

AN ANALYSIS OF CONDITIONAL CASH TRANSFER
PROGRAMS IN BRAZIL: FROM ENGRAINED
INEQUALITY TO BOLSA FAMILIA

By:

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Abstract

Has the implementation of social welfare programs, *Bolsa Familia* and *Brasil Sem Miseria*, sufficiently targeted the needs of Brazil's growing impoverished classes? As the nation moves towards a stronger economy and an expanding democracy, questions regarding the success, efficiency, and necessity of conditional cash transfer programs arise. Through an analysis of the development of social welfare programs in Brazil from the 1988 return to democracy to the present and through statistical testing aimed at determining the equality and effectiveness of various aspects of these programs, this paper seeks to illustrate the challenges facing Brazil and identify potential methods through which they can be overcome.

Background

From early colonization to its birth as a nation, poverty and inequality remain prevalent and continue to define Brazil's development. "In the sixteenth and seventeenth centuries, Brazilian sugar set international standards. During the eighteenth century, Brazilian gold helped finance Britain's industrial revolution, demonstrating Brazil's role in a mercantilist society. No sooner were gold deposits depleted than Brazil became the world's dominant exporter of coffee..."¹ Similar to many other colonial landholdings, early set up of the Brazilian economy demonstrated the determination of the Portuguese to exploit every ounce of wealth possible from the land. This early mercantilist set up laid the groundwork for reliance on slavery and class-based stratification of the social and economic systems. In this society, the *fazenda*, or plantation became the center of life on which both free and enslaved people labored to the benefit of the owner. Through the *fazendas* clientelism became entrenched in Brazilian society- a remnant that continues to plague the impoverished. Clientelism leads to a perpetuation of the social and economic systems by disempowering the poor and inhibiting their ability to actively create change for themselves. Through this process of exchanging votes for necessities, the poor lose an opportunity to exert their own agency and thus to reform the system that ensnares them.

Over the course of development in the nation, the Brazilian Northeast, "a region often described in terms of persistent poverty and resistance to change," continues to struggle to maintain stable and viable economic development for the

¹ Robert Levine and John Crocitti, *The Brazil Reader* (Durham: Duke University

majority of its residents. The widespread droughts that plague the region slowly gave rise to “drought industrialists”, a series of politicians and wealthy elites who “have shamelessly taken advantage of droughts to provide patronage for their cronies, waxing rich off the misery of the backward masses”². These “drought industrialists” perpetuate the stigma associated with residence in the Northeast and maintain a system of poverty, which buoys their political, financial, and social successes. The Northeast of Brazil is not a reference to a geographical region in so much as a description of an under-developed and more traditional sector of the nation. The Great Drought of 1877- considered the worst in Brazil’s history- contributed greatly to the perception of the Northeast as inherently worse-off in comparison with other regions. Beginning in 1872, the Northeast began to see a mass exodus of residents searching for improved livelihoods in the richer economic centers in the Southeast of the nation. This outward migration further exacerbated the impression of a backwards region incapable of developing and even led the government to consider the “*sertão* and its peoples as sad proof of the distance that separated Brazil from the advanced nations of the civilized world”³.

“Two-thirds of the inhabitants of Brazil at the dawn of the nineteenth century were African-born slaves or their descendants”. Slavery permeated the plantation society of the North and Northeast until 1888. During this period, thousands of slaves sought refuge by escaping and joining maroon communities deep in the Amazon as a means to escape oppression. With abolition, rose a still disenfranchised, illiterate, and impoverished population of former slaves. “The vast

² Ibid, 100

³ Ibid, 102

Northeast languished in economic depression throughout the nineteenth century, and the coming of the agro-industrial sugar factories in the sugarcane-growing regions of the Northeast made it possible for producers to hire day laborers for a pittance..."⁴ In the wake of abolition, the former slaves became part of an underclass deemed unworthy and unable to achieve economic or social success. Much like in the Southern United States, de facto segregation swept the land hindering freed slaves from finding jobs or partaking in cultural performances like capoeira. With no governmental intervention on behalf of the newly freed slaves, social and class stratifications widened aggravating already underlying conflicts regarding social structure.

The early 1920s signaled the initial industrialization of the nation- a period that would place the wealthy South and Southeast on a very different developmental path from the Northeast. The emergence of factory economies in São Paulo and Rio Grande do Sul spawned a growing urban and middle-class workforce incapable of forming in the agriculturally focused Northeast. Education levels in these regions grew and the economies shifted from extractive and exploitative in nature to industrial hubs capable of producing secondary goods from raw materials.

The 1930s marked a change of regime and a shift in politics under Getulio Vargas. Vargas sought to "end the more blatant abuse of the old political governors" but corruption under Vargas nonetheless remained part of the national identity, with Vargas' revolutionary regime being built upon the clientelistic remnants of the past. Vargas sought to modernize the nation and implemented programs and

⁴ Ibid, 121-124

legislation aimed at improving the standard of living of workers. These programs included implementation of a minimum wage and creation of free public universities. These programs, though designed to reduce disparities in the nation actually increased inequality as only the wealthy could afford the private primary and secondary education necessary to enter the free public universities. Vargas' social welfare programs disintegrated in the 1950s due to a lack of funding leaving the poor struggling to survive.

1964 signaled the start of a new era, under Marshal Humberto Castelo Branco, the military dictatorship of Brazil ushered an end to the populist reforms of the previous several decades. Under the military regime stratification intensified as the illiterates found themselves stripped of voting rights. The dictatorship tolerated mild "subversive" action so long as it remained out of the hands of the working classes. Maintaining the status quo persisted as the best way to keep power. The military forcefully censored its public and worked hard to subdue those who proposed divergence from their ways.

