et al. (2013), and Guanais (2013) indicate positive findings on under-five mortality rate, post-neonatal mortality rate, and infant mortality rate. However, Neri (2008) shows negative but statistically non-significant outcome of BF on deaths of babies during the childhood, up to six years old. Moreover, Shei et al. (2013) shows negative, but statistically non-significant outcome on neonatal mortality rate. Also, Neri (2008) indicates negative results on death of babies in the

childhood, up to one year old, similarly, this article points out negative outcome on babies born dead. Therefore, this analysis indicates positive effect on death of babies below five years old, including post-neonatal mortality rate. Probably, it also suggests negative findings on babies born dead, and mixed results on infant mortality rate, as Neri (2008) shows negative outcome about deaths of babies up to one year old, whereas Shei et al (2013) indicates positive outcome on mortality rate up to one year old.

Overall, the articles show that BF has positive effect on this domain.

### **5.3. Income**

As far as poverty income is concerned, articles by Bither-Terry (2014), Higgins (2011), Da Costa, Salvato, and Diniz (2008), Soares (2013), and Bastagli (2008) show positive result of BF in reducing the value of poverty headcount, poverty severity, ordinal measures of poverty, poverty intensity, HI measure, and poverty gap (see table 1).

As far as consumption expenditures are concerned, Kamakura, and Mazzon (2014), and Cruz, and Ziegelhofer (2014) show that BF increases the expenses on big variety of basic items. Finally, de Olivera (2005) shows mixed outcome about the consumption expenditures on many items (see table 1).

Overall, BF plays good role in enhancing the expenditures of Brazilian families over time and in decreasing income poverty.

Finally, the pervious outcomes on all dimensions included in education, health, income poverty and consumption expenditures reveal a clear positive impact on these domains. Similarly, the external validity of the outcomes is high in every domain, hence BF contributes to affecting the HDI in Brazil, that is it plays a fundamental role in enhancing human development of children and adults in Brazil over time.

#### **5.4. Discussion about the results of the systematic review**

The findings of the previous section indicate some causal impact of the program on the three domains, and suggest positive causal association between BF and human development in Brazil, however, some aspects of each domain seems not be adequately affected by this programme. Specifically, BF has positive impact on the education domain, in fact there are positive effects about attendance rate, grade progression and pass-grade, and drop-out rate. Also, BF suggests positive findings on age-grade discrepancy and grade repetition, although all the articles show low quality weights, which weakens the causality of the results. About missed school days an article by Neri (2008) shows positive outcome, whereas an article by Shaffland (2014) shows non-significant, and slightly negative outcome. Hence, there is some uncertainty on the overall evaluation of this outcome, which is probably positive due to the positive result by Neri (2008). Similarly, there are mixed findings about the effect of BF on educational outcomes. Finally, about the enrolment rate, the findings shows negative outcome.

About the health domain, the systematic review indicates positive outcome. Particularly, BF shows positive impacts on health outcomes, vaccination, under-five years old mortality rate, post-neonatal, and infant mortality rate. Probably, BF indicates positive effects on healthcare access too, although the variable prenatal care visits in De Brauw at al. (2012) has low sample size. Similarly, the dimension health outcomes highlights positive findings, although the variable having diarrhea in the last three months may lack of precision due to the low sample size. Further, the dimension anthropometric measures shows that all articles have low quality weights or very low quality weights, and there is good percentage of not-statistically significant outcomes in all the articles, therefore the final evaluation probably is mixed findings. Similarly, there is mixed outcome about deaths of babies in the childhood, up to one year old. Finally, about babies born dead, the evaluation shows an adverse impact of BF on this dimension. About income poverty, all the articles indicate positive impact, similarly, about consumption expenditures the findings are positive, hence BF shows positive result on the income dimension.

## 6. Conclusion

BF is a social security program whose aim is to support poor families' income and entitlements, and it has always been studied mainly for its effects on single dimensions. The goal of this article is to test the hypothesis that it has an overall inclusive role for the poor, by inspecting its impact on the human development. I want to fill this gap in the literature by employing the systematic review approach, that include only natural experiments, quasi-experiments, other experiments, and counterfactual analysis, as well as observational, longitudinal studies, on the single domains of the HDI and on the domains jointly considered too. Specifically, this empirical analysis is a case study which wants to inspect the effect of human-rights based CCTs on human development due to its participative and inclusive structure which protects fundamental capabilities. In fact, human-rights based CCTs should pursue inclusion in crucial freedoms, and their expansion towards valued level of life, in order to reach a robust wellbeing level and to break intergenerational multidimensional poverty cycle. Also, it is interesting to inspect whether the BF fulfils the goals that the Brazilian Constitution has mandated to this policy, that is to protect and promote income security, education, and health as fundamental human rights (de La Briere, and Rawlings 2006; Midgley, and Piachaud 2013).

The main results suggest that BF play an active role to foster each single domain, education, health, and income, also it spurs human development over time to some extent. Particularly, conditionalities are one important factor that contributes to this achievement, in fact their structure is based on children's human rights promotion and protection, coupled with the redress mechanism that are available if the local services are not in place or do not work well. In this regard, the government becomes the duty bearer that must allow the conditions to be fulfilled, otherwise it has to implement the necessary monitoring and the necessary services in order for them to be satisfied by the claimants. Further, the participative structure of the BF increases the likelihood of positive impact of this policy on beneficiaries' wellbeing. Specifically, the involvement of the civil society, and of the claimants allow to understand the issues, and the demands of the BF recipients. Both factors are important to create and strengthen local services, as well as interventions to fulfil the conditionalities and to increase the self-selection in the public support system. Similarly, the inclusion of a big set of families inside the BF, as it employs a multidimensional concept of poverty, allows to increase its preventive effect against wellbeing deterioration and to spur the robustness of human development. Moreover, the inclusive structure of the BF is another important factor, in fact, this policy is made up of transfers, and a wide net of complementary policies which are integrated and flexible to claimants' demands. This structure means the ease of self-selection of the beneficiaries and the possibility to attack poverty from multiple angles contemporaneously, which is important to tackle disadvantage and to generate wellbeing robustness outside poverty too. The fact that a wide network of interventions can be used by the same big set of families can be pivotal to increase the overall effect of BF. These features contribute to increasing the conversion factors from resources to crucial freedoms. Also, these characteristics expand the BF effects to adult population poverty, and to other domains. Similarly, this framework exploits the natural interlinkages among single dimensions, especially among health, education, and income, which contributes to reinforcing each other domain over time (Kanbur, and Squire, 1999). Hence, this integrated structure can deliver disproportionate effects on poverty and human development, which can impinge upon the robustness of wellbeing, and upon the reduction of poverty depth. Finally, the administrative structure is participative, and includes monitoring, and audit bodies, which contributes to minimizing patronage and frauds, and to reducing mismanagement, as well as to delivering a substantial right to redress for the claimants. However, some aspects of education, health, and consumption expenditures, such as school enrolment, babies born dead, transportation, and housing expenditures show negative or non-significant findings. Therefore, the inclusive role of

the BF in the three dimensions is still limited to some extent, and needs to be strengthened to ameliorate the power of this policy to foster human development and to reduce multidimensional poverty. Specifically, the focus on the BF should not be the reason to reduce social spending in crucial universal services, and infrastructures, such as health, and education services (Hall 2006; Hall 2008; Hall 2012). In fact, social spending is pivotal for the success of the BF in reducing poverty and sustaining human development. Similarly, some complementary programs, and local services are missing, such as business-oriented actions, specialized healthcare and education services, as well as the BF personnel, especially in poor, small or remote municipalities. Moreover, infrastructures, such as transportation means are not available or costly, and schools or health clinics are missing. Also, some programs are poorly structured and organized, and sometimes the professional level of the BF managers is not good enough (da Silva e Silva et al. 2008; Parsons 2014; Shaffland 2014). In addition, the quality of public services, such as teaching quality, healthcare services quality, and the lack of service reachability are important problems (Parsons 2014; Mourao, and de Jesus, 2011; de Oliveira et al., 2013). Furthermore, sometimes the integration among complementary programs and among local services is not available, or is weak (da Silva e Silva et al. 2008; da Silva e Silva, and de Almada, 2014). Similarly, the integration between complementary, and local services should be increased (Mourao, and de Jesus, 2011). Further, all these programs should increase their flexibility to the demands of the beneficiaries to improve the self-selection and effectiveness of BF. Moreover, there should be coordination between BF and other universal policies, as well as there should be integration between all non-contributory transfers with the BF transfers, to enhance the impact of BF on human development (Mourao, and de Jesus 2011; Neri 2008). Moreover, the level of BF transfers is too low (Mourao, and de Jesus 2011); similarly the amounts of transfers should be enhanced according to level of multidimensional poverty, to make the system more progressive, and inclusive. Finally, enhancing the possibility to access to tertiary education is important to strengthen the linkage between BF and the earning capability.

