

## **KOPERNIK PROJECT REPORT - EXPERIMENTATION PROJECTS**

### **PROMOTING MENSTRUAL HEALTH - GG PAD PRODUCT TESTING**

#### **CONTEXT**

The World Bank (2005)<sup>1</sup> estimated that girls miss between 10-20 percent of all school days due to menstruation and provision of a reliable, hygienic product to handle menstruation would solve this problem. Critics say that this research relies heavily on anecdotal reports linking menstruation with educational outcomes; yet there is very little quantitative research to support these claims (Anderson, 2016).<sup>2</sup> This sentiment is shared by Oster and Thornton (2010)<sup>3</sup> who found that menstruation had very little impact on school attendance in Nepal and menstrual cups, as an improved menstrual product, resulted in no additional improvements. The Burnet Institute reports that in rural Indonesia, 17% of surveyed female students missed at least one day of school during their last menstruation period. Previous research by Annabel Buzink for SIMAVI (2015)<sup>4</sup>, analyzing menstrual hygiene management in Central Flores, Indonesia, recommended the development of sanitary pads that are easy to use, inexpensive, recyclable, and made from environmentally friendly materials.

Due to conflicting research, Kopernik wanted to better understand the situation in East Sumba firsthand, choosing to run a small-scale randomized trial with the GG Pads. We worked with female students from SMPN Satu Atap Padadita in Kampera subdistrict in East Sumba regency. Padadita is a hilly, peri-urban area located approximately four kilometers from Waingapu, the capital of East Sumba. Students at SMPN Satu Atap Padadita attend school from Monday to Saturday from 7:00am to 12:00pm with most students living in the same village, commuting to school on foot. We chose to work with middle school students believing that menstrual health management (MHM) was a relatively new concept for them, making them especially prone to menstruation-related productivity issues such as missing school.

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<sup>1</sup> World Bank. (2005). Toolkit on Hygiene Sanitation & Water in Schools: Gender Roles and Impact.

<sup>2</sup> Anderson, A. (2016). Sanitary pads and school attendance: The numbers — and what they mean. Retrieved from [Devex](#).

<sup>3</sup> Oster, E. & Thornton, R. (2010). Menstruation, Sanitary Products and School Attendance: Evidence from a Randomized Evaluation. *National Bureau of Economic Research (NBER) Working Paper No. 14853*. Retrieved from [NBER.org](#).

<sup>4</sup> Simavi. (2015). Three questions to Annabel Buzink. Retrieved from [Simavi.org](#).

## LOCATION

### PROJECT LOCATION: PADADITA, SUMBA, EAST NUSA TENGGARA



## HYPOTHESIS

Our hypothesis was that **access to reusable sanitary pads leads to better school attendance during menstruation**. We also hypothesized further that access to reusable sanitary pads has an impact on:

- a) increasing perceived menstrual comfort;
- b) reducing costs of managing menstrual hygiene;
- c) reducing environmental waste during menstruation.

## METHODOLOGY

Kopernik rapidly tests innovative solutions in last mile contexts in order to determine their potential to reduce poverty effectively. In our experiments we adopt a lean approach, collecting and analysing small-scale data to learn the effectiveness of the solutions.

### Sampling

After conducting baseline surveys, we randomly assigned 80 female students to one of the two groups, control or treatment (Figure 1). The treatment group received a trial set of five reusable pads (three day pads, two night pads) at the beginning of the study, whereas the control group received their reusable pads at the end (as an incentive to be a part of the study).

