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Countering the discriminatory impact of minimum wages against disadvantaged workers: Literature review and experimental design development

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Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

**Countering the Discriminatory Impact of
Minimum Wages Against Disadvantaged
Workers: Literature Review and Experimental
Design Development**

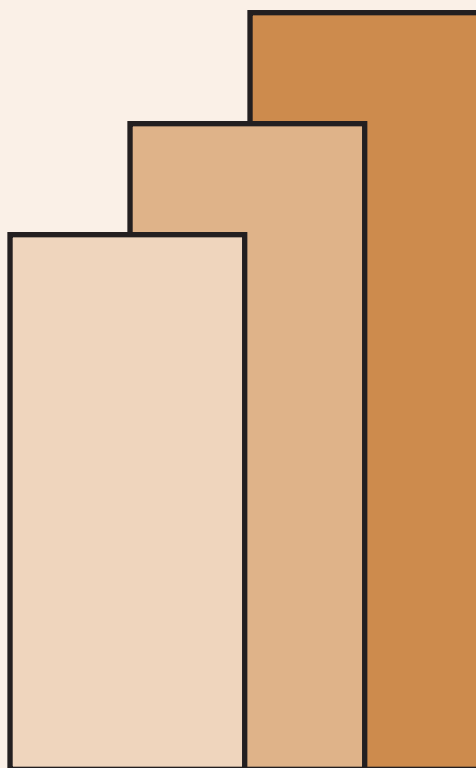
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Countering the Discriminatory Impact of Minimum Wages Against Disadvantaged Workers: Literature Review and Experimental Design Development

Aniceto C. Orbeta Jr. and Vicente B. Paqueo¹

December 2017

Abstract

It is a common belief that Government should set legal minimum wages (LMW) to a level that would enable workers and their families to live decent lives. Evidence, however, have shown that a higher and more rapid pace of LMW growth leads to lower demand for labor overall. Specifically, it leads to reduced hours, lower employment rate, reduced household income and higher poverty incidence. In addition, these adverse effects impact particularly disadvantaged population groups that include the young, inexperienced, low educated and women – in general, people with little human capital and poor job credentials. On this score, it is arguable that the Government is morally obligated to attenuate the above discriminatory effects against the poor and disadvantaged – effects that were created by its labor regulations. The question is: How? More precisely, what are affordable interventions to effectively address the issue?

This research reviews the global experience on initiatives to counter the discriminatory impact of LMW and related labor regulations. It also summarizes the analyses done to date for similar programs in the country. Knowledge gained from the review would be used to design an experimental study measuring impact of such initiatives. Some design ideas on evaluating these programs are also presented.

Keywords: Active labor market programs, minimum wage, impact evaluation, Philippines

¹ Senior Research Fellow and Distinguished Visiting Fellow, PIDS. All opinions stated are of the authors and not of the Institute.

Countering the Discriminatory Impact of Minimum Wages Against Disadvantaged Workers: Literature Review and Experimental Design Development

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1. Introduction

Filipinos commonly believe that Government should set legal minimum wages (LMW) to a level that would enable workers and their families to live decent lives. This belief, which is shared by many politicians, has led organized labor and their political allies to demand every year huge increases in LMW to achieve decent living wages. This demand is on top of their advocacy for Government to further restrict, if not totally prohibit, labor outsourcing and temporary or fixed term employment contracts to strengthen workers' job tenure and expand their entitlement to social security and other benefits mandated by law.

With the above mindset, Government has developed over the years labor regulations that made LMWs more elevated and hiring/firing practices more restrictive than those of competitors. The World Bank (2013)² shows that in 2005 USD, the Philippines has an LMW that is higher than that of China, Thailand, Indonesia, Vietnam and the average of East Asian and Pacific developing countries. Further, in relation to labor productivity as measured by value added per worker, World Bank (2016)³ data reveal that the Philippines pays a higher LMW. Data also indicate that the functioning of labor markets in the Philippine is less flexible compared to other nations.

The result is that Philippine labor became less competitive, undermining investment in labor-intensive manufacturing and other industries – and impeding sustained growth of employment demand and real wages. Evidence that a higher and more rapid pace of LMW growth leads to lower demand for labor on the whole can be gleaned from studies⁴ that empirically examined the impact of LMW in the Philippines. The findings of these studies are summarized in Table1 below.

