

# IbMPI as a tool for eradication of multidimensional poverty in Costa Rica

An exploratory analysis

By Andrés Fernández Aráuz, 2021



## I. Introduction

Costa Rica took a momentous step on its struggle to identify and attend on a better way, the country's most vulnerable population by making official, in October 2015, the Multidimensional Poverty Index (MPI), thanks to joint work between the Government of Costa Rica, the National Institute of Statistics and Censuses (INEC for its acronym in Spanish) and the Association Horizonte Positivo, which led the country to consider using five dimensions that encompass what was going to be known as the multidimensionality of poverty. These five dimensions covered educational, health, labor, social protection and the state of housing and internet use.

Two years later, in August of the year 2017, the Business Multidimensional Poverty Index (*bMPI*) developed by the Association Horizonte Positivo with Oxford technical support Poverty and Human Development

Initiative (OPHI). The Business MPI (*bMPI*) is an adaptation of the Multidimensional Poverty Index (MPI) to the business sector, which measures living conditions of employees and their families in various dimensions considered priorities for the country: housing, education, health, work, and social protection, in addition to including a financial situation section.

The *bMPI* consists of the application of an online survey, which provides detailed information to the employer, about the living conditions of their workers and relatives. Costa Rica is the first country in the world in using the MPI in the sector business, and the model was so successful that has been replicated by the *Oxford Poverty and Human Development Initiative* (OPHI), through the creation of *SOPHIA Oxford*, that takes place in Latin America and the Caribbean.

## II. Multidimensional poverty: why does it matter?

The notion of poverty has been present in the field of economics for more than two hundred years. It has varied from concepts of well-being or utility to the measurement of gross domestic product as a proxy for poverty, but it is undoubtedly until a few decades ago that robust measures of poverty were available according to different criteria.

The basic idea of a poverty line is one of the oldest concepts in applied economics, it has been known at least since the 18th century (Ravallion, 2016, p. 191). Even before poverty measures existed for descriptive purposes, attempts had already been made to define what constitutes a minimum level of income so as not to be considered poor for policy purposes.

The economic interpretation of a poverty line is “the cost of obtaining a certain level of economic well-being or standard of living in a certain place and period” (Ravallion, 2016). This definition of poverty depends on the cost-of-living indices (or basic food basket) used to define well-being or the reference standard of living.

The key idea of the poverty lines is that the reference represents the minimum

level of economic well-being that is necessary to not be considered as poor. The poverty lines defined in countries like Costa Rica are objective and are based on the concept of basic consumption needs or minimum caloric requirements for subsistence.

In each country this may be different, and it also varies in each historical moment of a country, which is why it is necessary to constantly update the poverty lines to have an instrument in accordance with the reality to be measured.

However, in the last three decades, research in economic and social development has gradually expanded the concepts of social welfare, social progress, and poverty. But it was until the last decade that the measurement of well-being and social progress improved, with the appearance of new indices that seek to summarize these new ideas of poverty and well-being in quantitative indicators. One of these new instruments is the Multidimensional Poverty Index.

Traditionally, the measurement of poverty in most countries has been approximated by analyzing the income of households that reside within their borders, establishing a poverty

threshold or income line below which a household is classified as poor. (Fernández & Del Valle A., 2017).

But poverty goes beyond having or not having money. The Nobel Prize in Economics Amartya Sen has been the main promoter of the idea that poverty is not limited to lack of income:

*“Do we really get a diagnosis of individual poverty by comparing individual income with a socially given poverty line? What about the person with an income far above the poverty line who suffers from a severe illness? Isn't deprivation ultimately a lack of opportunities to achieve a minimally acceptable life, which can be influenced by several considerations, including, of course, personal income, but also physical and environmental characteristics, and other variables (such as availability and costs of doctors and other facilities)? The motivation behind this exercise is closely related to seeing poverty as a severe deprivation of certain basic abilities”. (Sen A., 2017, pp. 25-26)*

According to the economist Amartya Sen (2000) “poverty should be conceived as the deprivation of basic capabilities and not merely as the lack of income”. In Sen's approach, there are manifestations of poverty that are clearly identifiable and that are related to the possibility of developing the potential capabilities of everyone. For the author, the capabilities-based approach to poverty has the following advantages:

