*5 Perceptions on Public Policies, Happiness and PHDI
(Principal Components)

Brazilians' perceptions on public policies

Executive Summary

Editors
Marcelo Côrtes Neri
Fabio Schiavinatto

ipea

CONCLUSION
EXECUTIVE SUMMARY

Marcelo Côrtes Neri*
Fabio Schiavinatto**

The knowledge of people's perceptions allied with objective data traditionally observed by most of the research conducted, allows IPEA to enhance and qualify its assessments on policies adopted by the Brazilian State, integrating in a more balanced manner, the elements of effectiveness, efficiency and efficacy of the results obtained.

Household surveys such as the Demographic Census and the National Household Sample Survey (PNAD) from the Brazilian Institute of Geography and Statistics (IBGE), capture different aspects of Brazilian society, such as the distribution of income, education and employment. However, they do not provide a direct notion of national differences compared to other countries, nor do they cover subjective aspects of people's lives. In order to know the Brazilian aspirations *vis-à-vis* those of other nations, it is necessary to view people's perspectives through international lenses, as in the emerging literature of happiness economics. These approaches are not yet part of the honorable traditions of Brazilian household surveys.

A recent innovation of the SIPS, presented in this book, was to incorporate to IPEA's field research, questions that are acknowledged internationally on social perceptions studies. The combined processing of this information allows for direct comparison of global, national and regional results[1].

The complex mosaic of data and analyses presented in this publication allows for a comprehensive reading of the perception of Brazilians on their lives and the impacts emanating from public policies, and, furthermore, promote international comparisons. The results were used in several cross-readings, which indicated a trend of dissatisfaction with some public services such as education, urban transportation and safety, issues that dominated the agenda of popular demonstrations in June of 2013. The results also indicated that the way to solve some of the challenges presented in popular manifestations depends on higher and not lower involvement of the State and that the sources for funding these actions are related to a more progressive tax structure. Moreover, perceptions indicate that population well-being passes through the working world and that people believe teachers hold the greatest possibility of transformation and can provide solutions to problems, such as overcoming poverty and even the low quality of education. Some perceived trends in daily life have been confirmed by the results presented, as in the case of the increasing use of new technologies, be it at work or as a source of information, but the existing inequality of access was still demonstrated, for despite the growing importance of technologies such as the internet, these are not yet accessible to the majority of the population. Other results call into question common perceptions of Brazilians, especially in regard to an alleged conservatism, since the majority of interviewees sympathize with the struggle for rights of vulnerable and traditionally excluded groups such as homosexuals, blacks and indigenous people, and the right to free expression.

In this manner, the results presented demonstrate great potential for the generation of information and analyses and opens several lines of work and partnerships, showing that the SIPS is consolidating itself in the research agenda of the IPEA and that the institute occupies a prominent role in the Brazilian state on measuring the perceptions of the population on public policies.

* Minister of the Secretariat of Strategic Affairs of the Presidency of the Republic (SAE/PR) and President of Ipea.
** Researcher of the Technical Advisory of the Presidency of Ipea.
1. In this aspect, IPEA was awarded in 2013 by the United Nations (UN) for giving the main contribution among countries of Latin America and the Caribbean to the "My World" research. The study identifies policy priorities of the population with a view to defining the new Millennium Development Goals (MDGs) for the post-2015 period, when the term of the current goals ends. The first results of My World's survey are in this volume.

CHAPTER 10
EXECUTIVE SUMMARY

IS HAPPINESS RELATED TO INCOME?*

Marcelo Côrtes Neri**

Chapter 10 deals with the relationship between income and happiness, measured by life satisfaction, reported by people in many countries around the world, with special attention to the Brazilian experience. From the incorporation of specific questions to the SIPS questionnaires, taken from internationally acknowledged research, it was possible to specifically address national issues and compare them to more than 132 countries. Using as a reference the empirical research of Deaton (2007)[1], but with a different functional specification, a high correlation between income and life satisfaction is demonstrated. From the estimation of a "happiness function", weights were established and assigned to each component of the Human Development Index (HDI) concerning satisfaction with current life. The results indicate that income explains about 66% of the variation in life satisfaction, against 31% of life expectancy, leaving less than 3% explained by components of education. Another result of the research was the creation of a wealth indicator to measure the relation of how happiness varies among people from different countries. The results show that there is a positive long-term correlation between present life satisfaction and material conditions, both in Brazil and throughout the world. However, Brazilian happiness is relatively indifferent to material conditions, which is exemplified by the fact that no country in the world, among the 132 surveyed, shows a lower correlation between the two variables than Brazil.