Finally, about generalizability level of these results for human rights-based CCTs in other countries, although CCTs share the same structure (Lindert et al. 2007), internal features in different nations can change the outcomes of the whole policy. In this sense, Brazil shares some characteristic with emerging countries, such as such as extreme poverty, inequalities, and decentralization, however, for example, the latter term may hide different internal organization, and different local community involvement, which are important for the impact of these CCTs, hence, probably these results are partially generalizable to similar nations.

Overall, BF contributes to advancing human development inclusion, and helps fulfill human rights included in the Brazilian constitution to some extent. Further, these outcomes contribute to challenging the view of social security as passive policy tool, and reinforcing the literature which considers these programs able to create opportunities for social change.

About the limitations of this article, the heterogeneity analysis is not considered, which can overlook the distributive effects of the BF across age, race, gender groups, and areas hence, future articles should address this issue. Moreover, no findings of qualitative articles are included in this systematic review. Further, articles in Brazilian language need to be included to increase the representativeness of the systematic reviews outcome. Finally, further empirical analysis is needed to inspect the role of BF on learning achievements, teaching quality, and healthcare quality (Lindert et al. 2007; Hall 2008).



## APPENDIX

**Table 1 – Structure of the articles and outcome estimates**

Article	Outcome of interest	methodology	Estimates	Sample size
Kamakura, and Mazzon 2015	Consumption behavioural change, for various categories of times.	After-only-quasi-experiment. Propensity score matching technique estimated using a logit model. Afterwards, an econometric cross-sectional regression model is undertaken to inspect the impact of the BF on various measures of consumption. This regression model contains latent factors which account for unobserved factors at household level. Simultaneously, an algorithm is used to simulate how the budget of BF households is distributed across the consumption items. Assumption: cash transfers are only used for consumption reasons. Construct and statistical conclusion validity fulfilled.	The incremental budget was spent mostly on food and beverages (47%), apparel sector (9.3%), cleaning products (5.8%), health (5.4%), car maintenance (5.2%), hygiene products (5%), education (3.4%) compared to the budget allocation of the comparison group.	Target population, Brazilian households. POF dataset in the year 2009, which is representative of the Brazilian population.  Sample size: 39,682 families, 9035 PBF claimants, 30,647 control group units.
Shei et al. 2014	Health care service usage, illnesses rates, vaccination, and overall physical and psychosocial health.	Quasi-experiment, set out in a slum community in the city of Salvador. Random sample of treatment and control families collected. Propensity score weighting applied to logit and OLS regression analysis to estimate the impact of PBF. Construct and statistical conclusion validity fulfilled.	Increased probability of health posts visits for growth monitoring (OR:2.5; p-value 0.005), and for check-ups (OR:1.7; p-value 0.077). Increased probability of vaccination (OR: 2.8; p-value 0.02). Probability of having diarrhea in the last three months decreased (OR: 0.54, p-value 0.064), although the results may lack precision due to low sample size and infrequency of diarrhea. Positive impact on psychosocial health ( $\beta$ : 2.6; p-value 0.007). No significant outcome on physical health.	Analysis set up in 2010. 567 households, 1,119 children, 776 in the treatment group, and 343 children in the control group. Age range of children: 7-17. Vaccination, age range: less than 7 years old.
Reynolds 2013	School attendance.	Natural Experiment about the effect of the expansion of the BF towards 16 and 17 years old individuals. It employs a triple difference strategy to assess the impact of a marginal year of coverage (the 16- year-old individuals) as well as assessing the effectiveness of being offered a conditional cash transfer after not receiving it for a year (the 17-year-old individuals who were eligible until age 15, not eligible at age 16, and once again eligible at age 17 when the program expanded). Fixed effects longitudinal regression analysis with triple differences. Robustness tests. Construct and statistical conclusion validity fulfilled.	About young individuals continuously treated: 6-%7% school attendance increase, statistically significant; p-value<0.05.  About the comparison between young people who have been treated with a gap (as the 17-year-old individuals in 2008 did not receive BF when they were 16 years of age) and those who did not benefit from BF expansion, that is the 17-year-old individuals in 2007. No statistical difference in attendance between these two groups is shown.	Years of analysis 2006, 2007, 2008. PNAD dataset is used, it is representative of the Brazilian families. Sample size: 150,000 households.  Treated young people group: 9,246. Control young group: 20,498. Overall sample of young people: 29,744 individuals.
Cruz, and	Education,	Natural experiment.	Education expenditures increased	POF quantitative survey

Ziegelhofer 2014	schooling material, health, and food expenditures.	Methodology used: Fuzzy, multidimensional Regression Discontinuity design with two contemporaneous forcing/eligibility variables. Robustness tests that control for local randomization. Construct validity, and statistical conclusion validity fulfilled.	disproportionally to the amounts of transfers received, that is by 1%; food expenditure increase by 10% (0.024)*. Specifically, education expenditures increased by 0.9% (0.003)*, school material increase by 0.7% (0.0018)*. Pharmaceutical expenditures decreased in relative terms by 2.8% (0.0069)*, health care expenditures decreased by 2.6% (0.0082)* the latter two outcome can suggest no disproportional effect with respect to the received transfers. *Standard errors in parenthesis.	dataset. It is representative of the Brazilian population in the period 2008-2009. Households used: 55,976 units, 9,149 treated families, 46,827 control group families.
Neri, 2008	School enrolment, missed more than 15% of classes, babies born dead, child death in the early childhood, up to one year old, and child mortality in the childhood up to six years old.	Quasi-experiment. Longitudinal logit regression analysis with difference-in-difference variable. Treated population are families whose incomes without public transfers are below 100 R\$, hence, Neri considers low-income BF beneficiaries in comparison with non-eligible families. Construct validity and statistical conclusion validity are fulfilled.	School enrolment, OR: 0.96, p-value, 0.05. Missed more than 15% of classes, OR: 0.83, p-value, 0.05. Babies born dead, OR 1.02, p-value, 0.005. Child death in the early childhood up to one year old, OR: 1.06, p-value, 0.05. Child death in the early childhood up to six years old is not statistically significant.	Years of analysis, 2004 and 2006. Age range of children, 7-15. Age interval of adults, 16-64. PNAD survey dataset used, it is representative of the Brazilian households and individuals.
De Brauw et al. 2015	Attendance, grade progression, grade repetition, drop-out.	Quasi-experimental design: the methodology exploits the longitudinal feature of the AIBF dataset to generate the treatment and control group. Afterwards, this methodology uses the weights estimated through the propensity score-weighting technique in the year 2005 and applies them to the single difference of treatment and control groups in the year 2009. It exploits information, available both in 2005 and 2009 on both previous and current schooling trajectories. Construct validity and statistical conclusion validity fulfilled.	ATT: attendance, 0.045, p-value, 0.05. On the other hand, the impact on grade repetition, grade progression, and drop-out rate are not statistically significant.	Target population, children between 6-17 years old. Year of analysis 2009, baseline period, 2005. AIBF is a survey dataset which is representative of the Brazilian population.  Sample size in 2005 and 2009: 5,414 families. Treatment group: 2,828 households; control group: 2,586 families.  Sample size about attendance in 2009: 6,507 children. Sample size all other variables in 2009: 4,638 children.
Simoes, and Sabates 2014	Pass-grade, drop-out, Maths, and Portuguese language test score achievements.	Observational study. Two-way fixed effects (school-and-time) panel regression model to estimate the marginal effect of BF intake over time. Main hypothesis to be tested: positive changes in fourth grade school outcomes are associated with the BF participation. In which the BF variable is the share of fourth grade BF recipients in the school. Construct validity and statistical conclusion validity fulfilled.	Panel data outcome (ATE): School outcome coefficient in 2007: Drop_out, -0.039, p-value, 0.01. Pass-grade, 0.041, p-value 0.01. Maths achievement, -0.04, p-value, 0.01. Portuguese, 0.028, p-value 0.01.  Marginal effect of BF intake on school outcome for 2005 and 2007: Drop-out, in 2005 0.0014, p-value 0.01; in 2007 -0.025, p-value 0.01. Pass-grade, in 2005 -0.015, p-value 0.05 in 2007 0.025, p-value 0.01. Portuguese test score, in 2005 -0.041, p-value 0.01; in 2007 -0.013, p-value 0.05. Math test scores, in 2005 0.002, non-significant, in 2007 -0.038, p-	Years of analysis, 2005 and 2007. Target units, student, household, and school variables aggregated at school level. Main dataset Prova Brasil, representative of urban public schools with more than 20 pupils in the fourth grade in Brazil, and National School Census, which are combined with the questionnaire applied during the national exam in 2005, about the percentage of BF recipients in that year. About the year 2007, recipients are identified based on the records of BF for school attendance. Overall sample size, 23,747 schools.