## RAPID RANDOMIZED RESEARCH METHOD

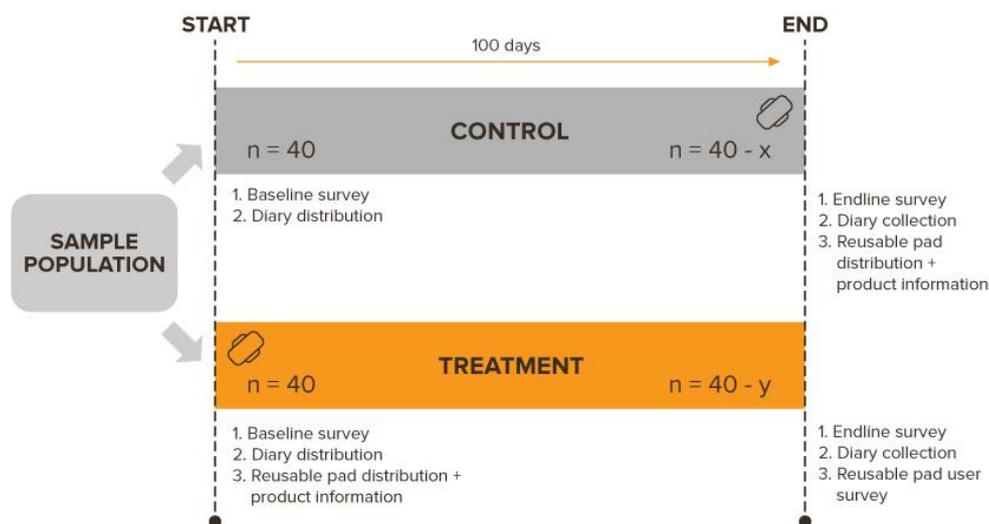


Figure 1: We randomly assigned 80 female students to one of the two groups, control or treatment

### Student Diaries

We distributed diaries and instructions to record the following variables over a 100-day period, or 2-4 menstrual cycles<sup>5</sup> per participant:

1. Average menstruation duration in days
2. School attendance on each menstruation day
3. Number and type(s) of menstrual products used on each menstruation day.

In the analysis, missing or unmarked school attendance data was cross-checked with formal attendance records provided by the school. We excluded diaries with missing data and those that recorded less than two full menstrual cycles.

### Surveys

Baseline surveys and endline surveys were conducted in guided classroom sessions to assess other qualitative variables such as perceived symptoms, menstrual product provision, product disposal habits, perceived burden and impact of menstruation on the student's productivity, main source of information on menstruation, and beliefs regarding menstruation. We also surveyed girls in the treatment group to record GG pads product satisfaction, feedback, and willingness to buy (Figure 2).

<sup>5</sup> The average menstrual cycle is 28 days long, and cycles can range anywhere from 21 to 35 days in adults and from 21 to 45 days in young teens (OWH, US Department of Health, [2014](#)).

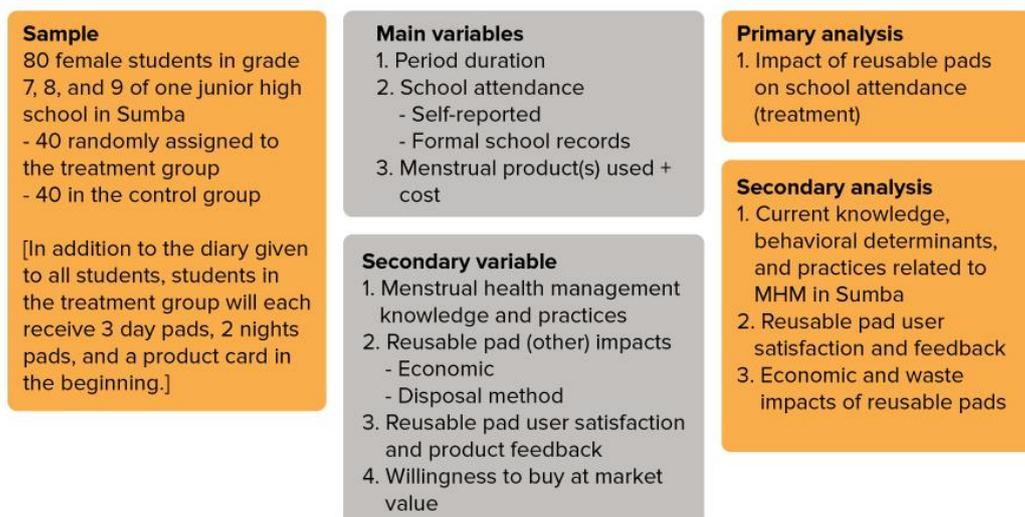


Figure 2: Methodology Summary

## FINDINGS

### Current Practice

From our baseline assessment, we gained insights into how female students manage their menstruation. Ninety four percent of the students regularly used disposable pads, 10 percent used cloths (sometimes combined with disposable pads), and an additional one percent also used pantyliners. Most students (70 percent) report that their mother is the provider of the menstrual products. An additional 11 percent list other family members (sister, father, grandmother) as providers, and the remaining 19 percent buy menstrual products with their own money.