✓ *“Poverty can reasonably be identified with deprivation of capabilities; the approach focuses on deprivations that are intrinsically important (as opposed to low income, which is only instrumentally important).*

✓ *There are other factors that influence the deprivation of skills - and, therefore, real poverty - in addition to the lack of income (income is not the only instrument that generates skills).*

✓ *The instrumental relationship between lack of income and lack of skills varies from one community to another and even from one family to another and from one individual to another (the influence of income on skills is contingent and conditional).”*

According to this approach, lack of income and difficulties in converting income into functions can go hand in hand. The author exemplifies it as follows:

*“Disadvantages, such as age, disability, or illness, reduce a person's ability to earn an income. But they also make it more difficult to convert income into capacity, as an older, more disabled, or sicker person may need more income (for help, for prosthetics, for treatment) to achieve the same functions (even, if possible, achieve them). This means that **real poverty** (understood as the deprivation of abilities) may be, in an important sense, greater than it appears in the income space.” (Sen A., 2000).*

Furthermore, the measurement of poverty based on hidden household

income other aspects (such as inequalities in the allocation of income to everyone in the household) that can be observed by studying the real poverty, that is, deprivation of capabilities.

For Ravallion (2016) possibly the most important contribution of the Capability Approach has been the explicit recognition that households may vary in terms of its ability to convert assets and income into welfare (Ravallion, 2016, p. 141). The Business Multidimensional Poverty Index (*bMPI*) starts from this conceptual framework, so from an innovative way seeks to show certain shortcomings in

the group work of companies enrolled in the project.

To date, 32,905 families have participated in program, which represents 2% of the total number of households in the country<sup>1</sup>, in which 112,785 people live<sup>2</sup>.

<sup>3</sup>.

### III. The IPMe data: has poverty been reduced?

The *bMPI* database used to this document consists of 37,741 surveys applied to 32,905 employees of the 68 companies' participants. This database is find completely anonymized, so it does not include names or data of identification of collaborators or companies, within the framework of the *Law for Protection of People against the Treatment of their Personal Data* and the *Confidentiality Agreement* defined for the project.

These surveys have been applied since the year 2017, as detailed in the following table:

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<sup>1</sup> According to INEC estimates, in 2019 there were 1.6 million homes in the country.

<sup>2</sup> 2.2% of the 5 million inhabitants estimated at year 2019.

<sup>3</sup> El 2,2% de los 5 millones de habitantes estimados al año 2019.

TABLE 1  
bMPI SURVEYS APPLIED  
BY YEAR

Years	Survey
2017	5 727
2018	5 243
2019	18 562
2020	6 426
2021*	1 783
<b>Total</b>	<b>37 741</b>

\*As of August 2021

However, the methodology of application of the survey within the framework of *bMPI* is different from the one run by the National Institute of Statistics and Censuses (INEC). The National Household Survey (ENAH0, by its acronym in Spanish) conducted by INEC and applied in July of each year, consists of a probabilistic sample with national and regional representation and is based on a semi-panel of households that allows a high proportion of households to be monitored from one year to the next.

For its part, the *bMPI* survey has been used especially as an initial diagnosis, and it is not a sample, but a census of all employees of the companies that participate in the program<sup>4</sup>.

This implies that, unlike the work of the INEC, through which it annually monitors and publishes the poverty results each year for academic purposes and for macro planning of the country's public policy, in the case of the *bMPI* this has not been the objective, and for this reason the poverty data that can be calculated with the *bMPI* each year are not strictly comparable, since they come from different populations in each year.

Table 2 shows the percentage of poverty that can be estimated with the surveys applied in each year.

TABLE 2  
% OF POVERTY  
ESTIMATED ACCORDING  
TO THE YEAR OF  
APPLICATION OF THE  
SURVEY

Years	% poverty
2017	10,9
2018	14,4
2019	15,5
2020	11,9
2021*	15,6
<b>Total</b>	<b>14,1</b>

\* As of August 2021

<sup>4</sup> Although not all collaborators participate and take the survey.

