Concern's Gender Focused Graduation Intervention in Malawi (2018-2022): Impact on Income, Livestock Value and Consumption

1 Introduction

The "Graduation Program" is a multifaceted anti-poverty program combining multiple interventions into a "big-push" which aims to permanently "graduate" participants out of poverty. Without understanding the underlying mechanics, the success of the overall program has been established over the past decade. Existing studies evaluating the impact of the program in different contexts have consistently found significant positive effects on participants across a range of livelihood dimensions (Banerjee et al. 2015). Evidence shows that these effects may persist and even accelerate for as long as 7 years after the intervention (Banerjee et al. (2016), Bandiera et al. 2017). However, little is known about the role of gender targeting and the nuances of its impact on intra-household dynamics and gender empowerment.

Specifically addressing key weaknesses in our understanding, Concern's graduation research in Malawi was designed to discover a) whether the gender of the program recipient has an effect on the program's impacts on household welfare and gender empowerment, and b) whether additional complementary couples training on cooperation, family vision and gender roles, can play an important role to improve outcomes for women.[1]

This policy brief presents initial findings on the impact of Concern's graduation program in Malawi on household's welfare outcomes. Particularly, we examine income, the value of livestock owned and consumption as the three main household outcomes. With final data collection ongoing, we include in this policy brief data 5 months and 17 months post intervention (11 and 23 months post end of cash transfers) for half our sample. Where we find strong results, it is reasonable, but not certain, to expect that such results will not be overturned. Where we find insignificant results, it remains possible, but uncertain, that with the inclusion of outstanding data these results may become significant. It is perhaps unlikely that the ranking of the performance of treatments arms will change to any significant degree.

Our preliminary results from half the sample provides evidence on the likely catalytic role of the couples gender transformation training on economic outcomes, despite the size of the economic inputs being identical across the treatments groups. First we compare the treatment effects of each experimental arm to control, before reporting the results of the ultimate test of the relative performance of treatment arms, existence or otherwise of statistically differences in treatment effects between treatment arms. Please note when we have the full dataset our ability to detect treatment effect differences between arms will improve greatly.

First, comparing the treatment arms to the control, we find that the program had a positive impact on total income for treated households 17 months post program implementation. This is driven by higher business incomes for treated households. Umodzi households experienced 79% higher total income over the control group, while female targeted experienced 47% higher, and male targeted 26% higher.

Seventeen months post intervention, Umodzi households had 180% higher livestock asset value compared with control, while male targeted household had 140% higher livestock asset value. Female targeted households recorded 83% higher livestock asset value, although this latter result is insignificant and therefore at present indistinguishable from the control group. This latter insignificant result reflects in part a lower focus on large livestock for

[1] Concern's original Graduation consists of five core subcomponents: comprehensive targeting, consumption support of MWK 15,000 for 12 months, skills training and coaching, savings and financial access, and capital transfer.

female recipients, and the fact we only have half a sample.

Similarly we observe that total consumption 17 months post program was higher for all treated households compared to control, and that the highest average was in the Umodzi group. For the Umodzi group, we see higher consumption of both food and non-food items compared to control. We specifically find that Umodzi households experienced 25% higher total expenditure over control, while both female and male targeted had 11% higher consumption over control.

Can we say anything about the difference between the treatment arms with only half the data? Intriguingly, we already find that Umodzi households enjoyed higher, statistically proven, total annual household income compared to female targeted households that did not participate in the training. These Umodzi households also had higher total annual consumption than male targeted households. Overall these preliminary results suggest that the Umodzi group exhibited the strongest program impacts across all three outcome variables relative to the control group, and in regards to income and expenditure compared to the other two treatment arms.

As yet, with only half the sample no results have been found for differences between male and female recipient households on income, livestock or consumption. Though in another brief, we found differences in food security between male and female recipient households, with female recipients experiencing superior food security. A full dataset will reveal more on targeting.