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² World Bank (2013). See also Table 1 of Paqueo, V.B., A. C. Orbeta Jr. and L. A. Lanzona Jr (2017a).

³ World Bank (2016), "Republic of the Philippines labor market review: Employment and poverty," Washington, D.C. See also Table 4 of Paqueo, V.B. and A.C. Orbeta (2017b).

⁴ These studies include: Paqueo, Orbeta and Lanzona (2017); Canales, K.L.S. (2014); Paqueo, V.B., A.C. Orbeta Jr., L.A. Lanzona Jr., and D.G.C. Dulay (2014); and Lanzona, L. (2014).

Table 1. What's the Evidence on LMW Impact in the Philippines

LMW Impact On	Change
Employment rate (Lanzona 2014)	-
All	-
Women	-
Young	-
Less educated	-
Hours of work of employed (Canales 2014)	-
Average family income (Paqueo et al. 2014)	+
Employment of enterprises (Lanzona 2014)	
Small scale	-
Large scale	+

Source: Paqueo, V.B. and A.C. Orbeta Jr. (2017b).

Evidence shows that in the Philippines an increase in LMW leads to reduced hours. On the whole, it also leads to lower employment rate, reduced household income and higher prevalence rate of poverty. Interestingly, these adverse effects impact particularly disadvantaged population groups that include the young, inexperienced, low educated and women – in general, people with little human capital and poor job credentials. The level of employment of small enterprises is also negatively affected by increased LMW. Further, we find that disadvantaged workers are also adversely impacted by Government restrictions on temporary employment contracts. The above-mentioned unintended consequences contravene the spirit, if not the letter, of the constitution mandating Government to protect the welfare of disadvantaged workers.

On this score, it is arguable that the Government is morally obligated to attenuate the above discriminatory effects against the poor and disadvantaged – effects that were created by its labor regulations. The question is: How? More precisely, what are affordable interventions to effectively address the issue?

This research note reviews the global experience on initiatives to counter the discriminatory impact of LMW and related labor regulations. Knowledge gained from the review would be used to design an experimental study measuring impact of such initiatives.

The rest of the paper is organized as follows. Section 2 provides a review of the global literature on the impact of active labor market programs (ALMPs) focusing on evaluations that uses experimental design. This is followed by a review of known assessments of Philippine ALMPs. A summary of comments on promising interventions follows. The final section presents ideas that will guide the design of the impact evaluation of whatever program that will be chosen.

2. Review of Global Literature⁵

This section provides an overview of the global literature on interventions to generate employment to the unemployed in general and to specific vulnerable cohorts. The main interventions consist of (a) skills training, (b) wage subsidies, (c) employment facilitation, and (d) public employment programs. The discussion covers the primary constraints that are being addressed and the results of the impact evaluation using experimental studies.

2.1 Skills Training

Training is proposed when it is deemed that the primary reason why target beneficiaries is unemployed is that they do not have necessary skills needed by prospective employers⁶. Majority of these training is completed in relatively short period of time. The presumption is that with appropriate skills training, hiring the beneficiary is increased. The target beneficiary can be the general unemployed population or the much narrower disadvantage groups such as low income, or “vulnerable” or “disadvantage”, or more often called not in employment, education or training (NEETs) youth.

McKenzie (2017) reviewed 12 studies⁷ from 8 developing countries using experimental designs. Only one of the studies (Hirshleifer et al., 2016) covers all the unemployed population. The other 11 covers either the general low-income population, low-income youth or low-income women.

The summary of the review of evaluations using experimental design finds the impact is usually small. Since the cost of providing training is considerable, he pointed out that the programs will not pass the usually cost-benefit ratios and agrees with the summary statement in Blattman and Ralson (2015) stating that “it is hard to find a skills training program that passes a simple cost-benefit test.”

Hirshleifer et al. (2016) who studied the impact of providing vocational training for the unemployed in Turkey finds that the average employment impact to be positive but close to zero and statistically insignificant. They find positive and significant impact on the quality of employment and that these are stronger for training offered by private providers compared to

⁵ This was facilitated by the recent review done in McKenzie (2017) that provided critical assessment of evidence on ALMPs in developing countries with a focus on studies using experimental designs. Blattman and Ralston (2015) also did a review focusing on issues for poor and fragile states.

⁶ Another strand of training is on business skills for entrepreneurship or self-employment. This is not covered here.