### School Attendance

In terms of school attendance, we learnt that:

- **seventeen percent of respondents** claimed to have missed school due to menstruation, **with an average of 1.07 days of school missed during their last menstruation period;** and
- on average, the number of school days missed due to menstruation **were low for both the treatment and control groups.**

The figure of 17 percent from our study was exactly the same figure reported by the Burnet Institute in 2015. Due to holidays and weekends, the number of menstruation days that overlap with school days average to just over three days per menstruation cycle. Therefore, during our study, students in our control group missed on average 0.07 school days per menstruation cycle, estimated to amount to less than 1 day per year, and students in the treatment group missed 0.15 days per cycle or roughly 1.5 days per year. (Figure 3). These results are far below our previous assumptions and demonstrate two things:

- that attendance was not a major issue for the middle school girls in the area;

- there was no statistically significant difference in attendance between the control and treatment groups.

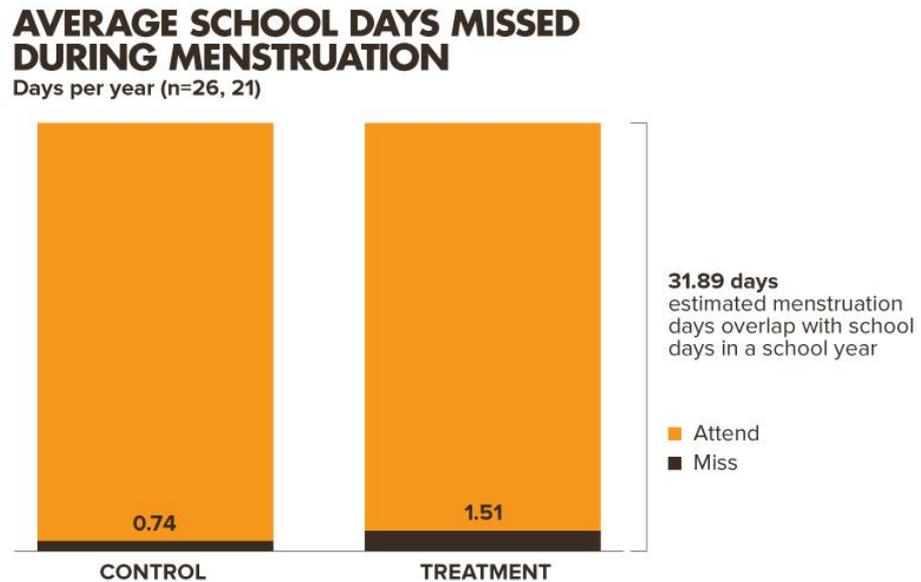


Figure 3: The number of school days missed are low for both the treatment and control groups

To ascertain whether access to reusable pads had any effect on the results, we ran a statistical test showing that the difference in school attendance between students who have access to reusable pads and those who do not is not statistically significant.<sup>6</sup>

### Menstrual Comfort

In terms of menstrual comfort, we learnt that:

- the majority of the students who used the GG pads were **“very satisfied” (38 percent) or “satisfied” (59 percent) with the reusable pads;**
- **eighty-one percent said they would use the reusable pads routinely, with 16 percent saying ‘maybe’, and three percent saying ‘no’;**
- **fifty-seven percent of respondents would use the pads routinely on account of their comfort, while seventeen percent would use them because they felt they prevented leakage and provided more security;**
- **most students (92 percent) didn’t have a problem in using the pads but half perceived a problem in the washing the reusable pad, reporting that the stain is hard to remove and the pad requires multiple washes;**
- **twenty-five percent of the students perceived a challenge in drying the pads,**

<sup>6</sup> The null hypothesis (H0): Students in the control group (CG) who do not use reusable pads, and those in the treatment group (TR) who use reusable pads, miss school due to menstruation in a rate that is not statistically different from each other.