Reiterating that the percentage is not comparable between years, it is possible to note that the multidimensional poverty level of the employees of the companies that have participated in the *bMPI* has been close to 14%, lower than the percentage of MPI in the country, which has been around between 16% and 19% between the same years, but very close to the percentage of multidimensional poverty in urban areas according to the measurement made by the INEC, which has ranged between 12% and 14.5%, and considering that 73% of employees reside in the Central Region of the country, it would seem a better point of comparison<sup>5</sup>.

Notwithstanding the foregoing, and as indicated at the beginning of this section, there are 37,741 surveys applied to 32,905 employees. This difference is because more than 4,800 employees have applied the survey on two occasions, for which they have been given a follow-up that will allow them to analyze the changes experienced by their family groups after having formally entered the projects and activities carried out by the companies to improve their condition.

Given that not all companies have entered the program since the initial year, but there has been a gradual entry, this implies that, in the same way, not all employees have applied the survey in the same years.

For the household group (workers) who have applied the survey twice (which will be called *bMPI* Panel), Table 3 shows the moments in which the initial measurement and final measurement were done.

TABLE 3  
MONITORING PANELS FOR HOUSEHOLDS  
IN THE *bMPI*

Years measured	Households	Surveys
2017-2019	3 468	6 936
2018-2019	177	354
2018-2020	570	1 140
2018-2021	88	176
2019-2020	263	526
2019-2021	265	530
<b>Total</b>	<b>4 831</b>	<b>9 662</b>

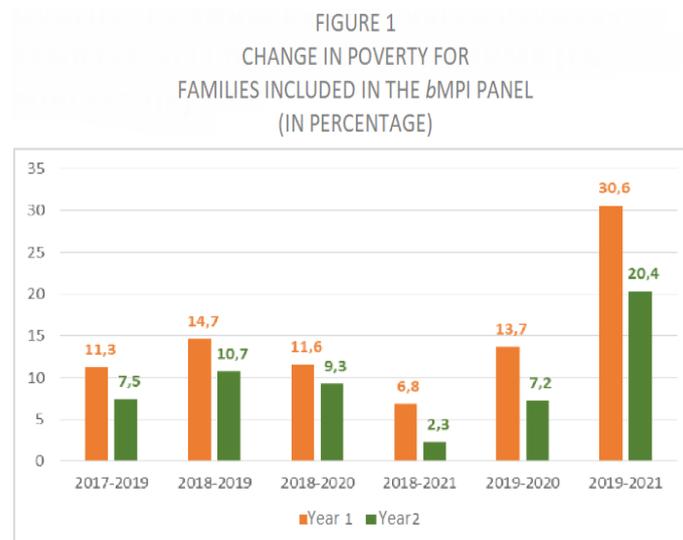
As can be seen, the group of *bMPI* Panel families applied by the first time the survey in 2017, 2018 or 2019, and for the second time in years 2019, 2020 or 2021. Within the *bMPI* Panel, the group main is made up of the 3,468 households that applied the survey for the first time in 2017 and were measured again in the year 2019. This group agglomerates 72% of the *bMPI* panel, and it is the largest given that involves the first families who managed to participate in the program thanks to the companies that signed up for it.

<sup>5</sup> Residence by Region: Central 73%; Huetar Caribe 9%; Huetar Norte 8%; Chorotega 5%; Central Pacific 1%, Brunca 1%, unknown 3%.

A second group of importance are the 570 families that applied for the first time in 2018, and for the second time in 2020 (12%), while the rest of the groups distributed in the other pairs shown in table 3.

Establishing this strategy identification in the *b*MPI Panel, it is possible to observe the following regarding to the evolution of poverty multidimensional.

As shown in graph 1, in terms general the global poverty of workers has decreased since its entry to the *b*MPI program. While not all cases have the same sample size, even in the two most representative groups are observe substantial reductions in poverty level, and that globally would reflect a decrease of 12.6% to 8.4% within the *b*MPI Panel.



The above result is even consistent when the shock experienced by the Costa Rican economy since the beginning of 2020 due to the COVID-19 pandemic, and that it forced the Government of Costa Rica to declare a National Emergency since March 2020. According to the data published by the National Institute of Statistics and Censuses, monetary poverty in Costa Rica went from 21.0% to 26.2% in 2020. The impact could have been greater, if it wasn't for the effect of the temporary government aid "Bono Proteger<sup>6</sup>".