The 1980s in Brazil represent a so-called "Lost Decade" during which strikes and stagflation combined with a stringent austerity plan imposed by the International Monetary Fund led to widespread frustration with the government and a capitulation of the military dictatorship in 1985. Throughout the military dictatorship, the large private landholdings common since the colonial era lingered regardless of frustration and tension among landholders and the landless. Impoverished citizens began living on private land as a means to avoid high rents. "Land ownership in Brazil is concentrated in the hands of a minority, characterizing

one of the highest indices of concentration in the world. About 1 percent of the owners hold around 46 percent of all land”. The lack of land reform contributed to the creation of a society where “32 million people go hungry every day, and another 65 million are fed less than the necessities”.⁵ The Landless Movement (MST) put pressure on Fernando Cardoso’s government to fight for economic conditions in which they could thrive.

⁵ Ibid, 264-267

Modern Developments

Upon assuming office, Cardoso sought to present an image of a president working for the good of the people. In his inaugural address, Cardoso stated that “if it becomes necessary to do away with the privileges of the few to do justice to the vast majority of Brazilians, let there be no doubt: I will be on the side of the majority”. This powerful statement reiterates his determination to change the political, social and economic norms entrenched in Brazilian society. Prior to being elected president, Cardoso worked at a U.N. think tank and wrote *Dependency and Development in Latin America*. Cardoso, a self-proclaimed Marxist and progressive adapted his ideology to that of a post-Soviet era to advocate for a capitalist society. Cardoso longed to build a society in which the millions of poor Brazilians could improve their livelihoods “however, these (social) programs can be paid for only if the economy is vigorous, and the government cuts waste, corruption, and unnecessary bureaucracy.”⁶ Fernando Cardoso nonetheless retains credit for initiating social reform that would eventually translate into the social welfare programs transforming Brazil today. Cardoso created Brazil’s initial Conditional Cash Transfer (CCT) programs including Projeto Alvorado and Bolsa de Prestação Continuada, which were designed to assist both the elderly and the disabled. These programs, though small at their inception, were “cost-effective programs that were initially limited in coverage, but well-targeted to the appropriate population”⁷.

The election of Luiz Inácio Lula da Silva, or affectionately Lula, ushered in a new era of economic, political and social reforms. Lula sought to build off of

⁶ Ibid 289-294

⁷ Phillippe Leite, *Reducing Inequality: The Role of Reforms in Brazil* (2011)

Cardoso's early legacy of conditional cash transfer programs and to increase the amount of Brazilians able to benefit from social welfare. In October of 2003, Lula worked to unify four individual conditional cash transfer programs in order to decrease bureaucracy and to increase efficiency and effect. The unification of *Bolsa Escola*, a grant for school attendance, *Fome Zero*, a grant to reduce hunger and other provisions for kitchen gas resulted in the widely lauded *Bolsa Familia*. By unifying these four programs, Lula allowed for improvements in efficacy across all regions while simultaneously maintaining the decentralized nature of these programs at the municipal level in order to allow for adaptation as necessary. As a single entity, *Bolsa Familia* targeted Brazil's estimated 44 million citizens living below the poverty line and aimed to create a safety net that would catch the poor, protect them from economic shocks, and provide a springboard for real development. By providing cash rather than goods or benefits in return for recipients meeting various conditions, conditional cash transfer programs like *Bolsa Familia* avoid distorting secondary markets.

The benefits of conditional cash transfer programs in comparison to unconditional social welfare programs are immense. "Conditions induce households to behave differently than they would have had they been given unconditional cash...evaluation of the program shows increases in school enrollment, with larger effects for poor households"⁸. Conditional cash transfer programs invest in human capital with an end goal in not only helping citizens to avoid the brunt of poverty, but to escape its grip through improved education and health and access to greater

⁸ Jishnu Das, Quy-Toan Do, and Berk Özler, "Reassessing Conditional Cash Transfer Programs" (2005), 58.

services. *Bolsa Familia* not only aims to dramatically reduce income inequality, but also achieves this goal as over 80% of CCT benefits reach the poorest 40% of families⁹. *Bolsa Familia* provides benefits to roughly 11 million families through monthly cash transfers. Families that earn less than \$68 per capita monthly must have children under age 17 in their family or must be pregnant with fewer than four children in order to qualify for cash transfers, families that live in extreme poverty, or less than \$1.90 a day qualify for cash transfers regardless of family composition. In order to efficiently reach as many citizens as possible, *Bolsa Familia* relies on the use of self-declared income level rather than a proxy. Between 1995 and 2004, Brazil's Gini index (determinant of wealth inequality) fell by 4.7% with *Bolsa Familia* responsible for 21% of that change. Children of families enrolled in the program are 3.6% less likely to miss school than other and are 1.6% less likely to drop out than others. Similarly, contrary to popular belief- *Bolsa Familia* did not coincide with a desire to sit at home and simply collect cash transfers, but led to an increase in labor force participation¹⁰. Lula's *Bolsa Familia* demonstrated marked success even against other comparative conditional cash transfer programs implemented in the region including *Oportunidades* in Mexico and *Chile Solidario* in Chile. Both programs proved effective at reducing extreme income inequality in highly targeted regions but lacked the widespread effect witnessed under Brazil's program. The *Bolsa Familia* program is bolstered by support from the World Bank, but unlike many of the programs it has inspired, does not rely upon a network of

⁹ Anthony Hall, *From Fome Zero to Bolsa Família: Social Policies and Poverty Alleviation under Lula* (2006).