Rasella et al. 2013	Under-five years old mortality rate, diarrheal diseases, malnutrition, low respiratory infections, vaccine coverage, percentage of pregnant women with no prenatal visits at the moment of delivery, under-five children hospital admission rate.	Observational study. Conditional longitudinal negative binomial fixed-effects regression model, that inspects the association between the BF municipal coverage and different health-related outcomes over time. Specifically, the authors set up a mixed ecological design, which combines an ecological multiple-group design with a time-trend design. The analysis excludes the municipalities with low quality or no data on the covariates and dependent variables. Afterwards, a sensitivity analysis of the results is undertaken using all the available municipal data, which shows the same outcome. Construct validity and statistical construction validity are fulfilled.	value 0.01. Under-five mortality rate: RR between 0.94 to 0.83, according to the level of BF coverage (from intermediate to consolidated level, reference value low level of coverage), p-value<0.05. About the causes of mortality rate: Diarrheal diseases: RR between 0.83 to 0.47, p-value<0.05. Malnutrition: RR between 0.66 and 0.35, p-value<0.05. Lower respiratory infections: RR between 0.96 and 0.80, p-value<0.05. Vaccine coverage: (using a logistic regression) OR between 1.47 and 2.05, p-value<0.05. Proportion of pregnant women with no prenatal visits at the moment of delivery: RR between 0.85 and 0.53, p-value<0.05. Under-five children hospital admission rate: RR between 0.96 and 0.84, p-value<0.05.	Unit of analysis are municipalities. Years of analysis, from 2004 to 2009. Data are collected from the Ministry of Health, from the Ministry of Social Development databases and from the Brazilian Institute of Geography and Statistics. Overall sample size: 2,853 municipalities, that is 51% of the total number of Brazilian municipalities.
Bither-Terry 2014	poverty headcount, intensity of poverty, HI measure, and ordinal measure of poverty.	Counterfactual analysis, first-round effect estimation. Poverty line: PBF eligibility income and equivalent household size income to estimate the effect of BF. Construct validity fulfilled, no statistical conclusion validity.	Equivalent family income poverty outcomes: poverty headcount, reduced by 16.3%, income gap reduced by 6.3%, intensity of poverty decreased by 21.6%, ordinal measure reduced by 24.7%. Per capita poverty income outcomes: poverty headcount, reduced by 11.6%, income gap reduced by 6%, intensity of poverty decreased by 17%, ordinal measure reduced by 20.4%.	PNAD dataset, year of analysis, 2009. It is representative of the Brazilian population, no direct question about being PBF beneficiary. Size of the sample: 121,163 families.
Da Costa, Salvato, and Diniz 2008	poverty headcount, poverty intensity, poverty severity.	Counterfactual analysis, first-round effect. It uses counterfactual analysis based on family income, and counterfactual kernel density estimation. Also, different poverty lines are used to estimate the effect of BF on various poverty measures. Construct validity fulfilled, no statistical conclusion validity.	BF poverty line, year 2004: poverty headcount reduced by 6.4%, poverty intensity decreased by 14.3%, and the poverty severity reduced by 19.6%. BF poverty line, year 2005: poverty headcount reduced by 7.2%, poverty intensity decreased by 15.2%, and the poverty severity reduced by 21.6%. BF poverty line, year 2006: poverty headcount reduced by 11.4%, poverty intensity decreased by 23.2%, and the poverty severity reduced by 32.5%.	PNAD dataset, years 2004, 2005, 2006. PNAD dataset is representative of the Brazilian population, but no direct question about the amount of BF cash transfer.
Higgins 2011	Poverty headcount, poverty gap, squared poverty gap.	Counterfactual analysis, first-round effect. Different spatial price index-based poverty lines are used. Household income is used to estimate the effect of BF on poverty measures. Construct validity fulfilled, no statistical conclusion validity.	Poverty headcount reduced between 12%-18%, poverty gap index decreased between 19%-26%, squared poverty gap index dropped by 24%-31%.	PNAD dataset, year of analysis, 2009. It is representative of the Brazilian population, no direct question about being PBF beneficiary. Sample size is made up of 399,387 individuals.
Soares 2013	Poverty headcount.	Counterfactual analysis, first-round effect estimation. Construct validity fulfilled, no statistical conclusion validity.	Poverty reduction in 2004 by 1.4%, poverty reduction in 2009 by 2%.	PNAD dataset, year 2009. It is representative of the Brazilian population, no direct question about being PBF beneficiary. Size of the sample: 121,163 families.
Bastagli 2008	Attendance,	Counterfactual analysis, first-	BF recipients have 1.5%** higher	Year of analysis is 2004.

	poverty headcount, poverty gap, squared poverty gap.	round effect of BF on various measures of poverty. Construct validity fulfilled, no statistical conclusion validity. Cross-sectional logistic regression analysis about the impact of BF on attendance. Construct validity and the statistical conclusion validity are fulfilled.	probability of attending school compared to children not enrolled in this program. Similarly, poor children enrolled in BF have 4%** probability to attend school. ** significant at 1% Counterfactual analysis: about poverty reduction using the 100\$ poverty line: BF decreases poverty headcount by 1% , poverty gap by 1.3%, and squared poverty by 1.1%. About 50\$ poverty line, BF diminishes poverty headcount by 1.3%, the poverty gap by 1%, and the squared poverty gap by 0.8%.	PNAD survey dataset is used, which is representative of the Brazilian population, but no direct question about the amount of BF cash transfer. The sample size of counterfactual analysis is 382,175 individuals, and 108,840 families. Education attendance analysis: age range 7-15 years old. Sample size: 51,251 children. Poor children subgroup sample size: 19,478 children.
Shei 2013	Neo-natal mortality rate (number of deaths during the first 28 days of life). Post-neonatal mortality rate (number of deaths after 28 days of life but before one year of life per 1000 live births) Infant mortality rate (number of deaths of babies of one year old or younger per 1000 live births). BF coverage: number of household in a municipality using BF or registered for the BF.	Observational analysis. A pooled, time-series, cross-sectional design was used, in order to approximate a natural experiment by employing the heterogeneous expansion of BF across municipalities. Year and municipality fixed-effects are used, as well as time-varying independent variables. Sensitivity analysis applied using different model specification, no change in the results. Construct and statistical conclusion are fulfilled.	Post-neonatal mortality rate declined by 0.67 (deaths per 1000 live births), infant mortality rate declined by 0.67 (deaths per 1000 live births), both are significant at 1%  Interaction effect of high BF and Health Family Program coverage on infant mortality rate: -0.55 (deaths per 1000 live births), statistically significant at 1%. Interaction effect of high BF and Family Health Program coverage on post-neonatal mortality rate: -0.29 (deaths per 1000 live births), statistically significant at 10%.  The results about neonatal mortality rate are not statistically significant.	Main unit of analysis is municipality. Years of analysis: 1998-2008. Source of data: Brazilian Unified Health System dataset (DATASUS); Ministry of Social Development dataset; Brazilian Institute of Geography and Statistics dataset. Sample size: 5,506 municipalities.
Shaffland 2014	Education enrolment. Missed schooldays.	Quasi-experiment, propensity score method and difference-in-difference technique. Robustness checks are applied, and different matching methods are used. Construct and statistical conclusion validity are fulfilled.	Negative outcome on enrolment rate: the difference-in-difference analysis between 2004 and 2006 shows decrease between -0.57% and -0.92%, which is significant respectively at 10% and 5%. Missed schooldays is not statistically significant.	Unit of analysis, children, 6-17. Years of analysis, 2004-2006. Dataset used: PNAD, which is representative of the Brazilian population. Sample size in 2006: 55,903 untreated children and 29,951 treated children.
De Brauw et al. 2012	Prenatal care visits; weight-for-height, body-mass index for children under 5 years old; proportion of children born full term, 0-1 years old; timely vaccinations, 6 to 35 months; proportion of children with vaccination card, 6 to 23 months; proportion of child school attendance; share of progressed	Quasi-experimental design: the methodology exploits the longitudinal feature of the AIBF dataset to generate the treatment and control group. Afterwards, this methodology uses the weights estimated through the propensity score-weighting technique in the year 2005 and applies them to the single difference of treatment and control groups in the year 2009. It exploits information, available both in 2005 and 2009, on both previous and current schooling trajectories. This methodology uses different comparison groups and	ATT: proportion of children born full term, 0.107*; weight-for-height, -0.287*; body-mass index, 0.394**, 0.396**; timely vaccination about the DTP1, -0.107*, -0.116**; DTP2, 0.239***, 0.298***; Polio2, 0.132*, 0.141**, DTP3: 0.253***, 0.325***; Polio3, 0.128**, 0.17**; SAR: 0.22**; Proportion of children with a vaccination card, 0.902*; school attendance: 0.045*; grade progression: 0.069**; the share of students repeating the same grade level: -0.05*; prenatal care visits: 1.7*, 1.6** (low sample size).	Unit of analysis children, students, and adults. Dataset used: AIBF, which is a survey dataset representative of the Brazilian population, in the year 2009. Sample size, first treatment and comparison group: 1,121, 1,352 families. Sample size, second treatment and comparison group: 2,828, 2,586 families. Sample size, third treatment and comparison group: 4,523, 2,586 families.

