



# INVESTMENT CASE

Bicycles as a Conditional Asset Transfer to Boost Rural Girls' Education Outcomes and Empowerment



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## INTRODUCTION

**World Bicycle Relief's (WBR)** decade-long partnership with the Ministry of General Education in Zambia, which has benefited 36,977 rural girls in 100 primary schools, presented an opportunity for independent researchers to measure and evaluate the impact of bicycles as a conditional asset transfer on rural girls' education and empowerment.

In 2017, Innovations for Poverty Action (IPA), a research and policy nonprofit, conducted a rigorous randomized controlled trial (RCT) to assess the impact of WBR's bicycle programs on girls' education and empowerment in rural Zambia. In 2019 and 2020, one of the principal investigators of the RCT conducted a follow-up study to evaluate the ongoing impact of the bicycles.



The findings from this research add to the growing global body of evidence demonstrating that bicycles can serve as an effective, low-cost conditional asset transfer to improve rural girls' educational outcomes and empowerment.

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## GIRLS WHO RECEIVED BICYCLES:



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**19%**

were 19 percent less likely to drop out of school

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**1/3**

cut their commute time by one-third, saving more than an hour each day

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**28%**

were 28 percent less likely to be absent

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**33%**

were 33 percent less likely to miss school or leave school early due to safety concerns

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**66%**

were 66 percent more likely to arrive to school on time

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**22%**

Were 22 percent less likely to be harassed on the way to school

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**SCORED HIGHER**

on a mathematics assessment test

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reported feeling **MORE IN CONTROL** of the decisions affecting their lives

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ranked themselves **HIGHER ACADEMICALLY**

and had a greater belief in their potential to succeed in life.

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exhibited greater pro-sociality – including a greater willingness to help a friend, **INCREASED PARTICIPATION** in local clubs and improved knowledge of local leadership.

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## POLICY IMPLICATIONS

### According to UNESCO, 85 percent of girls in low-income countries do not complete secondary school.

Until recently, governments and funders working to increase girls' enrollment, attendance, and completion rates focused their efforts primarily on three key levers: building more schools, lowering school fees, and conditional cash transfers to families. Researchers have found that building more schools can be effective, but in many rural areas can lead to an educational model based on sub-scale one-room schoolhouses incapable of delivering high quality education. Lowering school fees and providing conditional cash transfers to families who enroll their daughters in school, which can be expensive, do not address a key barrier – the miles and miles of unpaved roads between girls' home and their school.

For policy makers, funders, and NGO leaders seeking to identify effective tools for improving girls' educational outcomes and empowerment, these findings provide support for a low-cost data-driven fourth lever for improving rural girls' educational outcomes – conditional asset transfers (bicycles) provided directly to girls.

## BACKGROUND

**WBR's Bicycles for Educational Empowerment Program (BEEP)** provides Buffalo Bicycles to students who walk more than 3km each way between home and school. BEEP aims to contribute to improving educational outcomes by making regular school attendance possible. To ensure the sustainability of the program, a community-led Bicycle Supervisory Committee (BSC) is established and trained to manage and monitor the progress of the program at each school.

**70%**

of bicycles are allocated to girl students

Seventy percent of bicycles are allocated to girl students, and bicycle recipients are selected based on distance traveled and vulnerability criteria established by the BSC and the school. Each school trains a local bicycle mechanic fix the bicycles and complete regular preventative maintenance.

Upon receiving their bicycles, students (together with their parents or guardians) sign a contract with the BSC, agreeing to attend classes regularly. The contract stipulates that if they adhere to the terms set out by the BSC, the bicycle becomes their personal property after achieving a specific learning milestone, such as graduation.



## THE RANDOMIZED CONTROLLED TRIAL AND FOLLOW UP STUDY

**Phase one of the study took place from 2017 to 2018** in the Monze, Mazabuka, and Kalomo districts in the Southern Province of Zambia. For this RCT, the cohort consisted of 2,471 female students in grades 5 to 7 (1,112 of whom received Buffalo Bicycles and 1,359 of whom did not) across 100 government primary schools (45 treatment schools and 55 control schools). Participants lived between 3km and 10km from school.

