



UNDERSTANDING THE ‘EXPERIMENTAL APPROACH OF ALLEVIATING GLOBAL POVERTY’ OF THE NOBEL LAUREATES IN ECONOMICS 2019

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Abstract

Economic Growth rates and the development process has accelerated in the last century across the globe and successful attempts are being made to alleviate poverty. However, ‘Extreme Global Poverty’ continues to be unacceptably high in reference to the sustainable development goals. The 2019 Global Multi-Dimensional poverty index stated that across 101 countries, 1.3 billion people – 23.1 percent are multi-dimensionally poor. The Nobel Laureates of 2019, Abhijit Banerjee, Esther Duflo and Michael Kremer, have given new dimensions to Development Economics by their contributions in applying ‘The Experimental Approach’ in tackling the above poverty issues. The Nobel Laureates 2019 have shown in their pioneering work how small projects at individual or group levels and specially designed field experiments can be used to solve the issues of ‘global extreme poverty’. Over a period of twenty years, their approach has reshaped research in Development Economics.

This paper traces the changes in the approach of Development Economics and the contributions of the noble laureates of 2019. It outlines the timeline of changes in ‘Development Economics’ since the emergence of ‘Behavioral Economics’. It discusses the contributions of the Nobel laureates of 2019 in ‘The Experimental Approach of Poverty Alleviation’ by outlining some field experiments - in areas of education, health, behavioral biases, gender and politics undertaken by JPAL to understand how random controlled experiments have being used to understand poverty issues at the micro level and developing policy measures according to localized needs.

Keywords: Extreme Poverty, Poverty Alleviation, Behavioral Economics, Experimental Approach, Randomized Control Trials.

Understanding the ‘Experimental Approach of Alleviating Global Poverty’ of the Nobel Laureates in Economics 2019

Economic growth rates and the development process has accelerated in the last century across the globe and successful efforts are being made for poverty alleviation but ‘extreme’ global poverty remains unacceptably high. The attainment of Sustainable Development Goal target of ending ‘Extreme Poverty’ by 2030 continues to be doubtful. Across the world, 736 million people still live in ‘extreme poverty’. The World Bank poverty headcount ratio at \$1.90 per day showed that the percentage of population below poverty line was 10% in 2015. While absolute poverty is still defined and measured in terms of percapita income, focus of poverty definitions is shifting toward ‘quality of life’. Nutrition, mortality, years in school, availability of cooking fuel, sanitation facilities, drinking water, electricity, housing, and assets are some indicators identified in The Global Multidimensional Poverty Index 2010 of the U.N. Development Program and the Oxford Poverty and Human Development Initiative. 1.3 billion people in 104 developing countries are ‘multidimensionally poor’ according to a survey of U.N D.P. 2018. Data reveals that more than 2.6 billion people do not have access to a proper toilets and clean drinking water. Every year, millions of children under the age of five die of easily preventable diseases due to lack of health facilities. Roughly 1 billion people –13 percent of the world’s population – still do not have access to electricity. Children in low- and middle-income group families are studying in primary school but do not meet minimum educational standards due to poor teaching-learning environment. Poor sanitation claims 1.6 million lives each year. The important question before the policy makers is ‘how to reduce global multidimensional poverty through effective policy measures?’.

The Nobel Laureates of 2019, Abhijit Banerjee, Esther Duflo and Michael Kremer, have given new dimensions to Development Economics by their contributions in applying ‘The Experimental Approach’ in tackling the above poverty issues. Their pioneering work has shown how small projects at individual or group levels and specially designed field experiments can be used to solve the issues of global extreme poverty. Over a period of twenty years, their approach has reshaped research in Development Economics.

Abhijit Banerjee is the Ford Foundation International Professor of Economics at Massachusetts Institute of Technology, United States (MIT), and a co-director of the Abdul Latif Jameel Poverty Action Lab (JPAL). He is a research associate in the NBER programs on Development Economics and Economic Fluctuations and Growth (EFG). Esther Duflo is the co-director of JPAL and Professor of Poverty Alleviation and Development economics at MIT. Michael Kremer, the Gates Professor of Developing Societies at Harvard University, is also a research associate in four NBER programs: Children, DEV, EFG, and Education.