¹⁰ Fabio Soares, Rafael Ribas, and Rafael Osorio, *Evaluating the Impact of Brazil's Bolsa Familia: Cash Transfer Programs in Comparative Perspective* (2010).

international organizations to maintain the success of the program. In addition to contributing to the creation of programs in Mexico and Chile, similar conditional cash transfer programs have appeared throughout the hemisphere with PATH in Jamaica, Juntos in Peru, and Solidaridad in the Dominican Republic, to name a few.¹¹

Brazil's programs, however, are not without their detractors. Can such an incredibly large program efficiently monitor and evaluate the families receiving benefits? Can immediate needs of impoverished families be met? Does implementation take into account concerns of clientelism and corruption; does the program prepare the poor to succeed on their own? Efforts to combat these concerns appeared following the election of President Dilma Rousseff in 2011. Dilma's presidency initially appeared to be an extension of Lula's rule. Dilma capitalized upon his wild popularity and continued to expand social welfare programs through the creation of the most encompassing program to date- *Brasil Sem Miséria*, or Brazil without Extreme Poverty.

Brasil Sem Miséria developed several supplemental programs in addition to the four core programs inaugurated by *Bolsa Família*. In this way, Dilma showed a commitment to participatory development that would enable even the poorest a path to economic improvement. These new legs of *Brasil Sem Miséria* include programs targeting pre-school education, support for rural dwellers, and vocational education programs. The appearance of these programs aids development of human capital- and they are considered responsible for lifting 16.4 million people out of poverty. *Brasil Sem Miséria* operates on a sliding scale determined by per capita

¹¹ Judith Teichman, "Multilateral Lending Institutions and Transnational Policy Networks in Mexico and Chile" (2007).

income. Through this scale, as families begin to earn more on their own their cash transfers diminish until eventually the family no longer needs to rely on government support. The idea behind all of this is to develop generations able to grow beyond limitations of wealth and thus to contribute to a larger middle class which will serve to strengthen the nation's social, economic, and political structures. The Northeast in particular appears to thrive under this model. Though still facing significant obstacles to change, *Brasil Sem Miséria* encourages formalization of economy with 20% of recipients in the Brazilian Northeast formalizing their work since becoming beneficiaries of the program.¹²

While working to encompass various aspects of economic development, *Brasil Sem Miséria* also pushes for inclusivity. In addition to the *Cadastro Unico*, or Single Registration, through which Brazilians can register for *Brasil Sem Miséria* programs, the extension of registration services to a *busca ativa*, or active search enhances the ability of the Brazilian government to reach even the most needy and rural populations. Through *busca ativa*, teams of government workers comb through bucolic regions informing citizens of their rights to conditional cash transfer grants. Through active search, more than 887,000 extremely poor families have gained access to *Brasil Sem Miséria* since 2013.

Brasil Sem Miséria utilizes a multiplicity of tools to maintain relevance and efficacy in communities. One way in which they do this is through various health related programs. The health condition in *Brasil Sem Miséria* reports the lowest achievement rate among the various fields with only 69.92% of recipients

¹² Tereza Campello, "*The End of Poverty is Just a Beginning*", 9.

completing their health requirements in comparison to a 91.67% completion rate in education across all states “Beneficiary children are no more likely than nonbeneficiary children to have their vaccination cards updated. This might point to a supply-side problem arising from a lack of coverage of health service among the poorer population”.¹³ In order to tackle this disparity, the Brazilian government continues to build several initiatives to improve access to healthcare. The creation of over 904 basic health units between 2011 and 2015 demonstrates the government’s commitment to extending general health coverage to those without access to a hospital. Beyond providing access to basic health care needs, the Brazilian government through *Brasil Sem Miséria* seeks to promote health through the Health in School program. These programs aim to eliminate social health problems such as alcohol and drug abuse as well as to remove stigma from sexually transmitted diseases through sexual education instruction. By 2014, the Health in School Program was a prominent feature in 4,787 municipalities reaching 20,000 schools and 3.13 million students. A commitment to eradicating poverty-related diseases comprises the third branch of the government’s approach to improved health care. This fight includes combating diseases directly linked to poverty that originate from poor hygiene or sanitation or inadequate housing. These diseases include but are not limited to- leprosy, lymphatic filariasis, schistosomiasis and others. These various pillars to health prevention and treatment establish a