⁷ Acevedo et al. (2017), Aluza et al. (2016), Attanasio et al (2011, 2017), Card et al. (2011), Cho et al. (2013), Diaz and Rosas (2016), Hirshleifer et al (2016), Honorati (2015), Ibarra et al. (2014, 2015), and Maitra and Mani (2017)

government training institutes. But it was also found using administrative data that these effects are no longer there after three years.

The summary provided in McKenzie (2017) points out that only 3 out of the 9 studies that reports impact on employment find significant impact. In addition, the simple average impact is only 2.3 percentage point increase in employment or less than 3 out of 100 participants get employed due to training. Confining the measurement to formal sector jobs, the impact is slightly higher at 3.6 percentage points.

In the case of earnings, only 2 out of 9 reports significant impact. The average increase is 17 percent. In terms of absolute income, the mean increase is \$19 per month.

One of the concerns pointed out is whether the trained individual get new jobs or merely crowds out non-program participants. McKenzie (2017) pointed out that none of the studies were designed to answer this issue.

It has been mentioned already that because the cost of providing training is considerable, the cost-benefit ratios does not usually pass the usual hurdle rates.

2.2 Wage Subsidies

Under perfect markets, labor is paid their value marginal product. This is the product of the price of the product and the marginal product of the worker. When the marginal product of the worker is uncertain for whatever reason (e.g., education from an unknown university, lack of work ethic, etc.), the firm is expected to minimize the downside of the uncertainty by hiring only those with the best qualifications. Artificially high wages, like a legal minimum wage, that set wages above the value marginal product worsens this tendency as firms are expected to cover themselves from the deviation between value marginal product and the legal minimum wage. Wage subsidies cheapen the hiring of labor. It makes possible for firms to hire even those whose capabilities they are not sure about, i.e. untested young workers, workers with doubtful or low qualifications. The longer-term impact is that workers with doubtful qualifications are presumably able to demonstrate their real productivity to the employer in the work place which is not possible if they are not given the chance of being employed. This process is expected to result into better matches between workers and firms.

McKenzie (2017) reviewed the recent evaluations of the impact of wage subsidy programs given to workers using experimental designs. He found three studies. One is for Argentina's Proempleo Experiment targeting welfare-dependent urban are (Galasso et al., 2004). The second is for young people in South Africa (Levinsohn et al., 2014). The third is for female community college graduates in Jordan (Groh et al., 2016). One other study provided subsidy to firms instead of workers (de Mel, McKenzie and Woodruff, 2016).

On the wage subsidy given to workers, one result found is the very low employment impact when firms are required to register hired workers. In the case of Galasso et al (2004), only three workers in the treatment group were hired and in Levinsohn et al. (2014), only 30 out of 1,500 vouchers were utilized. When registration of workers was not required (Groh et al., 2016), there was a 38 percentage points increase in employment. This effect, however, was no longer significant after the voucher period expired. This implies that the job experience gained under the subsidy did not provide productivity increase enough to cover the minimum wage.

Despite the lack of the use of the vouchers the Argentinian experiment the study show that the treatment workers had higher probability of employment although the employment gains are confined to female, younger and more educated workers. The South African experiment showed that the subsidy increased the mean accepted wages and decreased the share of youth experiencing long-term unemployment. Similarly, in the South African experiment those in the voucher group were 7.4 percentage points (approximately 25 percent) more likely to employed one year after the allocation and continues two years later.

When subsidies were given to microenterprises rather workers, the results were similar with 24 percent of the firms using the subsidy to hire a worker when the subsidy was in effect. The impact, however, disappeared when after the subsidy was removed.

It appears that even though wage subsidies increase employment probability while the subsidy is in force, it did not produce the longer-term objective of raising productivity of the targeted participants to the level of the prevailing wage needed to keep them employed.

2.3 Employment Facilitation

When lack of information on what skill workers have and what jobs are available in the market, employment facilitation programs are proposed. Lack of information on both sides of the market makes the matching of workers and firms costly. Employment facilitation programs are aimed at lowering the cost of finding these pieces of important information to facilitate a skill-job match. What makes this intervention attractive is that it is usually cheaper to implement than either training, wage subsidy or workfare programs. Some of the common employment facilitation programs include public intermediation services, job fairs, transportation subsidies, and providing information on job-seekers to firms.