**In phase two, in 2019 and 2020**, researchers evaluated attendance and dropout rates at the treatment and control schools using data from school administrative records. It was during this phase of the research, when the girls began their transition to secondary school, that researchers identified that the dropout rate among girls with bicycles was significantly lower than that of girls without bicycles.

**“ Before the bicycle program, we had a lot of dropout cases. But as soon as this program came, the cases have reduced. Girls really want the bicycles; they don’t want them to be taken away so they concentrate on schoolwork.” - Educator, Kalomo**

**“ Before they were given bicycles, the girl would arrive from school when it was dark. There would be boys that would harass her. Now, she arrives home earlier.” - Parent, Mazabuka**



### CONCLUSION

Previous research from WBR in Colombia, Kenya, Malawi, and Zimbabwe indicates that bicycles can improve girls’ education outcomes. And research published in the American Economic Journal: Applied Economics, on programming unrelated to WBR in Bihar, India, suggests that providing bicycles to schoolgirls increased girls’ enrollment in secondary school by 32 percent and reduced the gender gap in school enrollment by 40 percent.<sup>4</sup>





## ABOUT INNOVATIONS FOR POVERTY ACTION



IPA is a non-profit organization dedicated to discovering and promoting effective solutions to global poverty problems. In partnership with decision-makers, IPA designs and evaluates potential solutions to poverty problems using the rigorous method of randomized evaluations. IPA also mobilizes and supports these decision-makers – policymakers, practitioners, investors, and donors – to use the solutions to build better programs and policies at scale.

**For more information, visit: [www.poverty-action.org](http://www.poverty-action.org)**

**For the full study visit:**

**[www.poverty-action.org/study/wheels-change-impact-bicycle-access-girls%E2%80%99-education-and-empowerment-outcomes-rural-zambia](http://www.poverty-action.org/study/wheels-change-impact-bicycle-access-girls%E2%80%99-education-and-empowerment-outcomes-rural-zambia)**

## ABOUT WORLD BICYCLE RELIEF



World Bicycle Relief partners with communities, governments, and the private sector to improve access to healthcare, education, markets, and critical government services for rural communities left behind by current development initiatives. Founded in 2005, World Bicycle Relief has already helped accelerate the journey out of poverty for more than 3.5 million people in 21 countries. When women, girls, community health workers, students, farmers, and entrepreneurs have durable bicycles, they can access the services and opportunities they need to thrive.

**For more information, visit: [worldbicyclerelief.org](http://worldbicyclerelief.org)**

1 "Reducing Costs to Increase School Participation." The Abdul Latif Jameel Poverty Action Lab, Feb. 2019, [www.povertyactionlab.org/policy-insight/reducing-costs-increase-school-participation](http://www.povertyactionlab.org/policy-insight/reducing-costs-increase-school-participation).

2 Fleisher, Chris. "Biking to a Better Future." American Economic Association, 9 Aug. 2017, [www.aeaweb.org/research/india-bihar-bicycle-girls-education-program-karthik-muralidharan](http://www.aeaweb.org/research/india-bihar-bicycle-girls-education-program-karthik-muralidharan).

3 "Wheels of Change: The Impact of Bicycle Access on Girls' Education." Innovations for Poverty Action, 2020, [www.poverty-action.org/study/wheels-change-impact-bicycle-access-girls%E2%80%99-education-and-empowerment-outcomes-rural-zambia](http://www.poverty-action.org/study/wheels-change-impact-bicycle-access-girls%E2%80%99-education-and-empowerment-outcomes-rural-zambia).

4 Muralidharan, Karthik, and Nishith Prakash. 2017. "Cycling to School: Increasing Secondary School Enrollment for Girls in India." American Economic Journal: Applied Economics, vol. 9, no. 3, 2017, pp 321-50. <https://www.aeaweb.org/articles?id=10.1257/app.20160004>