This paper traces the changes in the approach of Development Economics towards poverty alleviation policy and the contributions of the noble laureates of 2019. The first section focuses on the timeline of changes in ‘Development Economics’ since the emergence of ‘Behavioral Economics’. The second section briefly outlines the ‘Experimental Approach’. The third section focuses on contributions of the Nobel laureates of 2019 in ‘The Experimental Approach of Poverty Alleviation’. It outlines some field



experiments - in areas of education, health, behavioral biases, gender and politics undertaken by JPAL to understand how the Noble Laureates are using random controlled experiments to understand poverty issues at the micro level and developing policy measures according to localized needs.

1. From Behavioral Economics to Experimental Approach

The latter half of the last century has seen the emergence of 'Behavioral Economics' (BE) as branch of economic research. Behavioral economics incorporates the effect psychological factors on the economic decision-making process of individuals. It challenges traditional approach of studying human behavior in 'homo economicus' with the assumption of three unrealistic traits—unbounded rationality, unbounded willpower, and unbounded selfishness - a calculating, unemotional human behavior. BE states that human decision-making behavior varies across time and place and, because it is influenced by psychological factors, emotions, and social influences, it is not as 'rational' as assumed in traditional economic models. Behavior is often 'irrational' or 'inconsistent'. From mid-nineties, economists and social thinkers began to put forward arguments that humans are emotional and are easily distracted therefore they make irrational decisions.

Nobel laureate Herbert Simon (1955) suggested the term "bounded rationality" to describe human problem-solving ability in a more realistic manner. Daniel Kahneman and Vernon Smith received the Nobel Prize in 2002. Daniel Kahneman "integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty."¹ Vernon Smith "established laboratory experiments as a tool in empirical analysis, especially in the study of alternative market mechanisms."² Their work laid the foundation for a new field of research - Experimental Economics. Under Experimental Economics, human behavior is studied under controlled laboratory conditions which are identical to actual economic markets and institutions and then the results of these experiments are analyzed.

Sir Angus Stewart Deaton, Noble laureate 2015, transformed "development economics from a theoretical field based on aggregate data to an empirical field based on detailed individual data."³ His analysis of consumption, poverty and welfare shifted the attention of economists away from analysis of macroeconomics aggregates to the analysis of individual households. In his analysis he concluded that effective economic policies for poverty alleviation could be designed by a study of individual consumption choices. In his book, *Understanding Consumption*, Deaton argued that "progress is more likely to come when macroeconomic questions are addressed in way that uses the increasingly plentiful and informative microeconomic data"⁴ Thus he linked microeconomics with the data analysis.

Nobel laureate 2017, Richard H. Thaler contributed to BE by "incorporating psychologically realistic assumptions into analyses of economic decision-making. By exploring the consequences of limited rationality, social preferences, and lack of self-control, he has shown how these human traits systematically affect individual decisions as well as market outcomes."⁵ Thaler questioned and investigated the assumption of 'rationality' and successfully showed that human psychology plays an integral part in man's economic decisions.

In 2019, Kremer, Banerjee and Duflo have been awarded the Noble prize "for their experimental approach to alleviating global poverty"⁶ The following sections discuss briefly The Experimental Approach in economics and contributions of Nobel Laureates.

2: The Experimental Approach

"Experimental research in Development Economics, like earlier research in labor economics and health economics, started from a concern about the reliable identification of program effects in the face of complex and multiple channels of causality. Experiments make it possible to vary one factor at a time and therefore provide "internally" valid estimates of the causal effect."⁷

Experimental approach argues that economic issues can be studied and validated in a manner similar to scientific experiments conducted to study the impact of a medicine in laboratories or through field experiments. Economic experiments can be used to study human response to incentives, like cash incentives, in a controlled laboratory environment designed with features of a normal economic problem under study. Such experiments can be used to understand the real world. Economists today are designing and

¹<https://www.nobelprize.org/prizes/economic-sciences/2002/press-release/>

² ibid

³<https://www.nobelprize.org/prizes/economic-sciences/2015/press-release/>

⁴ Deaton A, *Understanding Consumption*, Clarendon Lectures in Economics, 1992, pg 221

⁵<https://www.nobelprize.org/prizes/economic-sciences/2017/press-release/>

⁶<https://www.nobelprize.org/prizes/economic-sciences/2019/press-release/>

⁷ Banerjee, Abhijit V, Eshther Duflo, *The Experimental Approach to development Economics*, Working Paper 14467 <https://www.nber.org/papers/w14467.pdf>



implementing field experiments to understand how human behavior responds to changes due to policy interventions. Randomized Control Trial (RCT) is an important method adopted in the Experimental Approach. The RCT is an experiment which is conducted on a group of randomly selected individuals which is an experimental group or on a control group to study the impact of a certain policy intervention. The difference in results of the experiment on these two groups is measured and analyzed to assess the impact of the intervention. Thus, RCT measures whether the policy has made any impact and extent of this impact. It studies the cause-effect relationship and shows the influence of the intervention.