McKenzie (2017) reviewed 9 studies⁸ studying 10 interventions using randomized designs. The review pointed out that while many studies showed small positive estimates, only 1 out of the

⁸ Abebe et al. (2016a, 2016b), Abel et al. (2016), Bassi and Nansamba (2017), Beam (2016), Dammert et al. (2015) Franklin (2015), Groh et al. (2015), and Jensen (2012).

10 studies showed significant positive impact on employment (Jensen, 2012). In addition, the impact is not substantial at 2.4 percentage points over three years.

2.4 Public Employment

When the constraint to employment is lack of jobs due to shocks (economic or natural), public employment programs are usually the solution proposed. These usually offers predetermined number of days of work at a specified wage to eligible beneficiaries. Another function of public employment programs is to augment the income of underemployed workers. Temporary public employment programs are also expected provide the work experience needed towards a more permanent employment.

There are two recent experimental studies on the impact of providing emergency employment. The results of the two studies, however, are conflicting. On the one hand, Rosas and Sabarwal (2016) finds that providing temporary employment to low educated youth in Sierra Leone had positive impact in the short-run (3-4 months). Cash income was also found to increase nearly three times relative to control. It also raised spending on food, medicines and assets. Finally, treatment households were also four times a likely to set up new household enterprises. Beegle et al (2015), on the other hand, finds no significant impact on the primary outcomes from providing public works program to low-income households in Malawi. It did not improve food security and even had some negative spillover effects on untreated households.

Rosas and Sabarwal (2016) utilized the randomized phase-in which provided three or four months gap of program implementation between treatment and control communities. Beegle et al. (2015), on the other hand, utilized the oversubscription of the program with more villages requesting the program than can be accommodated to randomly assign villages that requested the program into four treatment groups and one control.

3. Review of Active Labor Market Programs in the Philippines

This section summarizes the reviews and assessments of active labor market programs in the Philippines to provide a context in terms of what has been done to date to analyze the performance of these programs in the country. This is by no means an exhaustive review but is indicative of what types of analyses had been done on ALPMs in the country. The review reveals that while there are many employment generation programs implemented in the Philippines, only very few had been rigorously evaluated.

Manasan (2010) reviewed the operations of the several active labor market programs implemented between 2006-2008 including: (a) the Pangulong Gloria Scholarship (PGS); (b)

Special Program for Employment of Students (SPES); (c) work appreciation program (WAP); (d) employment facilitation and job search assistance; (e) livelihood / self-employment support programs, and (f) worker's protection and welfare services. The review accounted for budgets allocated to the programs, how many were served, and provided pointers on how to better measure the impact of the programs. When data allows it, a computation of how much cost per unit outcome is provided. For instance, for PGS the average cost per job secured is PhP 17,089 in 2008. This is more than twice the average cost per enrollee. It also provides estimates of the coverage of target population. SPES, for instance, covered only 2-3 percent of its targeted poor population aged 15-24. In addition, it points out that the leakage may be high because of the apparent weak system of eligibility verification that is based solely on the income tax returns of the applicant's parents. The coverage of WAP is even worse than SPES with less than 1 percent of the targeted young adults 18-25 years old covered. For PESO, it highlighted that the lack of an identified counterfactual makes the measurement of the impact of the PESO a tricky task. It is not clear whether those claimed to be placed through the PESO will be still be placed without the PESO. While the number of beneficiaries for self-employment programs was identified, there was no estimate how large are those relative to the targeted population. For worker protection services, only the amount of budget was mentioned.

Orbeta and Abrigo (2010) reviewed the scholarships programs provided by Technical Education and Skills Development Authority (TESDA), specifically the Private Education Student Financial Assistance (PESFA) and the Training for Work Scholarship Program (TWSP). PESFA is a long running program targeted at poor students. TWSP, on the other hand, is a relatively new program designed to address structural unemployment, help displaced workers, and workers wanting to change careers. The assessment showed the programs were performing well in terms of internal efficiency, e.g. graduation rates. It fell short in terms of external efficiency, e.g. employment rate. It was pointed out that the low employment rate was not really a problem specific to the scholarship programs but a more general problem of the Technical and Vocational Education and Training (TVET) sector. This issue is true not only in the country but also globally. The quasi-experimental analysis using inverse probability weighting on the impact of scholarships showed that (a) scholarships increases the probability of taking certification assessment, particularly for TWSP scholars, (b) scholarships increases the probability of employment after training, particularly for PESFA scholars, (c) scholarship reduces the duration of job search, particularly for TWSP scholars, and (d) scholarship does not affect usefulness of training in the workplace.