<sup>6</sup> Without considering the income received through the Bono Proteger, the poverty estimated by the INEC would have been 30.4% throughout the country.

The loss of jobs because of the closure measures and movement restrictions established by the Government during 2020 is the triggering factor for the increase in poverty levels, since its immediate effect is a reduction in disposable monetary income in households.

However, multidimensional poverty (which measures factors other than income) not only did not grow, but even decreased, from 16.9% to 16.1%, which shows that the short-term impact was through income, but the long-term effects could materialize in factors other than this one. Indeed, according to the recently published ENAHO of 2021, multidimensional poverty increased slightly to 16.4%, which is even below the pre-pandemic level of 2019, and is statistically like that of 2020.

In line with the above, the analysis of the *b*MPI Panel shows that the decrease in poverty levels was maintained even in the two years that have elapsed since the pandemic began, and the rates of decrease are even like those observed pre-pandemic for this group of families (see table 4).

TABLE 4

POVERTY OBSERVED IN IPME PANEL FAMILIES  
ACCORDING TO FINAL MEASUREMENT TIME

Final measurement	Group size (%)	Poverty	
		Year 1	Year 2
Prepandemic 2021	75,5	11,5	7,7
Pandemic 2020	17,2	12,2	8,6
Pandemic 2021	7,3	24,6	15,9

These results consistently show that the family groups of the collaborators who work in the affiliated companies of the *b*MPI program manage to improve their poverty condition after approximately two years of participation in it, at least for the group that managed to be measured within of the *b*MPI Panel, so one of the future challenges of the program is to achieve a second measurement that is standard over time, and that allows obtaining information on the entire population participating in the program.

By analyzing in detail, the factors that led to the reduction of multidimensional poverty, it is possible to identify improvements in the levels of deprivation of the twenty indicators that make up the MPI, as shown in table 5.

In the first place, the improvements in the educational field stand out, a great decrease in the lack of low training or low development of human capital of the adults who live in these households.

Through the implementation of strategies aimed at improving education and training, it has been possible to substantially reduce the shortage of low educational level in the adult

population, and that has made it possible to eliminate this shortage of 43% of the households that were identified as poor in the first diagnosis of the *bMPI*.

The low educational attainment of the young adult population also showed a significant improvement, reducing the shortage in 8% of the poor households analyzed in the *bMPI* Panel.

The companies that are part of the *bMPI* have made available to their workers some of the following alternatives: scholarships or financial incentives, collaboration to continue secondary studies, donations of computer equipment, payment of technical courses, scholarships for relatives, development of centers education to close gaps in literacy, school, and college, among others.

**TABLE 5 *bMPI* PANEL:**

**INCIDENCE OF DEFICIENCY IN POOR HOUSEHOLDS OF THE PANEL**

Dimension	Indicator	Households with a Shortage		% Households with a Shortage		Households that exceeded Shortage	
		Year 1	Year 2	Year 1	Year 2	Total	%
Education	Non-attendance to regular education	23	12	3,8	2,0	11	1,8
	Educational lagging	54	31	8,9	5,1	23	3,8
	Without high school education	118	68	19,4	11,2	50	8,2
	Low development of human capital	491	230	80,9	37,9	261	43,0
Housing and internet use	Poor condition of ceiling or floor	222	142	36,6	23,4	80	13,2
	Poor condition of external walls	115	82	18,9	13,5	33	5,4
	Overcrowding	381	265	62,8	43,7	116	19,1
	No internet access	57	20	9,4	3,3	37	6,1
Health	Without life insurance	336	237	55,4	39,0	99	16,3
	Without potable water service	46	36	7,6	5,9	10	1,6
	Without excrement elimination	32	23	5,3	3,8	9	1,5
	Without garbage collection	15	3	2,5	0,5	12	2,0
Work	Long term unemployment or discouragement	163	76	26,9	12,5	87	14,3
	Non-compliance of minimum wage	294	111	48,4	18,3	183	30,1
	Non-compliance of other labor rights	350	111	57,7	18,3	239	39,4
	Informal independent employment	187	91	30,8	15,0	96	15,8
Social Protection	Children without external care	47	37	7,7	6,1	10	1,6
	Older adults without pension	77	50	12,7	8,2	27	4,4
	Disability without monetary transferances	100	74	16,5	12,2	26	4,3
	Out of the labor force for family reasons	66	45	10,9	7,4	21	3,5
<b>Total Analyzed Households</b>		<b>607</b>	<b>607</b>				