2 Research Design

We conduct a Randomised Control Trial (RCT) of Concern Worldwide's Graduation and Gender Program in Malawi. The aim of the research is to estimate the role that gender plays in the graduation model by estimating the impact of three distinct versions of the intervention on gender empowerment and household welfare outcomes:

1. The graduation program targeted at women as the main recipient in the household (T1: female targeted)
2. The graduation program targeted at men as the main recipient in the household (T2: male targeted)
3. The graduation program targeted at women but with an additional couples' empowerment training called "Umodzi" (T3: female targeted plus training (Umodzi))[2]

3 Sample Selection

Through the use of a poverty index, our implementing partner, Concern Worldwide, identified the two districts with the highest poverty score, Mangochi and Nsanje, for implementing the Graduation program in. We identified 200 villages, 100 per district, based on each village having at least 20 households that were classified as poor through a wealth ranking or a proxy means test in the village. In addition only married households, where both partners were living together, were included in the sample.

We then randomized across villages, assigning 50 villages as pure control and the remaining as treatment villages. After our baseline in 2018, we did our next round of randomization, which involved 3 steps. First, we randomized the treatment villages into the three treatment arms. Second, in treatment villages, we randomized 12 households to receive treatment, and 6 as control households. Third, we randomized treatment and control villages into cohort 1 and cohort 2, with the first treatment cohort starting with the program in November 2018, and the cohort 2 starting in 2019. This brief focuses on cohort 1.[3]

The quantitative analysis presented in this brief is based on data gathered over two rounds, where households were interviewed twice post program completion. The first end line survey (EL1), was carried out in 2020, 11 months after consumption support has ended, and 5 months after the program was completed. The second end line survey (EL2) was carried out in 2021, 23 months post consumption support, and 17 months after the program had ended.

In cohort 1, we have a total of 1,185 households, with 315 households in the control group, 290 in the female targeted group, 291 in the male targeted group, and 289 in the Umodzi treatment group.

4 Results

4.1 Income

In evaluating the impact of the graduation program in Malawi, one of the main outcome variables is households' productive annual income.[4] Overall we find that at 5 months post program implementation, the main impact of the program was to bring about a structural change in the source of income for treated households compared to control households. One year later, these structural changes are paying off, with higher business incomes driving higher annual incomes for treated households. Mag-

[3] Control households in treated villages are not included in the analysis for this brief.

[4] Productive income includes business, wage, livestock and agriculture annual income.

nitude wise, the highest averages of business income and total income were found in the Umodzi treatment group.

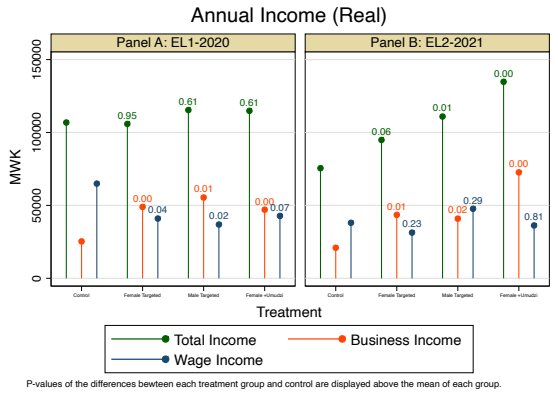

Figure 1: Impact on Income

In Panel A of figure,1, we show average income per treatment group in 2020 as reported 5 months post program implementation. We also report the p-value above the marker for each group, which tells us whether the difference in income between the control and each treatment group is statistically different.[5] We find that at 5 months post program implementation, treated households did not exhibit significant differences in their total income relative to control households. However, examining two of the main sources of productive income (business and wage income), we find that the program had an impact on the sources of the household's income.

Reflecting this structural change in income, 5 months post program implementation business income in all treatment groups was significantly higher than the control group. In the control group, average business income was MWK 25,285. In the male targeted group it was more than double that, in the female targeted group it was over 1.9 times that amount, and in the Umodzi treatment group, it was about 1.86 times that amount.

Simultaneously, treated households had lower wage incomes compared to control. Average wage income in the control group was about MWK 64,926. Whereas, it was MWK 36,866 in the male targeted group, MWK 40,966 in the female targeted group and MWK 42,751 in the Umodzi treatment group.

This suggests that treated households experienced a transition between their sources of productive income. This provides a possible explanation for the lack of difference in total income between treated households and control, whereby the increase in business income was offset by the fall in wage income.