The low sensitivity of Brazilians towards material living conditions and income is shown by the fact that the Northeast region, although the poorest in the country, shows the highest level of current happiness. A good deal of the relation between income and happiness in Brazil is explained by the transition of those with no income at all to the lowest income range studied, indicating a great potential for public policies focused on the poorest. In fact, the relation controlled by several socioeconomic factors between implicit income variation in the expansion of the *Bolsa Família* and the variation of happiness of the same person over time shows positive results when compared to other transitions, less targeted on the poorest. Data indicates that the beneficiaries of the program earn an additional 0.41 point of happiness in relation to non-beneficiaries. This result indicates that redistributive policies, of which the *Bolsa Familia* is the greatest Brazilian example, can lead, in aggregate terms, to greater overall happiness of the nation.

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**Minister of the Secretariat of Strategic Affairs of the Presidency of the Republic (SAE/PR) and President of Ipea.

1. DEATON, A. *Income, aging, health and wellbeing around the world: evidence from the Gallup World Poll.* Cambridge, United States: NBER, 2007. (NBER Working Paper, n.13.317).

CHAPTER 12
EXECUTIVE SUMMARY

THE FUTURE, THE COUNTRY AND THE AGENDA OF 'THE COUNTRY OF THE FUTURE'

Marcelo Côrtes Neri*

Chapter 12 continues to explore the field of economics of happiness, addressing the perception of happiness of Brazilians in relation to time and the country's collectivity, facing both the former and prospective public policies agenda. On the first point, Brazil is the five time undefeated world champion in future happiness. On a scale of 0 to 10, the Brazilian citizen awards an average score of 8.6 to their expectations for life satisfaction in 2015, the highest of all surveyed countries. The world average is 6.7. This subjective data is embodied by the expression "Brazil: the country of the future", created 70 years ago. It also suggests reasons for why the country possesses a low savings rate and high interest rate.

The youth, as the Brazilians, also believe that the best of life is yet to come, which reflects in the decline in the future life satisfaction of a global citizen along his life cycle. More than a country of young people in its demographic composition, Brazil is a country inhabited by young at heart. The average score for future life satisfaction has been above 9 among the Brazilians between 15 and 29 years of age in the five years analyzed, feat that has never been achieved by young people from more than one hundred countries analyzed. Thus, Brazil is five times world champion of future happiness, or youthful attitude. This enables to reconcile two qualifications often attributed to Brazil: "country of the future", by some, and "young country", by others.

The other aspect addressed refers to a relatively low expectation of each Brazilian as to the general happiness of the nation, indicating a high dissonance of nearly 30% between the prospective vision of each Brazilian about their life and the vision of the whole country. In the interpretation proposed here, this second aspect would be consistent with greater importance in the national context of problems associated with collective action, problems which make the whole less than the sum of its parts, requiring mobilization and coordination of society. Examples such as high inflation and high inequality, which placed Brazil at the top of their respective world rankings, were recipients of major advances in Brazilian society over the past two decades. The new agenda of transformation that arises today in the country has this collective nature, such as the Brazilian urban problems, environmental and governance challenges.

* Minister of the Secretariat of Strategic Affairs of the Presidency of the Republic (SAE/PR) and President of Ipea.

SYNTHESIZING PERCEPTIONS ON HUMAN DEVELOPMENT*

Marcelo Côrtes Neri**

As the relation between income and well-being, measured by subjective happiness, is not direct, new perspectives are needed. Chapter 11 contributes to the discussion by developing a Perceived Human Development Index (PHDI), using the components of the Human Development Index (HDI) – that is, income, health and education – in their subjective versions. The dimension of work conditions was also added to the analysis. At first, an analysis of the priorities of the Brazilian population is made in terms of public policy *vis-à-vis* the global population through the questionnaire in My World, from the UN, incorporated in the SIPS. The global priorities are "quality education" and "improvement of health services", in that order. In the Brazilian case, there is an inversion on the order of these priorities, with health appearing in 85.5% of the questionnaires and education in 81.8% of them. In any case, the three most prominent elements both in Brazil and in the world represent the three components of the HDI.