Ballesteros and Israel (2014) reviewed the NGA-initiated employment generation programs implemented between the period 2004 to 2012. The programs consisted of self-employment support, training and in-work benefits. They noted that the programs were targeted at specific clients mostly vulnerable / marginalized sectors and activated during emergency situations. They find that the employment impact the programs are apparently "transitory and short-term". They added though that this finding is tentative and needs to be validated through in-depth analysis of the programs. They have highlighted two issues: (a) the measurement and

definition issue of what constitute a job; and (b) avoiding the likelihood of double counting of beneficiaries. They recommended a more rigorous monitoring and evaluation of the programs.

Three rigorous evaluations using experimental designs were done recently on selected ALMPs in the country. One analyzes the impact of job fairs (Beam, 2016), another the impact of unilateral facilitation on international migration (Beam, McKenzie and Yang, 2016), and the third the impact of SPES (Beam, 2017). A rigorous evaluation of employment facilitation is currently underway as part of the evaluation of the Sustainable Livelihood Program (SLP) of the Department of Social Welfare and Development (DSWD) but the results will be available only in 2019.

The results of the rigorous evaluations seem to agree with the lack of strong positive impact on employment in other countries. Beam (2016) found that while conveying labor market information through job fairs does not increase overall employment there is some positive impact on moving to the formal sector. In addition, it also increases the likelihood of looking for work outside the region. Beam, McKenzie and Yang (2016), on the other hand, finds that interventions to facilitate international migration were unsuccessful at generating additional international employment.

The study on SPES (Beam, 2017) does a randomized control trial of the program to measure its impact on its two program objectives - education and employment. The program targets the “poor but deserving” youth by offering them 20-52 working days during vacations. The DOLE provides 40% wage subsidy. The author was generous enough to say that the program was found to correctly target the “relatively poor” beneficiaries, i.e. 4% below the national poverty line, and 63% below twice the national poverty line and some 26% 4Ps beneficiaries. The study, however, finds no effect on enrollment overall although it has some positive impact on the enrollment for men. Neither is there significant impact on college graduation rates. The program was not found to affect work readiness but increases the confidence of beneficiaries in finding a job. The study finds small positive impact on employment. Finally, on the cost-effectiveness side it was found that while the program does not cost much per beneficiary (PhP3,561) its small impact makes it a very costly way of preventing dropout (PhP222,600 per drop-out averted) and of generating employment (PhP91,318 per job).

4. Comments on Promising Interventions

Given the foregoing review most of the commonly implemented ALMPs do not seem to provide good prospects of either increasing employment nor increasing income of targeted beneficiaries. In the light of results of the review, McKenzie (2017) recommended moving away from the labor supply interventions and prioritize interventions that help firms “overcome the obstacles they face in innovating, growing, and creating more jobs.” McKenzie also recommended intervention that helps firms overcome regulations and labor laws that prevent them from hiring

more workers and growing. He conceded that on the labor supply side perhaps helping workers access different labor markets to overcome sectoral and spatial mismatches maybe be promising.

Blattman and Ralston (2015), for their part, emphasized that capital injection is key in stimulating self-employment as an effective program of job creation and poverty reduction. This, however, needs to be tempered by the similar lack of impact of self-employment programs on raising employment and income. Their point is that capital injection needs to accompany any self-employment centered interventions. It was added that training can be effective if accompanied with capital or linked with employers. Towards this end, they pointed to the promise in promoting on-the-job training.

It should be note that the country has been debating on how to treat on-the-job training. On the one hand, employers want to treat OJT as training, so they can pay lower than prevailing wages with the difference presumably to be considered as tuition. Workers, on the other hand, wants OJT to be treated as work so they can get higher pay. This implies workers are not willing to contribute to their training.

Still another avenue is letting training to be more demand-driven is for the private sector, e.g. industry associations, manage training with the government providing financing. TESDA had some experience on this and would be ripe for an impact evaluation.