T-Test assuming unequal variances showed that the average values of days missed as a ratio to total school days during menstruation, compared between the control group (M= 0.023, SD=0.064) and the treatment group (M= 0.047, SD=0.078), are not statistically different from each other,  $t(39)=1.124$ ,  $p=0.268$ .

particularly in drying them under the sun with other laundry items inviting unwanted attention and questions from male relatives.

## Cost Reduction

In terms of reducing the cost spent on managing menstruation, we learnt that:

- **disposable pads are readily available to these students and are also affordable**, with the cost of one disposable pad being approximately IDR1,104 (~US\$0.08) compared to one reusable pad being approximately, IDR28,800 (~US\$2.17);
- based on the treatment group usage data, we project savings of IDR35,112 (~US\$ 2.64) over two years to be achieved by students who have five reusable pads, **but this amount is unlikely to offer a strong incentive for girls to switch to reusable pads (Figure 4);**
- an upfront investment on five reusable pads used with “backup”<sup>7</sup> disposable pads will take **just under two years to pay off** when compared to current expenditure on disposable pads;
- switching from 100 percent disposable pads to 100 percent reusable pads, based on our estimates that a person needs a set of at least six pads to be able to use them exclusively<sup>8</sup>, would save IDR125,153 (~US\$9.41) over two years, again **an amount unlikely to make girls, especially those with low purchasing power, switch to reusable pads considering the big up-front investment of IDR190,800 (~US\$14.35).**

### PROJECTED COST OF MENSTRUATION PRODUCTS PER PERSON, OVER 2 YEARS

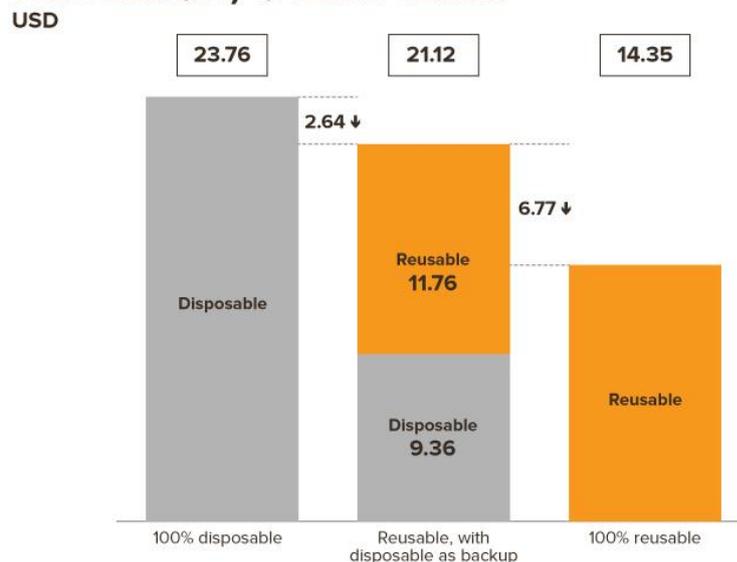


Figure 4: Cost of Menstruation Products

<sup>7</sup> This can be due to gradual adaptation to the reusable pads, insufficiency of five reusable pads, convenience, or other factors that have not been studied.

<sup>8</sup> Taking into account the girls' current usage pattern, suggested pad changing frequency, and washing and drying time.

## Environmental Waste

In terms of reducing the environmental waste from menstruation products, we learnt that:

- fifty percent of respondents flush their used menstrual products down the toilet, followed by 19 percent throwing them in the bin, 14 percent burning them and 13 percent burying them - with minimal waste infrastructure in Sumba this means **most would end up in the sewerage system likely to be flushed into the ocean, or in a landfill;**
- the introduction of reusable products, though partial, **will help the users to cut their menstrual product waste by more than half, approximately 106 kg over the student's lifetime.** A complete switch to reusable products will help users cut their menstrual product waste by 174.47 kg (Figure 5).