Initially, the RCTs were limited to scientific experiments particularly in the field of biomedical sciences. In the period 1960-90s, social scientists applied RCT to study the impact of social policies. RCT became an important tool of Development Economics since the mid-1990s. Prof. Kremer, Prof. Banerjee and Prof. Duflo and their colleagues have been conducting RCTs across 83 countries, especially India and Kenya, to study multidimensional poverty issues like health care, immunization programmes, microfinance and access to credit and have paved the path to experimental economics.

3. Experimental Approach in Poverty Alleviation

This section outlines some field experiments conducted by Abdul Latif Jameel Poverty Action Lab (J-PAL) in areas of education, health, behavioral biases, gender and politics – in the sphere of poverty alleviation by the Nobel Laureates and other economists. Development economics believed that rapid growth rate in an economy resulting from an increase in levels of saving, investment, and GDP - would solve the problem of widespread poverty. The emphasis of the planners and policy makers was on raising the growth rates. However, by the 1970s focus shifted to redefining poverty and the methods of its measurement and its causes because it was observed across the nations that the outreach and impact of poverty alleviation programmes was far below the targeted objectives. Many policy makers began to argue that the policy programmes, designed at macro level, did not give due importance to the micro motives of people being targeted and therefore failed to succeed.

The experimental approach began questioning the ‘trickle down’ approach of poverty alleviation schemes. Rather than blaming factors like ‘bad implementation’ and ‘corrupt officials’ for failure of anti-poverty programmes, Banerjee and Duflo adopted a methodological approach and used experimental tools and techniques to find out solutions which could actually solve the problem of poverty at the grass root level.

The behavioral and experimental economists argue that human behavior plays a critical role in the success of education, sanitation, health and credit availability policy measures adopted for reducing multidimensional poverty. Their studies reveal that persistent poverty despite policy measures of government is due to factors like reluctance in the people in accessing the services offered, high absenteeism among the service providers and their lack of interest in doing their duties. These problems can be easily solved by developing cost effective methods by designing field experiments to understand human behavior and responses.

By using RCTs, Banerjee and Duflo used microeconomic experiments for studying the basic question of Development Economics – causes of difference in per-capita income of developed and developing economy. On the basis of these studies, they concluded that the cause behind this is that low- and middle-income economies have large differences in productivity or rate of return to the same factor of production because while urban areas use latest technology and adapt to new opportunities, rural areas continue to use outdated production methods. This is due to factors like government failures, lack of credit and insurance, externalities, and behavioral factors. They argued that implementation of poverty alleviation programmes can be successful only when micro studies are conducted for identifying and understanding the factors at micro level and developing policy measures accordingly. The book ‘Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty’ (Banerjee and Duflo 2011) puts forward the results of such experimental microstudies in the sphere of education, health and nutrition and income generation.

The Abdul Latif Jameel Poverty Action Lab (J-PAL) was “founded in 2003 at the Massachusetts Institute of Technology (MIT) by professors Abhijit Banerjee, Esther Banerjee, Eshher Duflo and Sendhil Mullanithan, with the goal of transforming how the world approaches the challenges of global poverty”⁸. J-PAL conducts RCT experiments to find solutions to problems of various aspects of poverty across many countries. The laureates have made extensive studies in many areas of multidimensional poverty - education, health, behavioral biases, gender and politics. Some important experiments conducted by J-PAL have been outlined here to understand their viewpoint and contribution.

A. Education

Development Economics emphasizes on human capital as an important growth factor. From late 1980s economists started to highlight the importance of education. They focused on the quantitative factors - spreading the outreach of programmes in education, enrollment in schools, years of schooling - for improving human capital. In the mid-1990s, Kremer and his co-authors started RCT’s