	students, proportion of students repeating the same grade level; age about education variables, 6-17 years old.	treatment groups. Construct validity and statistical conclusion validity fulfilled.	* 5% significance, ** 10% significance.	
			ATT on birthweight about one year old babies shows statistically non-significant outcome. Similar outcome about height-for-age, weight-for-age, stunting, wasting, proportion of women having no prenatal care visits (low sample size), pregnant women receiving adequate prenatal care, and drop-out.	
Andrade et al. 2012	Timely vaccination, immunization card possession.	Quasi-experiment. Propensity Score Matching and ATT (single difference), year 2005. Robustness analysis undertaken. Construct and statistical conclusion validity fulfilled.	Vaccination on time (0.031). Immunization card possession: -0.02, (0.007). Required vaccine shots up to 6 months old on schedule: 0.013 (0.023). All the results are not significant at 10%. Standard errors in parenthesis.	Dataset representative of the Brazilian population, year of analysis 2005. Main units of analysis, children 0-6 years old. The dataset is made up of 14,022 households. Sample size of children: 8,709 children who have valid immunization card and 7,550 who show valid immunization schedule on it.
Guanais 2013	Post-neonatal infant mortality rate: deaths between 28 and 364 days.	Observational study: fixed-effect panel data models (year and municipal fixed effects), with time-variant regressors. Longitudinal ecological regression analysis using OLS. All regression models are adjusted for the clustering of observations at the municipal level in order to correct for the possibility of serially correlated results in municipalities over time. Moreover, the importance of the observations in the model have been adjusted by population size, multiplying all the variables by the square root of the specified weight. Sensitivity analysis is applied to the regression analysis. Construct and statistical conclusion validity fulfilled.	Overall effect of BF coverage: -4.855 CI [-6.337, -3.373], significant at 1%. The interaction effect of the BF and Family Health Program is -10.312 CI [-15.539, -5.086], significant at 1%. When BF coverage is 25% and there is no Family Health Program, the predicted post-neonatal infant mortality rate is 5.24, significant at $\alpha=5\%$ CI [4.95-5.53]. When BF coverage is 60% (no Family Health Program) the average post-neonatal infant mortality rate is 4.65, significant at $\alpha=5\%$ CI [4.36-4.94].	Publicly available administrative dataset, unit of analysis, municipalities that includes all the Brazilian municipalities 5,564 units, in the period 1998-2010. The dependent variable and the BF recipient share at municipality level are taken from the Ministry of Health and Ministry of Social Development databases. 4,583 units are used because of missing data and low-quality data. In order to control for the robustness analysis of the outcomes the low-quality data are then included. No change in the results. Hence, this dataset is representative of Brazilian municipalities.

<p>Nilsson, and Sjoberg 2013</p>	<p>School enrolment.</p>	<p>Regression discontinuity analysis. The sample is divided into two groups, the treatment group consisting of individuals with a monthly household income per capita between 126 and 140 BRL (eligible for the BF), and the control group with a monthly household income per capita between 141 and 155 BRL not eligible for BF. Assumption: BF has a strict eligibility rule based on family income. The treatment and control group appear to have similar characteristics about the variables included in the regression model. Robustness analysis: different bandwidths are tested, also other robustness checks are undertaken. Construct and statistical conclusion validity fulfilled.</p>	<p>Enrolment rate reduced by 0.025, the outcome is statistically significant at <math>\alpha=1\%</math>.</p>	<p>PNAD dataset, year of analysis, 2011. It is representative of the Brazilian population, no direct question about being PBF beneficiary. Target population young individuals between 7-18 years old. sample size: 4,677 young individuals and only, which includes individuals born between 1993 and 2004. The treatment group consists of 2,411 units, the control group, consists of 2,266 individuals.</p>
<p>de Oliveira 2005</p>	<p>Attendance rate, drop-out rate, progression rate; students share who only study and do not work; education, food, health expenses, other expenses (transportation, housing, hygiene and personal services, as well as clothing).</p>	<p>Quasi-experiment: ATT that applies propensity score matching techniques which use different matching algorithm, and single differences. Three income thresholds and two comparison groups are used to estimate the effect of BF on various indicators. Income thresholds: 200 R\$ or less, 100R\$ or less, 50R\$ or less. For each income line treatment and control groups are compared using the propensity score matching technique. Treatment group: families which are receiving BF transfers. First control group: families which receive other benefits. Second control group: families which never received any allowance, although they are registered in a public program. Construct and statistical conclusion validity fulfilled.</p>	<p>ATT outcomes: Attendance rate, first comparison group: 0.027**, 0.038***, 0.049*** (negative outcome). Drop-out rate, second comparison group: -0.010**, -0.016**, -0.021*** (positive outcome: lower drop-out rate for BF claimants). School progression, second comparison group: -0.023**, 0.039***, -0.034*, (negative outcome: lower progression for BF recipients). School and work, only study, first comparison group: 0.019***, 0.015*, 0.025**. School and work, only study, second comparison group: 0.014**, 0.2***, 0.036***. (positive outcome: further time allocated to study). Expenditures: Food, first comparison group: -142.82*** (negative outcome), second comparison group: 105.67**, 278.12***, 388.22*** (positive outcome). Transportation, first comparison group: -209.84*, second comparison group: -140.93**. Housing, second comparison group: -172.02***. Hygiene and personal services, first comparison group: 60.27**, second comparison group: -35.15**. Clothing, second comparison group: 22.64**. Education, second comparison group: -39.79*, 31.8**. Child education, first comparison group: 23.19***, 22.36**, 25.92*. Health, first comparison group: -72.61***, second comparison group: -84.94***.</p>	<p>Target population: children between 7-14 years old and families. Year of analysis, 2005. AIBF dataset first-round, cross-sectional dataset, which is representative of the Brazilian families in 2005. Sample size: 15,240 households. Sample size treatment group: 4,435 families. Sample size first control group: 3,496 families. Sample size second control group: 4,941 families.</p>