It is often mentioned that training provided by private institute can be better. There is rigorous evidence on this in Hirshleifer et al. (2016). They found evidence that training provided by private providers are more effective than those provide by government training institute. In the light of this, an experiment can be designed to compare the performance of government training institutions and private training institutions.

There appears to be a need to re-examine the design of wage subsidies, employment facilitation and public employment programs in the light of the lack of evidence that they can increase employment and income. The challenge is to find a specific implementation design that considers the environment of the country to improve the likelihood of generating desirable impacts.

5. Design Ideas for Evaluating Promising Interventions

This section presents the ideas that will guide the design of a rigorous impact evaluation of programs to counteract the discriminatory impact of increasing legal minimum wages. It covers the evaluation design, the outcome of interest, sample size and power calculation, and the impact estimation procedure.

5.1 Evaluation Design

Experimental design should always be preferred in evaluating programs. This is because of its strong internal validity properties. This means having a pre-selected representative sample of the target population randomly assigned into treatment and control groups. The random assignment insures that identical groups are assigned into treatment and control. Consequently, any difference in outcomes of interest found after the observation period can be attributed to the treatment.

5.2 Outcomes of interest

The primary outcomes of interest are employment rate and earnings of the target population. As argued in the beginning of the paper, faster increases in the minimum wage are expected to discriminate vulnerable workers including the young, the less educated, and women. This defines the target population. Table 2 shows the unemployment and underemployment rate of the young (aged 15-24), low educated (i.e. with less than high school graduation) by sex from the October 2016 round of the LFS. It appears that the unemployment rate of the less educated (7.5%) is lower than the highly educated (13.9%). This is consistent with the observation that the poor cannot afford to be economically idle. Turning to the underemployment rate, the less educated (21.6%) has almost double the rate compared to that of the highly educated (12.5%). In addition, for those with lower education, the unemployment rate is higher for females relative to males, but it is the other way around for the underemployment rate.

Table 2. Unemployment and underemployment rate by education, 2016

Sex	High school graduate and above	Less than high school graduate	Total
<i>Unemployment rate</i>			
Male	0.148	0.070	0.111
Female	0.130	0.091	0.121
Total	0.139	0.075	0.115
<i>Underemployment rate</i>			
Male	0.144	0.238	0.190
Female	0.102	0.133	0.109
Total	0.125	0.216	0.161

Source of basic data: LFS October 2016

Table 3 show that in terms of basic pay, those with less education expectedly have lower pay (PhP220.24) compared to the more educated (Php363.82). It also shows females have lower average pay compared to males.

Table 3. Basic pay per day, 2016

Sex	High school graduate and above	Less than high school graduate	Total
Male	349.01	236.44	301.99
Female	379.41	155.78	343.71
Total	363.82	220.24	318.54

Source of basic data: LFS October 2016

5.3 Sample size and power

The power of an experiment to estimate a meaningful change in the outcomes of interest is critically dependent on whether there are enough observations in the sample. Power calculations will estimate the needed sample size. The LFS October 2016 round will be used to estimate the required sample size. To do power calculations, the `power` routine in Stata is used. Assuming randomization at the individual level, using proportions for employment and an assumed standardized effect size of 0.2 (or 5 percentage points change), the sample size required is 518 or 259 in the treatment and another 259 in the control group. On the other hand, using the basic pay as the outcome and a standardized effect size of 0.2 (or 27 pesos) will require a sample size of 788 or 394 on each side of the treatment arms. The sample size requirement for estimating the impact on wage income dominates the requirement for employment, hence, will be the binding sample size requirement.

The sample size is expected to increase if randomization cannot be done at the individual level but only at the cluster level say, firm, and intra-cluster correlation is expected.

5.4 Impact estimation

If the evaluation design stated above is followed, all that is necessary to measure the impact is a simple difference of means. This is equivalent to running a regression of the outcome on the treatment. The presence of a baseline will increase the power of the estimates. Given a baseline, it will be used as covariate in the estimation. Specifically, this means estimating the following model for a continuous outcome:

$$y = \alpha + \beta T + \gamma y_{-1} + \varepsilon$$

where:

y=outcome of interest

y_{-1} =baseline value of the outcome of interest

T= treatment variable, 1=treated, 0=control

The parameter β provides the estimate of the impact of the intervention. For outcomes that are not continuous, appropriate estimation procedures will be used, e.g. for binary outcomes probit or logit, and poisson for counts.

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