⁸<https://www.povertyactionlab.org/about-j-pal>



to find cost effective measures to improve quality of education. Series of field experiments were undertaken across the globe focusing on different qualitative aspects of schooling. Some important field experiments include

i. Progresas⁹

Randomized evaluations have proved that school participation increases by making schools financially attractive through conditional cash transfers CCT i.e. by providing financial support to poor families when their children attended school regularly and use preventive health facilities offered. In 1997 a national CCT program, called PROGRESA, started in Mexico. In CCT cash incentive was given to households accepting preventive medical care - for children of age group 0-5 and lactating mothers who attended nutrition monitoring clinics and attend edclasses on education on nutrition and hygiene; and pregnant women who visited clinics offering prenatal care and health education. Out of 50,000 eligible communities in Mexican rural villages, 506 were selected. The treatment group of 320 was given benefits immediately and 185 controlled groups were assigned to receive benefits two years later. Under the RCT a survey of approximately 14,500 households with over 89,000 individuals and four follow-up surveys (at six-month intervals) of the same households were conducted over experimental period of 1997-2000. The experiment showed that there was a reduction in the incidence of illness, and reduction in anemia, improvement in health of adolescents and adults. PROGRESA reduced the number of days of hospitalization in both children and adults. After the success of PROGRESA, more than 30 countries established similar programs

ii. Textbooks vs. Remedial Education

The general idea amongst policy makers is that in developing countries, in particular in rural areas, primary education outcomes can be improved by providing textbooks to poor students. In order to determine the impact of distribution of textbooks on students, International Child Support (ICS) began a RCT in 1995. 100 primary schools in Kenya's Busia and Teso districts were randomly divided into four even groups. In each year, the performance of students of program schools was compared to those not yet receiving the program. The experiment revealed that textbooks did not have any significant impact on average test scores, class repetition and dropout rates. However, textbooks improved the scores of above average. The experimentalists argued that the country's single national curriculum ignores the fact that student population across the country is very heterogeneous. The national curriculum primarily focuses on the urban population and uses textbooks in English language. The conclusion drawn was that providing remedial education for children with low grades was a better policy option.

iii. Balsakhi Remedial Tutoring¹⁰

Balsakhi Remedial Tutoring, in Vadodara and Mumbai, India evaluated the impact a remedial tuition on primary school children between 2001 - 2004. Remedial teaching was introduced in 122 public primary schools. Balsakhi, a tutor who was usually a local woman, was appointed on a marginal pay to assist primary school children with poor grades. Balsakhi was trained for remedial teaching in basic maths and literacy skills to a group of approximately 15-20 children for two hours daily. These remedial classes improved the performance of children. Thus, program proved to be a cost-effective method in improving performance of students in primary schools.

iv. Computer-assisted learning (CAL)¹¹

In a similar project in Vadodara, India Abhijit Bthanerjee, Shwan Cole, EshtherDuflo and Leigh Linden, collaborated with an NGO to study the impact of Computer-Assisted Learning Project with an NGO in 2002-2004. In 111 primary schools in urban areas, RCT was conducted on grade four classes to study methods of improving levels of learning in children in schools in a cost-effective way. In 80 percent primary schools in Vadodara and Pratham, a program to supplement classroom instruction with CAL was introduced. The schools were provided with four computers each.

Fifty-five schools randomly received the intervention while 56 served as a comparison. Students in treatment schools were taught how to use the computers and then educational software was used to improve basic math skills for two hours per week. The students were tested in maths and language skills at three points - the beginning, middle, and end of the school year. The experiment was repeated in the schools of the comparison group in the next year. The result analysis showed that the CAL program improved the math scores of students. Further it was also seen that the language scores did not change much suggesting that CAL did not have spillover effects on learning in other subjects. The project concluded that Computer-assisted learning (CAL) effectively improves learning outcomes.

⁹<https://www.povertyactionlab.org/evaluation/impact-progresas-health-mexico>

¹⁰<https://www.povertyactionlab.org/evaluation/balsakhi-remedial-tutoring-vadodara-and-mumbai-india>

¹¹<https://www.povertyactionlab.org/evaluation/computer-assisted-learning-project-pratham-india>



v. Encouraging Teacher Attendance through Monitoring with Cameras in Rural Udaipur, India -2003-2006¹²

This RCT focused on primary schools in rural areas in Udaipur with the objective of studying “the effect of financial incentives on teacher attendance on students' attendance and math and language levels.”