			Child healthcare, first comparison group: 28.45***, 27.98*. Adult health, first comparison group: -101.06***, -57.76**, second comparison group: -116.79***, -80.61**, -81.72*.  *** 1% significance, ** 5% significance, * 10% significance.	
Amaral, Goncalves, and Weiss 2014	Enrolment, age-grade discrepancy.	Regression analysis, logit model by income level, which employs a treatment and control group dummy variable, in the year 2010. Municipal clusters generated robust standard errors. Treatment group: if received BF transfers in 2010, control group: if did receive any BF transfers in 2010. A logit model which compares beneficiary and non-beneficiary families for each income line (up to 70 Reais, up to 140 Reais, up to 280 Reais) is undertaken. Construct and statistical conclusion validity fulfilled.	School enrolment, positive effect: logit coefficients: 2.12, 1.96, 1.88. Age-grade discrepancy, positive effect: 0.97, 0.98, 1.013. The latter coefficient seems to report a negative outcome in the highest income threshold (higher likelihood to have age-grade discrepancy). All coefficients are statistically significant at $\alpha=1\%$ .	Brazil Demographic Census, year 2010, representative of Brazilian population. Target population, children 7-14 years old. Overall sample size: 1,675,797 children. Sample size about income threshold 70 Reais: 447,046 children. Sample size about income threshold 140 Reais: 911,272 children. Sample size about income threshold 280 Reais: 1,675,797 children.
de Oliveira et al. 2013	Prevalence of dental caries, rate ratios about severity of dental services.	Quasi-experimental analysis. Poisson multivariate regression models with robust variance analysis is used, in which the variable selection method is backward stepwise. The Poisson regression models include a dummy variable that compares BF beneficiary children and non-beneficiary children about the outcomes. Treatment group: children participating in the BF, information taken from the schools. Construct and statistical conclusion validity fulfilled.	Prevalence of dental caries: 2 (twice higher for PBF recipients compared to the comparison group), statistically significant at 5% CI[1.47-2.69]. Dental caries severity rate ratios for the treatment group: 1.53, statistically significant at 5% CI[1.18-2.00]. Higher share of treated children who never visited a dentist (prevalence ratios): 6.18 (six times higher), statistically significant at 5% CI[3.07-12.45].	Cross-sectional database, in the year of 2010. Targeted population: students between 8 to 12 years old in the municipality of Pelotas, divided in PBF claimants and non-claimants. The sample was obtained using a two-stage cluster sampling technique. The primary units(schools) were randomly selected manually, weighted according to the number of pupils enrolled in each school in 2009 and the size of the network (public and private). Twenty schools were selected, nine municipal schools, six state schools and five private schools, reflecting the proportion of types of schools in the municipality. The pupils, the secondary sampling units, were selected from each school year, between 2nd and 6th grade.  Sample size: 1,107 schoolchildren. This dataset is representative of the municipality of Pelotas.
Paes-Sousa, and Santos 2009	Birthweight, weight-for-age, height-for-age, weight-for-height.	Quasi-experimental analysis. Cross-sectional logistic regression model with few regressors, and it contains a dummy variable that compares the BF children beneficiary set with children non-beneficiary set about the outcomes. Construct validity fulfilled and statistical conclusion validity broadly fulfilled.	BF children share of normal birthweight is not statistically significant. Logistic regression outcomes: BF children have 26% higher probability to have appropriate height-for-age: statistically significant at 1%, CI[1.156-1.377]. About weight-for-age, BF children have 25.7% higher probability to have appropriate weight-for-age:	Four children surveys were included: two in 2005, in the semi-arid region and agrarian reform settlements, two in 2006, about Quilombola communities and in the Amazonas state. Once the data were combined and thoroughly checked, the final integrated database comprised 22,375

			statistically significant at 1%, CI[1.097-1.440]. Weight-for-height logistic regression outcome is statistically non-significant.	children. Primary sampling unit of each dataset, municipalities. Target population, children under five years old age who were vaccinated during the 2005 and 2006 National Immunization Days, these children come from selected areas of Brazil. Treatment group size: 9,152 children; control group size: 13,223 children.
Paes-Sousa, Santos, and Miazaki, 2011	Height-for-age, weight-for-age, weight-for-height, vaccination card possession	Quasi-experimental analysis. Cross-sectional logistic regression model with few regressors, and it contains a dummy variable that compares the BF children beneficiary set with children non-beneficiary set about the outcomes. Construct validity fulfilled and statistical conclusion validity broadly fulfilled.	Normal birthweight outcome, and child health card possession are not significant. Logistic regression outcome: BF children have 26% higher probability to have appropriate height-for-age: statistically significant at 1%, CI[1.16-1.37]. About weight-for-age, BF children have 26% higher probability to have appropriate weight-for-age: statistically significant at 1%, CI[1.10-1.44]. Weight-for-height outcome is not significant BF Children with age between 12-35 months have 19% higher probability to have appropriate height-for age, statistically significant at 1% CI[1.04-1.37]. BF Children with age between 36-59 months have 41% higher probability to have appropriate height-for age, statistically significant at 1% CI[1.20-1.66]. Height-for-age outcome about 0-11 months children is not significant.	Four children surveys were included: two in 2005, in the semi-arid region and agrarian reform settlements, two in 2006, about Quilombola communities and in the Amazonas state. Once the data had been combined and thoroughly checked, the final integrated database comprised 22,375 children. Primary sampling unit of each dataset, municipalities. Target population, children under five years old age who were vaccinated during the 2005 and 2006 National Immunization Days, these children come from selected areas of Brazil. Treatment group size: 9,152 children; control group size: 13,223 children.
Mourao, Ferreira, and de Jesus, 2012	School attendance, literacy courses attendance, youth and adults education; professional and computer courses attendance; immunizations, number of daily meals, healthcare visits, gynecological visits.	Quasi-experimental analysis single differences among treatment and control group. Specifically inferential tests, that is t-test, and Mann-Whitney-Wilcoxon test are estimated to compare treatment and control groups about the outcomes. Inclusion criteria in the research project: BF participants for at least one year. Control group participants has a family income per person of up to 120 Reais, (the highest income level allowed for participation in the BF at the time of data collection). The following individuals were excluded from the study: those with temporary or suspended participation in the BF and those who failed to answer at least one-third of the survey questions. Construct and statistical	Drop-out rate for children between 4 and 5 years old: the treatment group has higher number of school leavers, 0.43 against 0.29, statistical significance at 3%. About daily meals, 2.7 average meals for beneficiaries against 3 meals per day for non-recipients, significant at 2%. About vaccinations, 90% of recipients completed vaccinations against 80.7% for non-recipients, statistically significant at 1%. About prenatal visits 46.7% share of beneficiaries against 84.5% share of non-recipient visits, statistically significant at 3%. About professional courses and computer course respectively, 8.9% and 26.3% of beneficiaries attended these courses against 4.4% and 14.1% of non-recipient attendance, statistically significant at 4% and 1%. Finally, the outcome about gynecological	Target population: low-income slums dwellers in the metropolitan region of Rio de Janeiro, specifically in the cities of Niterói, Magé, São Gonçalo and Rio de Janeiro. Sample size: 530 individuals, year of analysis: 2010*. The participants of the study were divided into two groups: 281 BF recipients; and 249 non-recipients with family incomes that qualified them for the BF.



conclusion validity fulfilled. visits, medical visits to monitor children's growth in health centres, literacy courses participation, youth and adult education courses, and school attendance for children between 6 and 17 years old are not significant.

Silveira, van Horn, and Campolina 2013	Allocation of time attendance between school and work for children.	Quasi-experiment. Propensity score weighting estimated using a logit model, in order to match treatment and control group. ATT (single difference), and population trimming according to the propensity score weights level. Afterwards, multinomial logit regression analysis is applied, and a bivariate probit analysis is undertaken using the propensity score weights. Construct validity fulfilled, and statistical conclusion validity not fulfilled.	PBF increases the odds of studying by 10%. Specifically, studying only increases by 5%, studying and working increases by 5% roughly. Finally, working only drops by 1%. Main drawback, no p-values of the estimates provided.	Target population, children between 10-18 years old. Brazilian census database, year 2010. This dataset is representative of the whole Brazilian population.
Bohn et al. 2014	Up-to-date immunization card; food security in terms of food amounts.	Quasi-experiment: before-and-after-analysis, no control group, no control variables. Construct validity fulfilled, statistical conclusion validity partially fulfilled.	Before entering the BF 98.5% of the beneficiaries in the survey had an updated immunization card, after receiving the BF the share increased to 98.7%, no statistical significance test estimated. Before entering the BF, 6.8% of beneficiaries was food secure, after being enrolled in the BF the percentage of food secure recipients increased to 12%, this outcome is statistically significant.	Main unit of analysis: individuals. Survey dataset, individual level data, year 2008. There are five samples of 800 households, which are representative of the five regions of Brazil. This sampling strategy generates a representative sample of the Brazilian population: The total sample for Brazil is accurate to 1.8%.  Sample size: 4,000 recipients.

\* I am grateful to Professor Luciana Mourao for sharing information about her article.