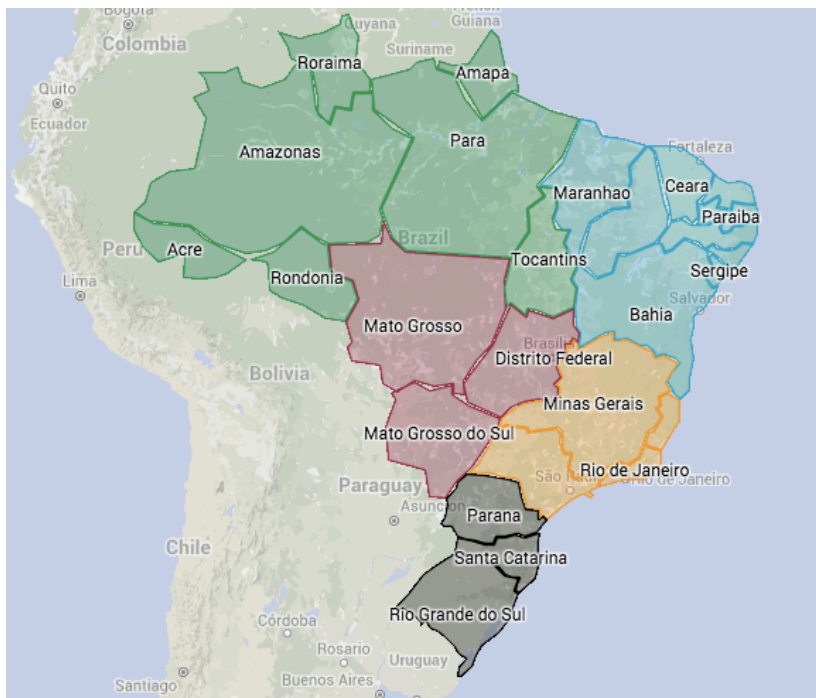
¹³ Soares, “Evaluating the Impact of Brazil’s Bolsa Familia: Cash Transfer Programs in Comparative Perspective”, 186

purported promise to improve livelihoods of all through community development.

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In order to further understand the efficiency and effectiveness of the *Brasil Sem Miséria* program I ran several of my own statistical tests to search for discrepancies, inequality, and any trends that may disagree with the stated goals of each program. I harvested data from the *Brasil Sem Miséria* website, gathering data for each state on: the number of families enrolled in the Single Registry, the number of families benefitting from Bolsa Familia, the percentage of the state on Bolsa Familia, the number of families found through Active Search, the percentage increase in transfers between 2010-2014, the percentage of health conditions met, the percentage of education conditions met, the number of people lifted from extreme poverty, the amount of money spent on Bolsa Familia, the amount of money transferred to beneficiaries of Bolsa Familia, and the GDP per capita.

Figure 1 below depicts the various Brazilian states grouped by region as noted by the Brazilian government. The North is tinted green, the Northeast



turquoise, the Midwest red, the Southeast orange and the South black. These colors and regions correspond to the regions used by the

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Figure 1, Map of Brazilian States and Regions, A.Goya

government when enacting policy.

From the data gathered by the Brazilian government, I discerned the approximate amount transferred to each family in a state by dividing the amount transferred to beneficiaries (total) by the number of families benefitting from Bolsa Familia. I received a mean of approximately \$1,983 reales per family.

Based on a historical trend of discrimination towards the Brazilian Northeast, I then hypothesized that there would be a statistically significant difference in the approximate amount of money transferred to each family between the north and northeastern regions compared with all other states and the federal district.

Statistical Tests

Comparing Means [t-test assuming equal variances (homoscedastic)]			
<i>Descriptive Statistics</i>			
<i>VAR</i>	<i>Sample size</i>	<i>Mean</i>	<i>Variance</i>
	16	2,024.48398	80,320.93121
	11	1,858.20884	4,327.56802
<i>Summary</i>			
<i>Degrees Of Freedom</i>	23	<i>Hypothesized Mean Difference</i>	0.E+0
<i>Test Statistics</i>	1.89792	<i>Pooled Variance</i>	47,280.33852
<i>Two-tailed distribution</i>			
<i>p-level</i>	0.07033	<i>t Critical Value (5%)</i>	2.06866
<i>One-tailed distribution</i>			
<i>p-level</i>	0.03516	<i>t Critical Value (5%)</i>	1.71387

Table 1, A.Goya

In order to determine this, I performed a two-sample t-test for difference of means. I evaluated the one-tailed p-value and found a p-level of .03516, which is lower than the alpha of .05. I then checked the means and determined that the mean for the North and Northeast was greater than that of the rest of the country. This means that not only is there a statistically significant difference in the approximate amount of money transferred to each family between the North and Northeast and other regions, but that the North and Northeast tend to receive greater benefits per family compared with other regions.

Following this preliminary test, I next sought to test if there was a statistically significant difference in the percentage of state funds spent on Bolsa Familia in the North and Northeastern regions compared to all other states.

Comparing Means [t-test assuming equal variances (homoscedastic)]			
<i>Descriptive Statistics</i>			
<i>VAR</i>	<i>Sample size</i>	<i>Mean</i>	<i>Variance</i>
	16	0.39124	0.00461
	11	0.13117	0.00285
<i>Summary</i>			
<i>Degrees Of Freedom</i>	25	<i>Hypothesized Mean Difference</i>	0.E+0
<i>Test Statistics</i>	10.6177	<i>Pooled Variance</i>	0.00391
<i>Two-tailed distribution</i>			
<i>p-level</i>	9.43607E-11	<i>t Critical Value (5%)</i>	2.05954
<i>One-tailed distribution</i>			
<i>p-level</i>	4.71804E-11	<i>t Critical Value (5%)</i>	1.70814

Table 2, A. Goya

I again performed a two-sample t-test for difference of means. I evaluated the one-tailed p-value and found a p-level of $4.71804E^{-11}$. I then determined that the mean for the North and Northeast was greater than that of the other regions. This means that there is a statistically significant difference in the percentage of state funds spent on Bolsa Familia in the North and Northeastern regions compared to all other states. This statistic can be attributed to higher rates of need in the North and Northeast in comparison to other regions of Brazil. In these areas an average of 544,092 families rely on funding from *Brasil Sem Miseria* in comparison with 466,192 families in other regions of Brazil. Similarly, the North and Northeast face dramatically lower per capita GDPs in comparison with their neighbors with an average per capita GDP of \$7,156.31 in the North and Northeast compared to \$16,661.36 in the mid and southern regions of the nation.