Secondly, strategies related to the Work dimension stand out, within which communication campaigns on labor rights focused on the recognition of the rights for the family members of the collaborators can be highlighted. Likewise, there have been entrepreneur fairs, training for Entrepreneurs who seek that the worker's relatives can participate in a series of talks and sessions to improve relevant aspects when starting an undertaking; workshops on employability skills for family members of employees; entrepreneurship and finance workshops; creation of a virtual catalog with the information of the undertakings; training on female empowerment in business, among other steps.

Finally, the overcrowding indicator has been improved through actions such as that of seeking to create bridges and facilitate the access of employees to housing solutions through different institutions that provide advisory and support to obtain loans or bonds for housing construction, home remodeling, expansion, and improvement. There have been visits with social workers and engineers to the homes to assess their status, fundraisers have been applied to remodel homes for the most at-risk cases, among other actions.

This has made it possible to eliminate this lack of 20% of the households that were poor at the beginning of the program, according to the *bMPI* Panel.

In the same way, the possession of health insurance is another indicator that collaborated in the reduction of multidimensional poverty for the group of households of the *bMPI* Panel, eliminating the shortage in 16% of the households, through initiatives that seek to provide information on insurance on behalf of the state, especially insurance for family benefits, together with monitoring and accompaniment of the process, so that people can complete bureaucratic procedures that can sometimes be complex or tedious for users. In some cases, employees have received private insurance from the company.

## Conclusions and recommendations:

The *bMPI* Program has reached 32 thousand households in the country, about 2% of the total, and the analysis of a sample of these households shows actions that have led to the reduction of multidimensional poverty in the group of households belonging to this program.

If the analysis of the *bMPI* Panel were extrapolated to the entire *bMPI* population, it is possible to project a reduction in poverty of about 1,600 households in the period 2017-2021, which would be equivalent to 5.5% of the total reduction in poverty by MPI measured by INEC in the period 2017-2020. However, it is required to perform the second measurement of

more than 28 thousand homes of the *b*MPI Program to provide certainty to the previous projection.

It is important to highlight that this program could be one of the most important that is implemented in the matter of social policy as an exclusively private initiative, without direct participation of public sector institutions, since the strategies implemented by the member companies have benefited the family groups of 9,000 employees, so its expansion could have even greater benefits to achieve poverty reduction goals in Costa Rica.

To achieve objective 1.2 of the Sustainable Development Goals, and reduce multidimensional poverty by half, Costa Rica needs to reduce this facet of poverty to 11%, which in absolute numbers implies lifting approximately 82 thousand households out of poverty.

According to the INEC, the MPI has been close to the 16% floor since 2019, so it seems to have reached a slowdown in the speed with which this indicator had been decreasing, which implies that achieving the reduction of 5.5 Percentage points remaining to reach the 11% goal will have special challenges for the country, and therefore the support of the private sector, and public-private

funds, will be vital to achieve the proposed objectives.

For this, companies must strengthen internal policies and strategic actions in order to better target the resources they use within the *b*MPI framework. Policies aimed at improving the human capital of employees and their families are essential, since these are the ones that allow the greatest generation of long-term capacities and increase the possibilities of breaking the circles of poverty.

Communication and information campaigns aimed at improving the knowledge of employees and their family groups regarding access to state benefits to improve their conditions are also important, given that there are policies and actions that are more costly to implement by companies, and for which the Costa Rican institutional framework for the execution of social policy offers resources that can become an important support for workers.

Finally, motivating companies to carry out the second (or even third) measurement of the poverty condition of their workers is essential to be able to evaluate the results and plan concrete actions based on empirical evidence within the framework of the *b*MPI Strategy.

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