## Table 2 – Selection process

First step: identification and screening	I identified and screening 2,812 articles	I retained only articles that broadly respects the inclusion criteria, by inspecting the title, the abstract, and the main content of the papers (introduction and conclusion).
Second step: second round of screening	I retained 220 articles	I carefully reviewed the inclusion criteria.
Third step: third round of screening	I retained 32 articles	I evaluated the level of internal validity.
Fourth step: last round of screening	I retained 27 articles	In the last step I reviewed very carefully the level of internal validity, and the scope of the analysis. Moreover, statistical conclusion validity as well as construction validity were analyzed.
		About the five excluded articles: N=2: the scope of the articles is outside the focus of this systematic review.  N=2 the research design does not allow to infer causal outcome from the empirical analysis.  N=1 not sufficient information to suggest that the result of the counterfactual analysis indicates some causality.

### **Table 3 – Detailed search strategy**

Databases used: IBSS, Econlit, SocIndex, IDEAS, Google Scholar, Internet, and the LSE database.

Search strategy: searching for quantitative and mixed methods peer reviewed articles, books, reports, as well as gray literature, including only the quantitative outcomes of mixed method papers, about the impact of BF on the domains of education, health, income and consumption expenditures. I searched for natural, quasi-natural experiments, quasi-experiments, counterfactual analysis as well as longitudinal observational models. Specifically, I included articles which use regression discontinuity design, propensity score matching or propensity score weighting techniques with or without regression analysis, fixed-effect models, difference-in-difference method with or without propensity score techniques, before-after analysis, and simulation analysis. Further, I retained articles with English or Portuguese abstract, and English text to inspect the causal effect of BF. Also, I excluded macroeconomic-level quantitative analysis related to the BF. Finally, I excluded articles which do not fulfil the construct validity.

Advanced search strategy, using the following combination of keywords: (PBF OR “Bolsa Familia Program” OR “CCTs” OR “Conditional Cash Transfers”) AND ( “HDI” OR “human development” OR “effects on human development” OR “human development index” OR “effects on human development index” OR wellbeing OR “effects on wellbeing” OR “multidimensional poverty” OR “effects on multidimensional poverty” OR health OR “effects on health” OR education OR “effects on education” OR “income poverty” OR “effects on income poverty” OR consumption OR “effects on consumption”).

**Table 4 – Methodology of analysis and quality assessment weight**

<b>Articles</b>	<b>Methodology of analysis</b>	<b>Quality assessment weight according to internal validity</b>
Kamakura, and Mazzon 2015	Quasi-experiment, using the propensity score matching technique and regression model	Low weight
Shei et al. 2014	Quasi-experiment, using the propensity score weighting technique and regression model	Low weight
Reynolds 2013	Natural experiment, using triple difference and fixed-effect model	Good weight
Cruz, and Ziegelhofer 2014	Natural experiment, fuzzy multidimensional regression discontinuity design	High weight
Neri, 2008	Quasi-experiment, which employs difference-in-difference regression model	Good weight
De Brauw et al. 2015	Quasi-experiment, using the propensity score weighting technique and treatment-control single differences	Low weight
Simoes, and Sabates 2014	Observational analysis, using two-way fixed-effect panel data regression model	Good weight
Rasella et al. 2013	Observational analysis, using fixed-effect longitudinal regression model	Good weight
Bither-Terry 2014	First-round counterfactual analysis	High weight
Da Costa, Salvato, and Diniz 2008	First-round counterfactual analysis	High weight
Higgins 2011	First-round counterfactual analysis	High weight
Soares 2013	First-round counterfactual analysis	High weight
Bastagli 2008	First-round counterfactual analysis. Second empirical analysis: quasi-experiment, which uses cross-sectional logistic regression model with treatment-control analysis	Counterfactual analysis, high weight. Control-treatment analysis, low weight
Shei 2013	Observational analysis, using fixed-effect longitudinal regression model	Good weight
Shaffland 2014	Quasi-experiment, using propensity score matching methodology, and difference-in-difference technique	Good weight
De Brauw et al. 2012	Quasi-experiment, using the propensity score weighting technique and treatment-control single differences	Low weight
Andrade et al. 2012	Quasi-experiment, using propensity score matching technique and treatment-control single differences	Low weight
Guanais 2013	Observational analysis, using fixed-effect panel data model	Good weight
Nilsson, and Sjoberg 2013	Natural experiment, using regression discontinuity analysis	Good weight
de Oliveira 2005	Quasi-experiment, using propensity score matching technique and treatment-control single differences	Low weight
Amaral, Goncalves, and Weiss 2014	Quasi-experiment, employing cross-sectional logistic regression model, and using treatment-control analysis	Low weight
de Oliveira et al. 2013	Quasi-experiment, employing cross-sectional Poisson regression model, and using treatment-control analysis	Very low weight
Paes-Sousa, and Santos 2009	Quasi-experiment, employing cross-sectional logistic regression model, and using treatment-control analysis	Very low weight
Paes-Sousa, Santos, and Miazaki 2011	Quasi-experiment, employing cross-sectional logistic regression model, and using treatment-control analysis	Very low weight

Mourao, Ferreira, and de Jesus 2012	Quasi-experiment, treatment-control analysis, using single differences	Very low weight
Silveira, van Horn, and Campolina 2013	Quasi-experiment, using propensity score weighting and treatment-control single differences	Low weight
Bohn et al. 2014	Quasi-experiment, employing before-and-after analysis	Very low weight

**Table 5 –Main features of the articles**

<b>Articles</b>	<b>Domain</b>	<b>Category of article</b>	<b>External, construct, and statistical conclusion validity</b>
Kamakura, and Mazzon 2015	Consumption expenditures	Peer-reviewed article	High external validity. Construct, and statistical conclusion validity fulfilled
Shei et al. 2014	Health	Peer-reviewed article	Low external validity. Construct, and statistical conclusion validity fulfilled
Reynolds 2013	Education	Peer-reviewed article	High external validity. Construct, and statistical conclusion validity fulfilled
Cruz, and Ziegelhofer 2014	Consumption expenditures	Working paper	High external validity. Construct, and statistical conclusion validity fulfilled
Neri 2008	Education, health	Book chapter	Good external validity. Construct, and statistical conclusion validity fulfilled
De Brauw et al. 2015	Education	Peer-reviewed article	High external validity. Construct, and statistical conclusion validity fulfilled
Simoès, and Sabates 2014	Education	Peer-reviewed article	Not low external validity. Construct, and statistical conclusion validity fulfilled
Rasella et al. 2013	Health	Peer-reviewed article	High external validity. Construct, and statistical conclusion validity fulfilled
Bither-Terry 2014	Income poverty	Peer-reviewed article	High external validity. Construct, validity fulfilled, no statistical conclusion validity
Da Costa, Salvato, and Diniz 2008	Income poverty	Unpublished article	High external validity. Construct, validity, and statistical conclusion validity fulfilled
Higgins 2011	Income poverty	Peer-reviewed article	High external validity. Construct, validity fulfilled, no statistical conclusion validity
Soares 2013	Income poverty	Book chapter	High external validity. Construct, validity fulfilled, no statistical conclusion validity
Bastagli 2008	Income poverty, education	Ph.D. thesis	Counterfactual analysis: high external validity. Construct, validity fulfilled, no statistical conclusion validity. Regression analysis: high external validity. Construct validity, and statistical conclusion validity fulfilled
Shei 2013	Health	Peer-reviewed article	High external validity. Construct, validity, and statistical conclusion validity fulfilled
Shaffland 2014	Education	Ph.D. thesis	High external validity. Construct, validity, and statistical conclusion validity fulfilled
De Brauw et al. 2012	Health, education	Published report	High external validity. Construct, validity, and statistical conclusion validity fulfilled
Andrade et al. 2012	Health	Peer-reviewed article	High external validity. Construct, validity, and statistical conclusion validity fulfilled
Guanais, 2013	Health	Peer-reviewed article	High external validity. Construct, validity, and statistical conclusion validity fulfilled
Nilsson, and Sjoberg 2013	Education	Master thesis	High external validity. Construct, validity, and statistical conclusion validity fulfilled
de Oliveira 2005	Consumption expenditures,	Unpublished report	High external validity. Construct, validity, and statistical conclusion

Amaral, Goncalves, and Weiss 2014	education Education		Peer-reviewed article	validity fulfilled High external validity, and statistical validity fulfilled	Construct, conclusion
de Oliveira et al. 2013	Health		Peer-reviewed article	Low external validity, and statistical validity fulfilled	Construct, conclusion
Paes-Sousa, and Santos 2009	Health		Working paper	Good external validity, statistical validity fulfilled	Construct, conclusion
Paes-Sousa, Santos, and Miazaki 2011	Health		Peer-reviewed article	Good external validity, statistical validity fulfilled	Construct, conclusion
Mourao, Ferreira, and Jesus 2012	Education, health, security	food	Peer-reviewed article	Low external validity, and statistical validity fulfilled	Construct, conclusion
Silveira, van Horn, and Campolina 2013	Education		Working paper	High external validity, no statistical validity	Construct, conclusion
Bohn et al. 2014	Health, security	food	Peer-reviewed article	High external validity, statistical validity fulfilled, statistical validity partially fulfilled	Construct, conclusion

## Bibliography

Abreu, Lidiane. 2011. "Direitos Sociais no Brasil: Programa Bolsa Familia e Transferencia de Renda." Master dissertation, Universidade Presbiteriana Mackenzie.