Through my next hypothesis I sought to test if there was a statistically significant difference in the percentage of education conditions vs. health conditions met across all states.

Comparing Means [t-test assuming equal variances (homoscedastic)]				
<i>Descriptive Statistics</i>				
<i>VAR</i>	<i>Sample size</i>	<i>Mean</i>	<i>Variance</i>	
	27	0.91669	0.00047	
	27	0.72498	0.01067	
<i>Summary</i>				
<i>Degrees Of Freedom</i>	52	<i>Hypothesized Mean Difference</i>		0.E+0
<i>Test Statistics</i>	9.43575	<i>Pooled Variance</i>		0.00557
<i>Two-tailed distribution</i>				
<i>p-level</i>	7.42739E-13	<i>t Critical Value (5%)</i>		2.00665
<i>One-tailed distribution</i>				
<i>p-level</i>	3.7137E-13	<i>t Critical Value (5%)</i>		1.67469

Table 3, A.Goya

I performed a two-sample t-test for difference of means and evaluated the two-tailed p-value to find a p-level of $7.427E^{-13}$. This means that there is a statistically significant difference in the percentage of education conditions vs. health conditions met across all states. This finding demonstrates the ease with which education conditions can be managed. School attendance comprises the majority of the education condition and with an average of 91.67% of families across the nation meeting these requirements. Contrarily, the health condition remains extremely difficult to measure with municipalities unable to provide the necessary health services for their populations. Across all states, only 69.92% of families met the mandated health conditions. This discrepancy proves the need for continued development of health protocol and building of community access to health posts.

This vast difference in accomplishment of health conditions compared to education conditions caused me to feel that the successes of each category are relative. If, when using all available resource, the average rate of success in health is 69.92% across all states and education is 91.67% across all states then the expected gap in success would be approximately 21%. I would use this margin to see whether there is a relative statistically significant difference between the rates of health condition achievement and the rate of education condition achievements across all states. In order to test this hypothesis I performed a t-test for difference of means utilizing a hypothesized mean difference of 21. The results of my tests demonstrated a p-level of 0 demonstrating that there is a relative statistically significant difference

Comparing means t-test assuming equal variances (homoscedastic)			
Descriptive Statistics			
VAR	Sample size	Mean	Variance
	27	0.91669	0.00047
	27	0.72498	0.01067
Summary			
Degrees Of Freedom	52	Hypothesized Mean Difference	21.
Test Statistics	1,024.17499	Pooled Variance	0.00557
Two-tailed distribution			
p-level	0.E+0	t Critical Value (5%)	2.00665
One-tailed distribution			
p-level	0.E+0	t Critical Value (5%)	1.67489

Table 4, A. Goya

in the rate of health condition achievement in comparison to education condition achievement. This means that even when scaled to account for obstacles contributing to potentially lower scores, achievement of health conditions still appears to be lacking.

