IX: WHAT'S THE EVIDENCE BEHIND YOUR WORK?

A study entitled "***How a school meal impacts the attendance and results of pupils in Bugarama-Rwanda***" was carried out in October 2009. The abstract and recommendations are included herein. The full study is accessible on the charity's web site - http://rsvpcharity.org.uk/Impact_Assessment.pdf

1. Abstract

The study was an 8 weeks elective project undertaken in October 2009 as part of MBChB degree program. It was carried out in the South West of Rwanda in Africa in a village called Bugarama. Its main aim was to study the impact of school meals on the attendance and exam results of pupils.

Research on food situation in Rwandan has recently revealed about 40% of people in rural areas cannot afford basic food and throughout Rwanda nearly 60% of people live on less than $1 a day. The effect of such food shortage on children was depicted in a latest house survey that found there are 28% of households which are typically headed by children, women or elderly people. And in these households, malnutrition rates are high with 45% of children under 5 stunted and 50% anaemic.

It is interesting to note zones harbouring more food insecure households also have school dropout rates that are almost twofold of the national average. And studies conducted in the USA showed students coming from families without adequate food supply have lower test scores in arithmetic and are more likely to be held back a grade.

So, the hypothesis to be tested in this project is that school meals improve school attendance and results. And in order to test this hypothesis, the school attendance and results of 293 pupils studying at Mihabula primary school, which provides school meals, were compared to those who attend a nearby primary school called Ryankana (n=352). No meals are provided at this school. The random allocation of pupils to village schools implies the results of this study will be representative of the Bugarama village as a whole.

Three statistical tests were used in this study. Firstly, the inter-school analysis, based on the independent t test, compared the mean annual attendance and exam results of pupils between schools. Secondly, the intra-school analysis used a paired t test to assess how the mean annual attendance and exam results fluctated within each school. Thirdly, the Spearman correlation helped to analyse confounding factors.

The study period spans from 2007 to 2009 and depicts children' progression from P4 in 2007 to P5 in 2008 and P6 in 2009. Interestingly, each of the three school years represented a unique meal status; with no meal served in 2007, a daily meal in 2008 and a meal every second day in 2009. Moreover, in addition to matching pupils by class level, the impact of confounding factors such as family size, parents' education, parents' occupation, home/school distance and gender on school attendance and exam results were also factored into the main analysis.

The results of this study show, although Mihabura School managed to clock in more school days in 2007 than Ryankana, a statistically significant difference in the mean annual attendance was not achieved until the introduction of school meals in 2008 ($p=.001$). Equally, although Ryankana outperformed Mihabura in 2007, this was overturned when meals were introduced in Mihabura in 2008. Interestingly, after 2008, Mihabura pupils managed to maintain their statistically significant mean annual attendance ($p<.01$) and exam results ($p=.034$) supremacy on Ryankana peers independently of the meal status.

The existence, and mechanism of action, of highly effective meal-independent factors that maintained Mihabura ascendancy when the meal frequency was halved in 2009 suggests such factors and school meals have a common denominator. Consequently, we propose herein that any factors, which encourage children to remain in school would, just like school meals, also help them better their local exam as well as national test results.

2. Recommendations to the ministry of education and local educational authority

- In the light of the evidence uncovered in this study, achievements recorded at Mihabura School should not be seen as serendipitous. Instead they are a direct result of investments in teachers and pupils.

- Second, there is nothing inherently wrong with a number of non-achieving village schools. All they need is evidence-based investment.

3. Recommendations to RSVP Trustees and Donors

- First, it is clear the school meal has made a noticeable and statistically significant impact on the attendance and performance of pupils who attend Mihabura School. And the expansion of this scheme to more Mihabura classes and other village schools can be undertaken with the full assurance that the scheme is based on sound evidence.

- Second, there is evidence that other meal independent projects such as teachers' incentive payments influence the attendance and performance of Mihabura pupils. Therefore, the withdrawal of such incentives without replacing them with other equally motivating alternatives should be taken with caution.