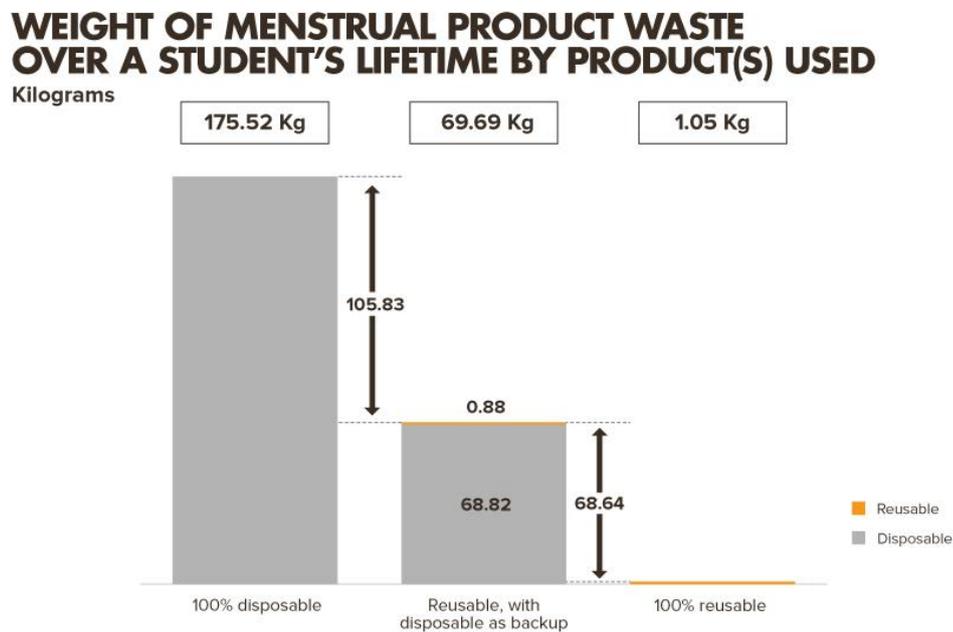


Figure 5: Menstrual Product Waste

## CONCLUSION

Our experiment concluded that there is no significant difference in school attendance between students who have access to reusable pads and those who do not. This is not due to the effectiveness of the pads, but rather the fact that attendance was not really a problem in the first place. Students typically missed between half a day to just over two days of school in a year due to menstruation, estimates that are far below what we previously assumed.

We also found that using reusable pads in fact brings very little economic savings to the users. This is due to a combination of multiple factors: low availability and relatively high price of reusable pads, the high availability and low price of disposable pads, and our finding that students supplemented reusable pads with additional disposable pads when only given a trial set of five. While a complete switch to reusable pads does bring some economic savings in

the long run, this is unlikely to be attractive to the users with low purchasing power given the big upfront investment.

Regarding waste, we projected that if a student in the treatment group continuously uses the pads (supplemented by disposable pads) and has access to the same amount of reusable pads in the future, she will cut her menstrual product waste by more than half in her lifetime.

Ninety-seven percent of all reusable pad users reported that they are “satisfied” or “very satisfied” with the product, and most students indicated they would use it routinely. However, only half expressed willingness to purchase a pad at retail price, with the other half stating price as an obstacle to switching to reusable pads. The most reported problem with the product has to do with washing and drying the pads.

### TESTIMONIAL :

*“I had my menstruation period this week and I am using the GG Pad for the first time. I feel more comfortable using this reusable pad compared to disposable pads”*

- Megawati, Junior High School Student, East Sumba

## RECOMMENDATIONS

Based on the data collected, we recommend that:

1. Kopernik tests other menstruation management products that offer more significant economic incentives and have the potential to reduce the impact of menstrual product waste on the environment.
2. Kopernik tests other menstruation management products in areas where disposable pads are less accessible locally.

## LEARN MORE

Kopernik’s Analyst from our Solutions Lab Team, Feby Ramadhani’s, [Kopernik blog update](#) covering the MHM workshop at SMPN Satap Padadita, East Sumba.

Kopernik’s Senior M&E Officer, Lana Kristanto’s, Kopernik [Insight](#) on the economic attractiveness and waste impact of reusable pads in rural Indonesia.