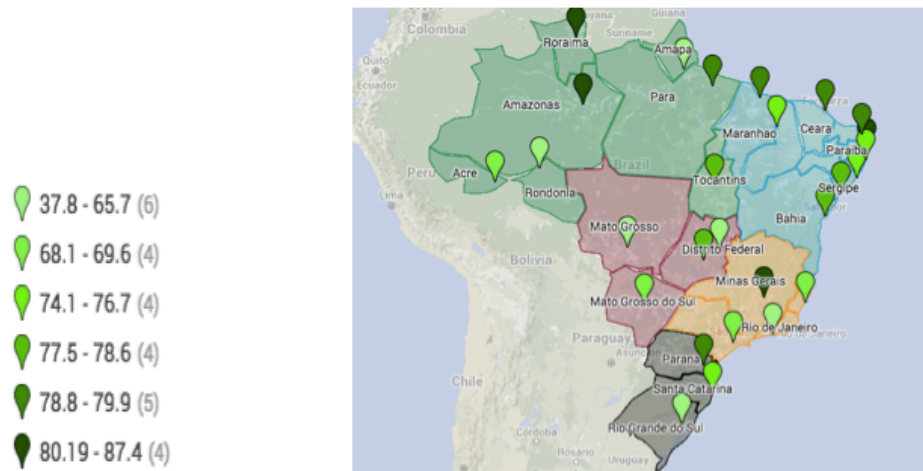


Figure 2, Distribution of Health Conditions by Percentage, A. Goya

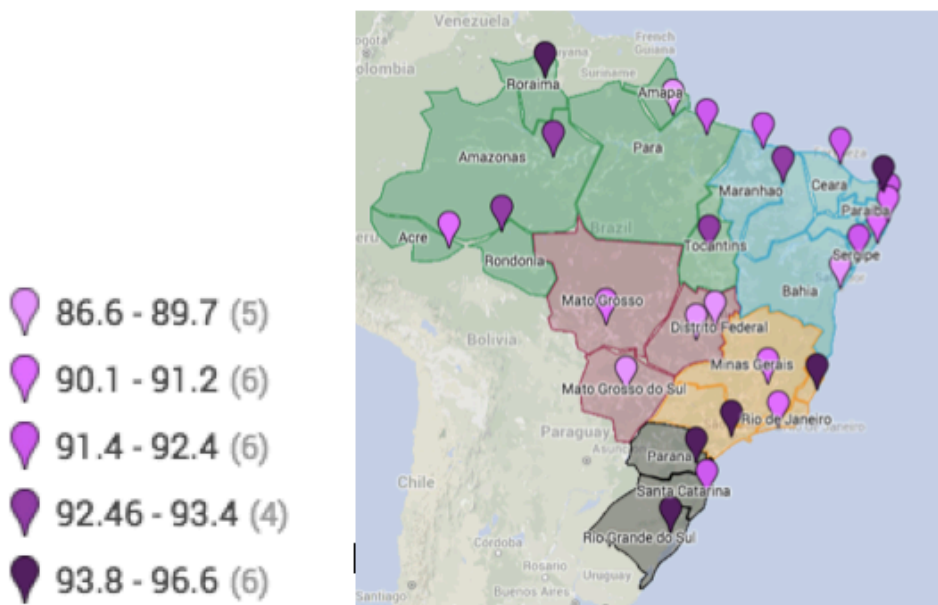


Figure 3, Distribution of Education Condition by Percentage, A. Goya

Figures 2 and 3 above show the distribution of health and education conditions across Brazil. The first map demonstrates the percentages of health conditions met across all states on a range from 37.8% to 87.4%. The second map

demonstrates the percentages of education conditions met across all states on a range from 86.6% to 96.6%. These maps indicate that it is possible that achieving education conditions over health conditions may be an inherently easier goal.

My next hypothesis was that the rate of education conditions met in the North and Northeastern states will be statistically significantly lower than the rate of education conditions met in other states.

Comparing Means [t-test assuming equal variances (homoscedastic)]			
<i>Descriptive Statistics</i>			
<i>VAR</i>	<i>Sample size</i>	<i>Mean</i>	<i>Variance</i>
	15	0.92057	0.00037
	10	0.9168	0.00047
<i>Summary</i>			
<i>Degrees Of Freedom</i>	23	<i>Hypothesized Mean Difference</i>	0.E+0
<i>Test Statistics</i>	0.45642	<i>Pooled Variance</i>	0.00041
<i>Two-tailed distribution</i>			
<i>p-level</i>	0.65237	<i>t Critical Value (5%)</i>	2.06866
<i>One-tailed distribution</i>			
<i>p-level</i>	0.32618	<i>t Critical Value (5%)</i>	1.71387

Table 5, A. Goya

I performed a two-sample t-test for difference of means and evaluated the one-tailed p-value to find a p-level of .32618, thus meaning there is no statistically significant difference in the rate of education conditions met in the North and Northeastern states vs. the rest of the states. This positive finding confirms that access to education for impoverished families is relatively equal regardless of what region they live in.

My next hypothesis was that the rate of education conditions achieved is greater than the rate of health conditions achieved across all states.

Comparing Means [t-test assuming equal variances (homoscedastic)]			
<i>Descriptive Statistics</i>			
<i>VAR</i>	<i>Sample size</i>	<i>Mean</i>	<i>Variance</i>
	27	0.91669	0.00047
	27	0.72498	0.01067
<i>Summary</i>			
<i>Degrees Of Freedom</i>	52	<i>Hypothesized Mean Difference</i>	0.E+0
<i>Test Statistics</i>	9.43575	<i>Pooled Variance</i>	0.00557
<i>Two-tailed distribution</i>			
	7.42739E-		
<i>p-level</i>	13	<i>t Critical Value (5%)</i>	2.00665
<i>One-tailed distribution</i>			
<i>p-level</i>	3.7137E-13	<i>t Critical Value (5%)</i>	1.67469

Table 6, A. Goya

I performed a two-sample t-test for difference of means and evaluated the one-tailed p-value to find a p-level of 3.713 E^{-13} . I then checked the means for both education and health, and determined that the mean for education was greater than that of health, meaning that the rate of education conditions achieved is greater than the rate of health conditions achieved across all states. Once again, these statistics show a need for greater capacity building and resource creation for health programs.

My next hypothesis was that the percentage of families on Bolsa Familia in the North and Northeastern states would be statistically significantly greater than the percentage of families on Bolsa Familia in the rest of the country.

Comparing Means [t-test assuming equal variances (homoscedastic)]			
<i>Descriptive Statistics</i>			
<i>VAR</i>	<i>Sample size</i>	<i>Mean</i>	<i>Variance</i>
	16	0.39124	0.00461
	11	0.13117	0.00285
<i>Summary</i>			
<i>Degrees Of Freedom</i>	25	<i>Hypothesized Mean Difference</i>	0.E+0
<i>Test Statistics</i>	10.6177	<i>Pooled Variance</i>	0.00391
<i>Two-tailed distribution</i>			
	9.43607E-		
<i>p-level</i>	11	<i>t Critical Value (5%)</i>	2.05954
<i>One-tailed distribution</i>			
<i>p-level</i>	4.71804E-	<i>t Critical Value (5%)</i>	1.70814

Table 7, A. Goya

I performed a two-sample t-test for difference of means and evaluated the one-tailed p-value to find a p-level of $4.718E^{-11}$. I then checked the means for both the North and Northeastern states and the remainder of the country, and found the mean for the North and Northeastern states to be larger. Thus, I determined that the percentage of families on Bolsa Familia in the North and Northeastern states is statistically significantly greater than the percentage of families on Bolsa Familia in the rest of the country. This test substantiates the claim that great inequality remains throughout Brazil and continues to be exacerbated by regional differences.

I performed a multivariate regression (MVR) test to check if there was a statistically significant relationship between the amount of money given to each family, the number of families on Bolsa Familia in a state, and the rate of

achievement of the education condition.