The principal component analysis (PCA) applied to more than two dozen subjective questions allowed for eliminating the redundancy among similar queries, revealing a convergence of topics in two fronts, chance indicators versus outcome indicators, as well as the existing dichotomy between internal indicators on the status of the individual and external perceptions about society and associated policies. The relation between the respective components of the HDI and PHDI is also explored and the results indicate that the perceptions of individuals with income, education, health and work are relatively adherent to their counterparts' goals. Particularly, when we deal with internal perceptions about the status of the individual and less with external perceptions of associated policies. A ranking of the PHDI is presented for 109 countries in the full version of the book, with Singapore in the first place and Haiti in the last. Brazil was in position 62.

The weights assigned to each of the three components of the PHDI were also investigated for life satisfaction reported by individuals. The results of the regression show that the weight attributed to inner income perceptions is 64%, outer income perceptions 17,6%, inner health 8,9% and outer health 9,1% while outer education got a null weight. These results suggest that the sum of the assigned weights to each of them is not far in terms of magnitude from those estimated on a similar equation of life satisfaction in relation to objective indicators of the HDI, but different from metrics that assume equal weights used in the calculation of the standard HDI. On the other hand, the hypothesis that different age groups confer different weights to the components of the HDI is rejected. In general, the construction of the PHDI allows, by means of a summarizing indicator of subjective nature, for complementary analyses to those undertaken with the traditional HDI.

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** Minister of the Secretariat of Strategic Affairs of the Presidency of the Republic (SAE/PR) and President of Ipea.

PRINCIPAL COMPONENT ANALYSIS

Principal component analysis is a methodology that is useful when you have data on a number of variables and believe that there is some redundancy in those variables – which means that some of the variables are correlated with one another, possibly because they are measuring the same dimension. Given this apparent redundancy, it is likely that, for example, different item in a questionnaire are not really measuring different constructs; more likely, they may be measuring a single construct that could reasonably be labeled, in the present case, for instance, "an optimistic view of reality as a whole".

It consists in a variable reduction procedure, and involves the development of measures based on a number of observed variables and into a smaller number of artificial variables - called principal components - that will account for most of the variance in the observed variables. In essence, what is accomplished by principal component analysis it the reduction of the observed variables into a smaller set of artificial variables, what is done collapsing some redundant variables into single new variables that can be used in subsequent analyses as predictor variables in a multiple regression - or in any other type of analysis.

Technically, a principal component can be defined as a linear combination of optimally-weighted observed variables. In performing a principal component analysis, it is possible to calculate a score for each subject on a given principal component. Each subject actually measured would have scores on each one of the new components, and the subject's actual scores on the original questionnaire items would be optimally weighted and then summed to compute their scores on a given component.

In reality, the number of components extracted in a principal component analysis is equal to the number of observed variables being analyzed. This means that an analysis of a questionnaire with many items would actually result in as many components as the number of items. However, in most analyses, only the first few no redundant components account for meaningful amounts of variance, so only these first few components are retained, interpreted, and used in subsequent analyses. The remaining components account for only trivial amounts of variance and generally would therefore not be retained and further analyzed.

The first component extracted in a principal component analysis accounts for a maximal amount of total variance in the observed variables. Under typical conditions, this means that the first component will be correlated with at least some of the observed variables, and may be correlated with many. The second component extracted will have two important characteristics. First, this component will account for a maximal amount of variance in the data set that was not accounted for by the first component. Again under typical conditions, this means that the second component will be correlated with some of the observed variables that did not display strong correlations with the first component. The second characteristic of the second component is that it will be uncorrelated with the first component. Literally, a computation of the correlation between components 1 and 2 would give zero. That is the general rule: the remaining components that are extracted in the analysis display the same two characteristics: each component accounts for a maximal amount of variance in the observed variables that was not accounted for by the preceding components, and is uncorrelated with all of the preceding components. A principal component analysis proceeds in this fashion, with each new component accounting for progressively smaller and smaller amounts of variance - this is why only the first few components are usually retained and interpreted. When the analysis is complete, the resulting components will display varying degrees of correlation with the observed variables, but are completely uncorrelated with one another.

The observed variables are standardized in the course of the analysis, that is, each variable is transformed so that it has a mean of zero and a variance of one. What we mean by "total variance" in the data set is simply the sum of the variances of these observed variables. Since they have been standardized to have a variance of one, each observed variable contributes one unit of variance to the "total variance" in the data set. Therefore, the total variance in a principal component analysis will always be equal to the number of observed variables being analyzed, and the components that are extracted in the analysis will partition this variance. If there are six components, for instance, the first component might account for 2.9 units of total variance; perhaps the second component will account for 2.2 units, and so on, with the analysis continuing in this way until all of the variance in the data set has been accounted for.