One cause of low educational outcomes in rural areas in India is high teacher absenteeism. There is very limited disciplinary actions against absent teachers. The RCT was undertaken to conduct an experimental test on “whether the direct monitoring of the attendance of para-teachers (referred to simply as teachers in the rest of the paper), coupled with high-powered financial incentives based on their attendance, improves both teacher attendance and school quality”¹³ Each teacher in the program was given a camera with a tamperproof date and time stamp and to take a picture with students daily at the beginning and end of school day. The camera provided a financial incentive to attend school. Half the teachers were given cameras and the rest were in the controlled group. The experiment resulted in an increase in the teacher attendance from 58 percent in the control group to 79 percent in the group with cameras. In the camera group, 36 percent of the teachers were present at least 90 percent of school days. This improvement also resulted in improvement in student's overall performance.

vi. Technology interventions in imparting Education and impact on learning¹⁴

Experimental studies are being undertaken across the world to assess the transformative potential of technology in education. These RCTs focus on the impact of educational software, digital literacy skills, online courses, access to quality education, innovative techniques of students' learning on learning outcomes. In one such RCT of J-PAL, Andreas Barros raised a question - “Can equipping classrooms with education technology and training teachers to enrich their instruction with video-based learning materials improve teaching practices and student learning?”¹⁵ In collaboration with an NGO – Avanti Fellows (program Sankalp) a two-year RCT on grade 9 and grade 10 students in the 2019-2020 academic year has been initiated. The objective is to study the impact on learning of integrating information and communication technology (ICT) in teaching of math and science education. A sample of 240 public senior secondary schools have been selected randomly in Haryana and are divided into three groups –

- Full Sankalp program Schools - provided with ICT infrastructure in the form of two smart rooms and regular classroom teaching supplemented with digital content in maths and science. Teachers are also provided training to improve their teaching methodology in these subjects.
- Schools with no ICT – only maths and science workbooks are provided and teachers are trained.
- Schools in Comparison group- receive no ICT infrastructure, no printed material and no training programs for teachers.

The study aims to assess the impact on student learning by analyzing the monthly classroom observations as well as the results of students in the annual examination. The results of the above RCY are still awaited.

B. Health

Despite development of public health facilities and sanitation facilities, the mortality rates in children below age five continues to be high in developing countries due to the low outreach of these facilities. Kremer and his co-authors tried to analyze the reasons of these outcomes.

The infectious disease in developing countries is an important health issue. The spread of such diseases can be controlled very easily if they are controlled at an early stage. Control at individual level has a positive spillover which is often ignored. Miguel and Kremer used a RTC to measure this positive spillover.

i. Deworming drug treatment to study causes of school absenteeism and positive externalities¹⁶

In the mid-1990s, Kremer and his colleagues launched a randomized deworming drug treatment to study the reasons of high school absenteeism and find low-cost methods to solve the issue. The project concluded that “deworming program in Kenya led to at least a seven-percentage point average gain in primary school participation in treatment schools, reducing overall school absenteeism by one quarter. Treatment created positive health and school participation externalities for untreated students in the treatment schools and for pupils in neighboring schools. A rough calculation suggests that these spillovers alone are sufficient to justify not only fully subsidizing deworming treatment, but even paying people to receive treatment.”¹⁷ Worm infections caused by soil-transmitted

¹² <https://www.povertyactionlab.org/evaluation/encouraging-teacher-attendance-through-monitoring-cameras-rural-udaipur-india>

¹³ Duflo, Esther, Rema Hanna, and Stephen P. Ryan. 2012. Incentives Work: Getting Teachers to Come to School, *American Economic Review*, 102(4): 1241-78.

¹⁴ <https://www.povertyactionlab.org/evaluation/impact-education-technology-and-teacher-training-student-learning-india>

¹⁵ Op.cit

¹⁶ <https://www.povertyactionlab.org/case-study/deworming-schools-improves-attendance-and-benefits-communities-over-long-term>

¹⁷ Miguel Edward, Michael Kremer, Worms: Education and Health Externalities in Kenya, NBER Working Paper N. 8481, Sept. 2001



intestinal worms is very high in children in rural areas. This leads to anemia and malnutrition. Infected children have low immunity levels and fall sick frequently. Therefore, absenteeism level is high in rural schools.

The deworming project provided deworming tablets to children in 75 primary schools in rural Busia, Kenya. This reduced worm infections by 61 percent and school absenteeism by 25 percent. It also reduced in transmission of infectious diseases among untreated children enrolled in treatment schools and in children attending schools within three kilometers radius of treatment schools i.e., a positive spillover was seen. Subsequently, 'Deworm the World' project was launched by an organization 'Evidence Action' in 2013. Such campaigns have now been adapted in Ethiopia, Kenya, Vietnam, and India. A state-wide deworming campaign was started in 2011 with the support from Deworm the World in Bihar. Andhra Pradesh, Delhi, and Rajasthan also started such programs.

ii. Non-financial incentives improve rates of immunization in children¹⁸

A survey on health status and health-seeking behavior in villages in 2004 revealed that merely 16% of children below the age of 2 were fully immunized. In collaboration with a local NGO, Seva Mandir, a clustered RCT to evaluate impact of two interventions on immunization in rural Rajasthan, India was undertaken. One intervention (379 children aged 1-3 in 30 villages) focused on holding monthly immunization camps while in the second intervention (382 children aged 1-3 in 29 villages) parents bringing their children for immunization regularly were offered small incentives - 1 kg bag of lentils after each immunization and a set of plates when immunization was completed. The control group was of 866 children aged 1-3 in 69 villages.