Linear Regression							
Regression Statistics							
R	0.05758						
R Square	0.00332						
Adjusted R Square	-0.07974						
S	2.25548						
Total number of observations	27						
Education Condition (6-17 attending school) = 92.6118 - 0.0000 * families benefitting from BF - 0.0004 * Amount transferred to each family (approx)							
ANOVA							
	d.f.	SS	MS	F	p-level		
Regression	2.	0.4062	0.2031	0.03992	0.96093		
Residual	24.	122.09241	5.08718				
Total	26.	122.49861					
	Coefficients	Standard Error	LCL	UCL	t Stat	p-level	H0 (2%) rejected?
Intercept	92.6118	3.40815	84.11814	101.10545	27.17363	0.E+0	Yes
families benefitting from BF	0.	0.	0.	0.	-0.11088	0.91263	No
Amount transferred to each family (approx)	-0.00045	0.00167	-0.0046	0.00371	-0.26776	0.79117	No
T (2%)	2.49216						
LCL - Lower value of a reliable interval (LCL)							
UCL - Upper value of a reliable interval (UCL)							

Table 8, A. Goya

According to the p-value, there is no statistically significant relationship between the amount of money given to each family, the number of families on Bolsa Familia in a state, and the rate of achievement of the education condition. I then performed a multivariate regression (MVR) test to check if there was a statistically significant relationship between the amount of money given to each family, the number of families on Bolsa Familia in a state, and the rate of achievement of the health condition.

Linear Regression								
Regression Statistics								
R	0.31484							
R Square	0.09913							
Adjusted R Square	0.02405							
S	10.20554							
Total number of observations	27							
Health Condition = 61.4554 + 0.0000 * families benefitting from BF + 0.0038 * Amount transferred to each family (approx)								
ANOVA								
	<i>d.f.</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p-level</i>			
Regression	2.	275.04937	137.52468	1.32041	0.28574			
Residual	24.	2.499.67424	104.15309					
Total	26.	2.774.72361						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>LCL</i>	<i>UCL</i>	<i>t Stat</i>	<i>p-level</i>	<i>H0 (2%) rejected?</i>	
Intercept	61.45544	15.42112	23.02354	99.88734	3.98515	0.00055	Yes	
families benefitting from BF	0.00001	0.		0.	0.00002	1.57997	0.1272	No
Amount transferred to each family (approx)	0.00379	0.00754	-0.01501	0.02258	0.50216	0.62013	No	
T (2%)	2.49216							
<i>LCL - Lower value of a reliable interval (LCL)</i>								
<i>UCL - Upper value of a reliable interval (UCL)</i>								
Residuals								

Table 9, A. Goya

According to the p-value, there is no statistically significant relationship between the amount of money given to each family, the number of families on Bolsa Familia in a state, and the rate of achievement of the health condition. “One could argue that the major problem is the low level of monitoring of health conditionalities, which was only 59 percent in the second semester of 2008; however it is hard to disentangle what is simply due to the lack of monitoring and what is due to the lack of better health infrastructure and services in some municipalities. Lack of coordination at the local level between the unit responsible for the program and the health unit may also be partially responsible for the low figures”¹⁵.

¹⁵ Soares “Evaluating the Impact of Brazil’s Bolsa Familia: Cash Transfer Programs in Comparative Perspective”, 187.

Research Recommendations

Given the time and means to perform research in the field, I would seek to replicate the statistical tests implemented above on municipal levels in order to determine variations in inequality within individual states and regions as well as on a national level. I believe these tests stand to be greatly enhanced by a more narrow examination that would enable a deeper understanding of how various *Bolsa Familia* and *Brasil Sem Miseria* projects fit in to the daily lives of their beneficiaries and how to improve upon them. An analysis of microcosms avoids the bias created when combining an entire state together and better demonstrates the wealth disparities when not balanced out or skewed by smaller wealthier communities. Similarly, an analysis on the municipal level would allow for more accurate data accounting for the over 5,000 Brazilian municipalities in comparison with the 27 Brazilian states, that would strengthen each statistical test's potential significance. Anthropological assessment of the projects could also provide further insight into the scope and reach of *Brasil Sem Miseria* through interviews of both beneficiaries and government employees. Additionally, an analysis of communities selected at random through participatory development measures such as community meetings and transect walks could assist the government to better refine programs to meet the varying needs of communities and to more efficiently run these programs.

Policy Recommendations

In a nation like Brazil, where every aspect of social and political interaction remains tainted by corruption and clientelism, as made extremely clear by the immense scandals surrounding the nation and the Petrobras Scandal have demonstrated, the necessity for transparency and mechanisms for better governance are crucial. “The national agency in charge should control entry into the program, institute a direct mechanism to transfer resources to beneficiaries, provide user-friendly bureaucratic channels for solving problems, and institute transparency and oversight mechanisms. Moreover, it must inform the public about these measures. Conveying clearly the terms of a program is a crucial first step in reducing clientelistic interference, which breeds on the misunderstandings and vulnerabilities of low-income populations.”¹⁶ Improving the structure of *Bolsa Familia* simultaneously allows for a removal of opportunities for potential beneficiaries to take advantage of the current system of self-reported incomes and empowers the poor by giving them the knowledge necessary to avoid clientelistic circumstances. *Bolsa Familia* continues to prove to be beyond the norms of a developing nation program and although corruption remains pervasive in the nation, “Many respondents attested to a considerable amount of quid pro quo political activity in their cities; some admitted to politicians trying to buy their votes in the most recent election; yet very few regarded the Bolsa Familia as grist for clientelistic networks. In other words, the overwhelming majority was quick to perceive the Bolsa Familia as a non-clientelistic form of poverty relief, very different

¹⁶ Natasha Borges, Wendy Hunter, “Whither Clientelism? Good Governance and Brazil’s ‘Bolsa Familia’ Program”, (New York: University of New York, 2013) 55

from the usual political wheeling and dealing”¹⁷. It appears to be imperative for power over the program to be held by the federal government, thus distancing beneficiaries from politicians who might seek votes in return for cash transfers.