Amaral, Ernesto, Guilherme Goncalves, and Christopher Weiss. 2014. "The impact of Brazil's Bolsa Familia Program on School Attendance, Age-Grade Discrepancy, and Child Labour." *Journal of Social Science for Policy Implications*, Vol. 2, No. 1, pp. 101-125.

Anand, Sudhir, and Amartya Sen. 1997. "Concepts of Human Development and Poverty: A Multidimensional Perspective." *Human Development Papers*.

Andrade, Monica, Flavia Chein, Laeticia de Souza, and Jaume Puig-Junoy. 2012. "Income transfer policies and the impacts on the immunization of children: the Bolsa Familia Program." *Cad. Saude Publica*, 28(7): 1347-1358.

Barrientos, Armando, and David Hulme. 2010. *Social Protection for the Poor and Poorest: Concepts, Policies and Politics*, London: Palgrave.

Bastagli, Francesca. 2008. "The design, implementation and impact of conditional cash transfers targeted on the poor: an evaluation of Brazil's Bolsa Familia. Ph.D. diss., London School of Economics and Political Science, London.

Bither-Therry, Russel. 2014. "Reducing Poverty Intensity: What Alternative Poverty Measures Reveal about the Impact of Brazil's Bolsa Familia." *Latin America Politics and Society*, Vol. 56, Issue 4, pages 143-158.

Bohn, Simone, Luciana Veiga, Salette Da Dalt, Andre' Brandao, and Victor Gouvea. 2014. "Can conditional cash transfer programs generate equality of opportunity in highly unequal societies? Evidence from Brazil." *Revista de Sociologia e Politica*, vol. 22, n. 51, p. 111-133.

Bronson, Denise, and Tamara Davis. 2011. *Finding and evaluating evidence systematic reviews and evidence-based practice*. New York, Oxford: Oxford University Press.

Bryman, Alan. 2008. *Social Research Methods*. Oxford University Press.

Cecchini, Simone, Fernando Filgueira, Cecilia Rossel, and Isabel Brain. 2015. "Towards universal social protection." Latin American pathways and policy tools. Economic Commission for Latin America and the Caribbean (ECLAC).

CGAP. *Brazil Country Report*. 2011.

Chirivi, Edwin, Oscar Quiroz, and Dario Rodriguez. 2011. "La vivienda social en America Latina: Una revision de politicas para atender las necesidades habitacionales de la region." *Estudios Economicos*, N° 30, Bogota, Camara Colombiana de la Construccion (CAMACOL).

Cruz, Marcio. And Zacharias Ziegelhofer. 2014. "Beyond the Income Effect. Impact of Conditional Cash Transfer Programs on Private Investments in Human Capital." *Policy Research Working Paper*, No 6867, World Bank.

da Costa, Alan, Marcio Salvato, and Sibelle Diniz.v2008. "Counterfactual Analysis of Brazil's



Bolsa Familia Programme for the Period 2004-2006.”

da Silva e Silva, Maria, Antonia de Lima, Maria Ferreira, Maria de Fatima e Silva, and Valeria de Almada Lima. 2008. *O Bolsa Familia no Enfrentamento a Pobreza no Maranhao e Piaui*. Sao Paulo: Cortez Editoria.

da Silva e Silva, Maria, and Valeria de Almada Lima. 2014. *Avaliando o Bolsa Familia. Unificacao, Focalizacao e Impactos*. Cortez Editoria.

De Braw, Alan, Daniel Gilligan, John Hoddinot, and Shalini Roy. 2012. “The Impact of Bolsa Familia on Child, Maternal and Household Welfare.” International Food Policy Research Institute.

De Brauw, Alan, Daniel Gilligan, John Hoddinott, and Shalini Roy. 2015. “The Impact of Bolsa Familia on Schooling.” *World Development*, Vol. 70, pp. 303-316.

de La Briere, Benedicte, and Laura Rawlings. 2006. “A role for increased social inclusion.” In *Social protection and inclusion: experiences and policy issues*, edited by the ILO.

de Oliveira, Ana Maria. 2005. “An Evaluation of the Bolsa Familia Program in Brazil: Expenditures, Education and Labour Outcomes.” Unpublished Report.

de Oliveira, Luisa, Marcos Correa, Gustavo Nascimento, Marilia Goettens, Sandra Tarquinio, Dione Torriani, and Flavio Demarco. 2013. “Inequalities in oral health: are schoolchildren receiving the *Bolsa Famliia* more vulnerable?” *Saude Publica*, 47(6): 1039-47.

Dreze’, Jean, and Amartya Sen. 2013. *An Uncertain Glory. India and its Contradictions*. Penguin Books.

Drodge, Stephen, and Eneida Shiroma. 2004. “Social inclusion in two worlds: the conceptualization of the social role of lifelong learning in the education policy of Brazil and the UK since the mid 1990s.” *Compare*, 34(2), 177-196.

Farrington, David 2003. “Methodological Quality Standards for Evaluation Research.” *The ANNALS of the American Academy of Political and Social Science*, 587: 49.

Ferrario, Marcela. 2014. “The impacts on family consumption of the Bolsa Família subsidy programme.” *CEPAL Review*, 112.

Ferro, Andrea, and Alexandre Nicollela. 2007. “The Impact of Conditional Cash Transfer Programs on Household Work Decisions in Brazil.” *Research in Labor Economics*, Volume 31.

Gregol de Farias, Tamara. 2014. “Estudio de caso sobre la insercion productiva y laboral de los beneficiarios de los programas de transferencias condicionadas en Brasil.” Santiago de Chile, Comision Economica para America Latina y el Caribe (CEPAL)/EUROsocial, inedito.

Gabel, Shirley. (2016). *A Rights-Based Approach to Social Policy Analysis*. Springer.

Guanais, Federico. 2013. “The Combined Effects of the Expansion of Primary Health Care and Conditional Cash Transfers on Infant Mortality in Brazil, 1998-2010.” *American Journal of Public Health*, Vol 103, No. 11.

Hall, Anthony. 2006. “From Fome Zero to Bolsa Família: Social policies and poverty alleviation

under Lula.” *Journal of Latin American Studies*, 38, pp. 689–709.

Hall, Anthony. 2008. “Brazil’s Bolsa Família: A double-edged sword?” *Development and Change*, 39 (5), pp.799-822.

Hall, Anthony. 2012. “The last shall be first: political dimensions of conditional cash transfers in Brazil.” *Journal of Policy Practice*, 11 (1-2). pp. 25-41.

Hellmann, Aline. 2015. “How does Bolsa Familia work? Best practices in the implementation of conditional cash transfer programs in Latin America and the Caribbean.” *IDB Technical Note*, n 856.

Higgins, Sean. 2011. “The Impact of Bolsa Familia on Poverty: Does Brazil's Conditional Cash Transfer program have a rural bias?” *Journal of Politics and Society*.

ILO. *Bolsa Familia in Brazil: Context, Concept and Impacts*. 2006.

Kamakura, Wagner, and Jose’ Mazzon. 2014. “Measuring the Impact of a Conditional Cash Transfer Program on Consumption Behavior with Propensity Scoring.” *Costumers Needs, and Solutions*, 2:302–316.

Kanbur, Ravi, and Lyn Squire. 1999. “The evolution of the thinking about poverty: exploring the interactions.” Washington DC: World Bank.

Lindert, Kathy, Anja Linder, Jason Hobbs, and Benedicte de la Briere. 2007. “The Nuts and Bolts of Brazil’s Bolsa Família Program: Implementing Conditional Cash Transfers in a Decentralized Context.” The World Bank, *Social Protection Discussion Paper*, N. 0709.