The experiment compared the result and concluded that while regular camps almost doubled full immunization rates from 6% to 18%, immunization rate increased to 39% in villages where non-financial incentives were offered. Another the positive spillover was that the percentage of fully immunized children in age group 1-3 years in neighboring villages increased. The study concluded that "Small non-financial incentives, combined with improved reliability, had large positive impacts on the uptake of immunisation and were more cost effective"¹⁹

iii. Inexpensive method to improve water quality at the source to reduce the burden of diarrhea²⁰

Contaminated communal water supply in rural areas is usually the cause of diarrheal diseases. The open water sources of villages - used by all but cleaned by none- have contaminated water. J-Pal started an inexpensive method of improving sanitation of water in 200 springs in Busia district of Kenya. The springs were cleaned and contamination from groundwater was reduced by cementing the boundaries. 10 percent of the costs of the project were covered from the contributions of the local community which was also given the responsibility of maintaining the protected springs. This reduction in water contamination reduced the incidence of diarrhea in households who used water from these protected springs. The behavior of the local residents also changed –they showed a preference towards using protected water sources for getting drinking water.

C. Integrating Behavioral and Development Economics - 'The Present Bias'

Behavioral economists observe that people are not rational and often make inconsistent choices because of a psychological reason – 'The Present Bias' i.e., people tend to be biased towards the present. This leads to inconsistency in decision making. Individuals give more value to goods/income in the present rather than the same goods/income in the future. This leads to low savings, consumption of demerit goods and postponement in making decisions. Present bias explains impatience or immediate gratification in decision-making. Integrating this concept of present bias into their study, Duflo, Esther, Michael Kremer, and Jonathan Robinson²¹ conducted a study to answer the question why small farmers do not adopt simple modern technologies such as fertilizer - is it due to lack of information, lack of money to buy fertilizers, or inability to save for buying fertilizers.

They concluded that farmers are present-biased and tend to consume all they have today rather than to save for investing in buying fertilizer in future. They tend to delay the decision of buying fertilizer for the next crop and save instead. However, these savings are consumed in the interim period resulting in a lower usage of fertilizer.

In collaboration with the NGO International Child Support (ICS) an intervention called the Savings and Fertilizer Initiative (SAFI) was designed to test whether any method to decrease present bias would lead to increase in use of fertilizer. The intervention was conducted in 2003-2005, Busia district, Western Kenya on 1,230 small-scale maize farmers. The interventions tested over two seasons among a sample of farmers -

¹⁸<https://www.povertyactionlab.org/evaluation/improving-immunization-rates-through-regular-camps-and-incentives-india>

¹⁹ Improving immunisation coverage in rural India: clustered randomised controlled evaluation of immunisation campaigns with and without incentives <https://www.povertyactionlab.org/evaluation/improving-immunization-rates-through-regular-camps-and-incentives-india>

²⁰<https://www.povertyactionlab.org/evaluation/cleaning-springs-kenya>

²¹<https://www.povertyactionlab.org/evaluation/nudging-farmers-use-fertilizer-experimental-evidence-kenya>



- a. Basic SAFI: An ICS officer visited farmers immediately after the harvest, and offered to sell them fertilizer, at the regular price, with free delivery later in the season.
- b. SAFI with ex ante Choice of Timing: An ICS officer visited the farmers before the harvest and offered them the opportunity to decide when, during the next growing season, they wanted a chance to buy a voucher for future fertilizer use.
- c. Free Delivery Visit Later in the Season: farmers were visited 2-4 months after the harvest (when it is time to use fertilizer) and were given an offer to buy fertilizer, at the regular price, with free delivery.
- d. Subsidy Later in Season: An ICS officer visited the farmers 2-4 months after the harvest and offered to sell them fertilizer, at a 50 percent subsidy, with free delivery.