Though *Bolsa Familia* is an impressive step towards poverty reduction in Brazil, inequality persists. “With the seventh most unequal income distribution in the world, the top 20 per cent in Brazil earn almost 64 per cent of personal income and the bottom quintile just 2.3 per cent.”¹⁸ While targeted income transfers certainly lay the groundwork for improving livelihoods, there is concern that “they cannot on their own overcome the poverty generated and sustained by entrenched inequities”. This notion, does not escape the nation, with even President Lula da Silva stating that “Bolsa Familia is not our salvation, merely an emergency measure...and the ideal is that in a few years time Bolsa Familia will no longer be necessary”¹⁹. Time, however, has demonstrated that *Bolsa Familia* is no longer a stopgap measure and has become a staple policy of the nation, one that on its own cannot impact the level of change expected and hoped for by those relying on its success. As greater levels of scandal and corruption emerge from Brazil, social welfare policies become a means to maintaining political power- “during 2006, in the wake of corruption scandals, political support for Lula strengthened significantly in the Northeast, Brazil’s poorest region, in which three-quarters of *Bolsa Familia* beneficiaries are concentrated”²⁰. This form of clientelism

¹⁷ Ibid, 58.

¹⁸ Hall, “*From Fome Zero to Bolsa Família: Social Policies and Poverty Alleviation under Lula*”, 704.

¹⁹ Ibid, 704

²⁰ Ibid, 705

demonstrates diverging sympathies within the nation- an elite that is frustrated with a corrupt government, and an impoverished populace supportive of the welfare policies sustaining them. In order to divert consolidation of political power under a series of policies, Brazil must continue to develop and invest in its education and health systems free from the net of *Bolsa Familia*. These investments could ensure improved infrastructure throughout the nation and begin to diminish inequality. “The World Bank itself now argues vehemently for strong interventionist policies to address mass poverty and inequality while promoting growth.”²¹ Though Brazil created the *Busca Ativa* program to reach greater numbers of the extreme poor, improved monitoring and targeting methods could provide for greater inclusion of these populations “in all countries with CCT programs, a substantial proportion of eligible households (about 60 percent in Brazil and 70 percent in Mexico) were not reached”²².

²¹ Ibid, 708

²² Soares, “Evaluating the Impact of Brazil’s Bolsa Familia: Cash Transfer Programs in Comparative Perspective”, 185.

Conclusion

Technical aspects aside, one of the greatest obstacles to true success for the *Bolsa Familia* program is the attitude of the nation. Productive and positive strides find themselves “counterbalanced by the strong political influence of relatively well off organized interests with a stake in preexisting social policy arrangements and of patronage-oriented politicians with an interest in maintaining discretionary programs and in dampening universal reforms that could potentially yield more equitable outcomes in the long term”²³. In a nation like Brazil which holds the economic power and political capabilities of executing programs which could efficiently combat not just poverty, but economic inequality, fails to do so the fault lies within a reliance on old, entrenched systems of politics. For although “Brazil’s post authoritarian governments have extended programs to previously excluded or marginalized individuals and have implemented new programs aimed at ensuring the most basic levels of social protection, they have protected privileged interests: influential groups have maintained and, in some cases, even expanded their already substantial benefits”²⁴. Thus, while *Bolsa Familia* undoubtedly contributes to improved livelihoods, the gap that the poor must cross in order to escape poverty remains as great as ever and continues to grow. For *Bolsa Familia* to create a new Brazil it would require a revolution in thought and processes combined with “meaningful reforms that systematically restructure the existing pattern of

²³ Wendy Hunter and Natasha Borges Sugiyama, “Democracy and Social Policy in Brazil: Advancing Basic Needs, Preserving Privileged Interests” (Miami, University of Miami, 2009) 29

²⁴ Ibid, 30

benefits”²⁵. Marked improvements in the nation rely on drastic restructuring of the current political and economic system and a shift in perspective from the ruling classes. Those in power need to transition their attitudes from considering *Bolsa Familia* as an electioneering tool to supporting it with reforms capable of providing the nation with the means to grow substantially.

As Brazil continues to develop, it is crucial the nation confronts its history of clientelism, corruption, and inequality. While a desire for transformation clearly manifests itself through the actions of the citizenry, the reluctance of the federal, state, and municipal governments to effectively enact complementary policies inhibits growth and investment within the nation. Until the government learns that maintaining old political policies and outlooks cannot create the expected and necessary changes, Brazil will continue to struggle and will remain one of the most unequal nations on the planet. “Perhaps the crux of the problem is not so much the viability of the concept itself, but how well it can be applied to provide underprivileged sectors of society with lasting access to basic services and job opportunities which may enhance their life chances”²⁶. It is this debate that remains to be reckoned with, for while in essence *Bolsa Familia* alleviates poverty and when combined with additional *Brasil Sem Miséria* projects, capacity builds in needy communities, the ability to do so effectively will continue to be only partially successful until a shift in the political climate reshapes the nation.

²⁵ Ibid, 30

²⁶ Anthony Hall, “From Fome Zero to Bolsa Familia”, 22

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