Madaleno, Margarida, and Sevrin Waights. 2014. “Guide to scoring methods using the Maryland Scientific Methods Scale.” What Works Centre for Local Economic Growth.

Marinho, Emerson, and Sergio Mendes. 2012. “The Impact of Government Income Transfers on the Brazilian Job Market.” *Est. Econ., São Paulo*, vol. 43, n.1, p. 29-50.

Midgley, James, and David Piachaud. 2013. *Social Protection, Economic Growth and Social Change: Goals Issues and Trajectories in China, India, Brazil and South Africa*, Edward Elgar.

Ministerio de Desarrollo Social del Brasil. *Programa Nacional de Promocao do Acesso ao Mundo do Trabalho – Acessuas Trabalho*. 2013.

Ministerio del Trabajo y Empleo del Brasil. *MTE e MDS firmam parceria para atender beneficiarios do Brasil Sem Miseria nos postos do Sine*. 2013.

Mourao, Luciana, and Macedo de Jesus. 2011. “Bolsa Família (Family Grant) Programme: an analysis of Brazilian income transfer programme.” *Field Actions Science Reports*, Special Issue 3.

Mourao, Luciana, Maria Cristina Ferreira, and Macedo de Jesus. 2012. “Evaluation of the Brazilian Family Grant Program: A Quasi-Experimental Study in the State of Rio de Janeiro.” *Revista Psicologia: Reflexão e Crítica, Porto Alegre*, v. 25, n. 4, p. 719-729.

Nazareno, Luisa. 2016. “O Programa Bolsa Familia e o Mercado de Trabalho Informal: uma Analise de Impacto da Acao Brasil Carinhoso.” *Economia Aplicada*, v. 20, n. 4, 2016, pp. 457-470.

- Neri, Marcelo. 2008. "Income Policies, Income Distribution, and the Distribution of Opportunities in Brazil." In *Brazil as an Economic Superpower? Understanding Brazil's Changing Role in the Global Economy*, edited by Lael Brainard, and Leonardo Martinez-Diaz. Washington, D.C.: Brookings Institution Press, forthcoming.
- Nilsson, Hanna, and Karin Sjoberg. 2013. "An Evaluation of the Impacts of Bolsa Familia on Schooling." Master thesis, University of Lund.
- Paes-Sousa, Romulo, and Leonor Santos. 2009. "Measuring the impact of Bolsa Familia program based on data from health and nutrition days (Brazil)." *FAO Working Papers*.
- Paes-Sousa, Romulo, Leonor Santos, and Edina Miazaki. 2011. "Effects of conditional cash transfer programme on child nutrition in Brazil." *Bulletin of World Health Organization*, 89:496-503.
- Parsons, Kenia. 2014. "Reaching out to the persistently poor in rural areas: An analysis of Brazil's Bolsa Família conditional cash transfer programme." Ph.D. diss., London School of Economics and Political Science.
- Quinhoes, Trajano. And Virginia Fava. 2010. "Intersetorialidade e transversalidade: a estrategia dos programas complementares do Bolsa Familia." *Revista do Servico Publico Brasilia*, 61 (1): 67-96.
- Rasella, Davide, Rosana Aquino, Carlos Santos, Romulo Paes-Sousa, and Mauricio Barreto. 2013. "Effect of a conditional cash transfer programme on childhood mortality: a nationwide analysis of Brazilian municipalities." *The Lancet*, Vol 382.
- Reynolds, Sarah. (2015). "Brazil's Bolsa Familia: Does It Work for Adolescents and Do They Work Less for It?" *Economics of Education Review*.
- Robles, Claudia, and Vlado Mirosevic. 2013. "Sistemas de proteccion social en America Latina y el Caribe: Brasil." *Documentos de Proyecto*, No 532 (LC/W.532), Santiago de Chile, Comision Economica para America Latina y el Caribe (CEPAL).
- Salomon, Margot. 2007. *Global Responsibility for Human Rights*. Oxford University Press.
- Santos, Claudia, and Rosana Magalhaes. 2012. "Pobreza e Política Social: a implementação de programas complementares do Programa Bolsa Família." *Ciência & Saúde Coletiva*, 17(5):1215-1224.
- Schaffland, Elke. 2014. "Conditional Cash Transfer in Brazil: Treatment Evaluation of the "Bolsa Familia" Program on Education." In *Essays on Development and Behavior Economics: An Impact Evaluation of the "Bolsa Família" - Conditional Cash Transfer on Education and the Effect of Leadership Identity on Group Cooperation and Elite Capture*, Ph.D diss., University of Gottingen.
- Sherman, Lawrence, David Farrington, Brandon Welsh, and Layton MacKenzie. 2002. *Evidence based crime prevention*. London: Routledge.
- Sen, Amartya. 1999. *Development as Freedom*, Oxford: Oxford University Press.
- Sen, Amartya. 2000. "A Decade of Human Development." *Journal of Human Development*, Vol. 1, No 1.

- Sen, Amartya. 2003. "Development as Capability Expansion." In *Readings in Human Development*, edited by Sakiko Fukuda-Parr and Shiva Kumar. Oxford University Press.
- Sen, Amartya. 2005. "Human Rights and Capabilities." *Journal of Human Development*, Vol. 6, No 2.
- Sen, Amartya. 2006. "Children and Human Rights." *Institute for Human Development Foundation Day Lecture*.
- Sen, Amartya. 2015. *The Country of First Boys*. Oxford University Press.
- Shei, Amie (2013). "Brazil's conditional cash transfer program associated with declines in infant mortality rates." *Health Affairs*, 32(7), 1274-81.
- Shei, Amie, Federico Costa, Reis Mitermayer, and Albert Ko. 2014. "The impact of Brazil's Bolsa Familia conditional cash transfer program on children's health care utilization and health outcomes." *BMC International Health and Human Rights*, 14:10.
- Shulte, Helen. (2007). "Chile Solidario: Toward an Integrated Approach to the Delivery of Social Protection." Learning Programme on Evidence Based Policy Analysis to Deliver Results for Children.
- Silveira, Fernando, Ross van Horn, and Bernanrdo Campolina. 2013. "Bolsa Familia's effects on the combination of work and school for children and adolescents aged 10-18." *International Policy Center for Inclusive Growth Working Paper*, n. 121
- Simoës, Armando, and Ricardo Sabates. 2014. "The contribution of Bolsa Familia the educational achievement of economically disadvantaged children in Brazil." *International journal of Educational Development*, 39, 151-166.
- Soares, Sergei. 2012. "Bolsa Família, its design, its impacts, and possibilities for the future." *Working Paper*, International Policy Centre for Inclusive Growth, No. 89.
- Soares Sergei. 2013. "The efficiency and effectiveness of social protection against poverty and inequality in Brazil." In *Social Protection, Economic Growth and Social Change*, edited by James Midgley and David Piachaud. Edward Elgar Publishing Limited.
- Tatagiba, Luciana, Ana Claudia Teixeira, Karin Blikstad, and Stella Paterniani. 2014. "Inovacoes participativas nas politicas habitacionais para populacao de baixa renda. Um estudo de caso sobre o Programa Minha Casa, Minha Vida – Entidades." *Critica y emancipacion. Revista Latinoamericana de Ciencias Sociales*, ano VI, N° 11.
- Trubek, David, Helena Garcia, Diogo Coutinho, and Alvaro Santos. 2013). *Law and the New Developmental State*. Cambridge University Press.
- U.N.D.P. 2000. Human Development Report 2000: Human Rights and Human Development. Oxford University Press.
- Valenca, Mariana, and Marcio Bonates. 2010. "The trajectory of social housing policy in Brazil: From the National Housing Bank to the Ministry of the Cities." *Habitat International*, vol. 34, N. 2, Amsterdam, Elsevier.

Vazquez, Daniel, and Domitille Delaplace. 2011. "Public Policy from a Human Rights Perspective: a Developing Field." *International Journal of Human Rights*, Vol 8, N0, 14.

Vizard, Polly. 2006. *Poverty and Human Rights. Sen's Capability Perspective Explored*. Oxford University Press.

Vizard, Polly, Sakiko Fukuda-Parr, and Diane Elson. 2011. "Introduction: The Capability Approach and Human Rights." *Journal of Human Development and Capabilities: A Multidisciplinary Journal for People-Centered Development*, 12:1, 1-22.