In the first season, the program increased usage of fertilizer by 14 percentage points. In the second season, the increase was more significant. The study showed that farmers purchased 50 percent more fertilizer when offered the small time-limited subsidy in the form of free delivery. They concluded that offering farmers “a time-limited small discount program on fertilizer may be an effective, easy to scale up, policy to encourage fertilizer use without distorting decision making and inducing excessive use of fertilizer.”²² This novel experimental research triggered many other studies on cognitive and psychological decision-making by poor people.

D. Impact of Gender on Policy Decision Making²³

In 1993, an amendment was made in the constitution of India and in all states, one-third of position of Gram Pradhans were reserved for women. This was done to increase participation of women in governance at the grass root level. In their paper entitled ‘Women as policy makers: Evidence from a Randomized Policy Experiment in India’, Chattopadhyay and Esther Duflo conducted a “detailed survey of all investments in local public goods in a sample of villages ... and compared investments made in reserved and unreserved GPs”²⁴ to assess whether the increased women’s representation made any impact on policy decision making. In a sample of 265 village councils in the Birbhum district in West Bengal and Udaipur district in Rajasthan, in a period of 2000 – 2002, personal data was collected initially about the village gram pradhan like pradhan’s family background, education, political experience. Following this, a RCT surveyed randomly selected villages to assess the existing public goods and infrastructure. Data was collected from the minutes of the village meetings about requests and complaints to the village councils in the subsequent six months. After two years data was collected from the same villages to assess the work done.

The study revealed that “In Rajasthan, 54 percent of women's complaints were about drinking water and 19 percent were about welfare programs, compared to 43 percent and 3 percent of men's, respectively. Unlike in West Bengal, compared to men, women complained less frequently about roads. Only 13 percent of women's complaints were about roads, compared to 23 percent of men's. This breakdown of preferences was again revealed in the investment decisions of the village councils. Village councils reserved for women invested in 2.62 more drinking water facilities, on average, and made fewer improvements in road conditions, leading to an 8 percent deterioration.”²⁵

The study concluded that the politician’s gender has an impact on policy decision making. “gender preferences of men and women are proxied by the types of formal requests brought to the GP by each gender. In West Bengal, women complain more often than men about drinking water and roads, and there are more investments in drinking water and roads in GPs reserved for women. In Rajasthan, women complain more often than men about drinking water but less often about roads, and there are more investments in water and less investment in roads in GPs reserved for women.”²⁶

The study concluded that the politician’s gender has an impact on policy decision making. Women elected as leaders under the reservation policy invest more in the public goods more closely linked to women’s concerns. They invest less in public goods that are more closely linked to men’s concerns.

Conclusion

The approach pioneered by the Nobel laureates presents a new methodology of understanding of the local issues and incorporating them in existing policy programs. J-PAL researches and evidence generated from randomized controlled trials in developing countries has benefited millions of people across the world. They have taught the use of field experiments and empirical

²² Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya Esther Duflo, Michael Kremer, and Jonathan Robinson* This version: October 2010 <https://economics.mit.edu/files/6170>

²³ <https://www.povertyactionlab.org/evaluation/impact-women-policymakers-public-goods-india>

²⁴ Chattopadhyay, Raghavendra, and Esther Duflo. 2004. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India." *Econometrica* 72(5): 1409-43.

²⁵ op.cit.

²⁶ op.cit.



microeconomic approach in studying small issues within the global-poverty question. The use of experimental economics is emerging as a new method of understanding and resolving problems related to poverty and social policies.

The work by the Laureates, has “dramatically increased the practical quantitative knowledge necessary to isolate key mechanisms behind poverty and behavioral responses to various policy interventions.”²⁷

References

1. Banerjee Abhijit V. and Esther Duflo, (Dec. 2004). Growth theory Through the Lens of Development Economics, MIT Dept. of Economics Working paper No. 05-01 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=651483
2. Banerjee Abhijit V. and Esther Duflo, (2009). The Experimental Approach to Development Economics, Annual Review of Economics, Annual Reviews, vol. 1(1), pages 151-178, <https://economics.mit.edu/files/3158>
3. Banerjee, Abhijit V, EshtherDuflo, (2008). The Experimental Approach to development Economics, Working Paper 14467 <https://www.nber.org/papers/w14467.pdf>
4. Banerjee, Abhijit, Shawn Cole, Esther Duflo, and Leigh Linden. (2007). "Remedying Education: Evidence from Randomized Experiments in India." The Quarterly Journal of Economics 122(3): 1235-1264. <https://www.povertyactionlab.org/evaluation/computer-assisted-learning-project-pratham-india>
5. Banerjee, Abhijit V. and Duflo, Esther, Glennerster Rachel, Kothari, Dhruva, (2010). Improving Immunisation Coverage in Rural India: Clustered Randomised Controlled Evaluation of Immunisation Campaigns with and without Incentives, BMJ 340:c2220 <https://www.povertyactionlab.org/sites/default/files/publications/Improving%20immunisation%20coverage%20in%20rural%20India.pdf>
6. Chattopadhyay Raghavendra and Esther Duflo, (December 2001). Women as Policy Makers: Evidence from a India-Wide Randomized Policy Experiment NBER Working Paper No. 8615 <https://www.nber.org/papers/w8615.pdf>
7. Deaton A, Understanding Consumption, (1992). Clarendon Lectures in Economics, pg 221
8. Duflo, Esther, Rema Hanna, and Stephen P. Ryan, (2012). Incentives Work: Getting Teachers to Come to School, American Economic Review, 102(4): 1241-78. <https://www.povertyactionlab.org/sites/default/files/publications/9%20Camera%20Monitoring%20AER.pdf>
9. Duflo Esther, Michael Kremer, and Jonathan Robinson, (October 2010). Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya Esther Duflo, Michael Kremer, and Jonathan Robinson, <https://economics.mit.edu/files/6170>
10. Gertler, Paul, and Simon Boyce, (April 2001). An Experiment in Incentive-Based Welfare: The Impact of PROGESA on Health in Mexico, Working Paper, <https://www.povertyactionlab.org/evaluation/impact-progesa-health-mexico>
11. Glewwe, Paul, Michael Kremer, and Sylvie Moulin. (2009). Many Children Left Behind? Textbooks and Test Scores in Kenya, American Economic Journal: Applied Economics, 112- 35. <https://www.povertyactionlab.org/sites/default/files/publications/33%20Textbooks%20Kenya%20Jan%202009.pdf>
12. India Development Review (Nov. 12, 2019). Idroline explains RCTs, <https://idronline.org/randomised-controlled-trials/>
13. Kremer, Michael, Jessico Leino, Edward Miguel and Alix Peterson Zwane. (2011). Spring Cleaning: Rural Water Impacts Valuation, and Property Rights Institutions, The Quarterly Journal of Economics 126: 145-205. <https://www.povertyactionlab.org/evaluation/cleaning-springs-kenya>
14. Michael Kremer and Edward Miguel, (January, 2004). Worms: Identifying Impacts on Education and health in the Presence of treatment Externalities Econometrica, Vol. 72, No. 1, 159–217, http://cega.berkeley.edu/assets/cega_research_projects/1/Identifying-Impacts-on-Education-and-Health-in-the-Presence-of-Treatment-Externalities.pdf
15. Michael Kremer and Edward Miguel, (2004). Worms: Education and Health Externalities in Kenya, Natural Field Experiments 00288, The Field Experiments Website
16. Websites -
17. <https://www.worldvision.org/sponsorship-news-stories/global-poverty-facts>
18. <https://www.povertyactionlab.org/case-study/deworming-schools-improves-attendance-and-benefits-communities-over-long-term>
19. <https://www.nobelprize.org/prizes/economic-sciences/2002/press-release/>
20. <https://www.nobelprize.org/prizes/economic-sciences/2015/press-release/>
21. <https://www.nobelprize.org/prizes/economic-sciences/2017/press-release/>
22. <https://www.nobelprize.org/prizes/economic-sciences/2019/press-release/>
23. <https://www.povertyactionlab.org/evaluation/balsakhi-remedial-tutoring-vadodara-and-mumbai-india>
24. <https://www.povertyactionlab.org/evaluation/computer-assisted-learning-project-pratham-india>
25. <https://www.povertyactionlab.org/evaluation/encouraging-teacher-attendance-through-monitoring-cameras-rural-udaipur-india>
26. <https://www.povertyactionlab.org/case-study/deworming-schools-improves-attendance-and-benefits-ommunities-over-long-term>
27. <https://www.povertyactionlab.org/evaluation/improving-immunization-rates-through-regular-camps-and-incentives-india>
28. <https://www.povertyactionlab.org/evaluation/nudging-farmers-use-fertilizer-experimental-evidence-kenya>
29. <https://www.povertyactionlab.org/evaluation/impact-women-policy-makers-public-goods-india>
30. https://www.poverty-action.org/sites/default/files/publications/women_policymakers.pdf

²⁷<https://www.nobelprize.org/uploads/2019/10/advanced-economicsciencesprize2019.pdf>