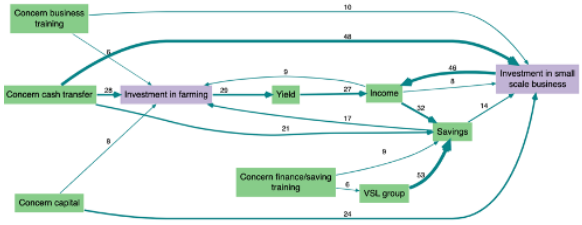

Figure 2: Channels of Graduation Impact on Income

At the time of EL1, we also complemented our quantitative analysis by conducting qualitative research through a method called the Qualitative Impact Protocol (QuIP). The QuIP mapped causal drivers of change from the perspective of program participants. Based on 96 household interviews and 16 focus group discussions from households across all treatment arms,[6] the findings suggest that a number of households across all treatment arms experienced increased income. Through the causal map in figure 2, we also get a clearer picture on the channels through which the Graduation program led to this income increase. In particular, the cash and capital transfers of the program resulted in greater investment in business and farming, which then led to a higher income for the interviewed households. From the qualitative results, one potential reason that this income increase is not reflected in the quantitative findings is because households reported that they were reinvesting their income into their business and farm activities. This result suggests that they did not see this as income, but as capital for reinvesting into productive activities.

> "The extra income is reinvested into the businesses to make them more viable." (IMAU-5)

Returning to our RCT results, when we look at Panel B[7] of figure 1, it is clear that 17 months post program implementation, the program had a positive impact on treated households' total annual income. Total income was significantly higher in each of the three treatment groups compared to the control group. The highest average was of the Umodzi treatment group, MWK 134,772, about 1.8 times that of the control. This is followed by average income in the male targeted group, MWK 110,943,

[5] A p-value less than 0.1 reflects statistical significance at the 10% level, a value less than 0.05 indicates significance at the 5% level, and a value less than 0.01 indicates significance at the 1% level.

[6] The qualitative research occurred 1 month after EL1 data collection. The qualitative research also includes households from cohort 2

[7] Panel B shows income per group in 2021 as reported in EL2, 17 months post program implementation.

and in the female targeted group, MWK 94,870. We run separate tests to check whether the differences between treatment groups are significant and find that for overall income, the female plus Umodzi arm generated more annual income than the female targeted households and we can reject that this difference is equal to zero.[8]

We can also see that the effect of the program on business income 5 months post program implementation is sustained 17 months post program implementation. Business income in 2021 was still significantly higher in each of the three treatment groups compared to control. In the Umodzi group the average was MWK 72,625, about 3.5 times that of the control. In the female targeted group it was about 2 times that of the control's, and in the male targeted group it was about 1.95 times that of the control.

The difference 5 months post program implementation (compared to 17 months post program implementation), is that higher business incomes were not offset by a lower income from wages. In fact, differences in wage income between each of the three treatment groups and the control group are not statistically significant (not distinguishable from zero).

The within treatment arm effects helps us identify that the main mechanism driving higher annual income for female plus Umodzi households, compared to female targeted households, was business income. We find that female plus Umodzi households had a greater increase in their business income compared to female targeted households.[9] While female targeted households also generated higher business income than male targeted households,[10] this did not reflect in an overall income difference with male targeted households as female targeted households had lower (but not statistically significant) incomes generated from the other productive income streams.

4.2 Livestock

Livestock represents both a future income stream and a store of wealth to realise in time of need. [11] Our main finding is that the graduation program had a positive impact on the total value of livestock owned by male targeted and female plus Umodzi treated households. The positive impact on livestock value persisted 17 months post program implementation. These results are insignificant for female recipients, reflecting a lower focus on large livestock for female recipients, and potentially the fact we only have half a sample. Complementing this, we find that the program also had a positive impact on all three livestock types owned in the male targeted group and in the Umodzi group, representing a healthy diversification of income streams and asset types.

Figure 3, shows average total livestock value per group at baseline, end line 1, and end line 2. In addition, above each time period for the treatment groups, the p-value is reported, informing us whether the difference in the treatment and control groups total livestock value is statically significant. In figure 3, we find the expected balance at baseline in the average value of total livestock in each of the treated groups compared to control. Looking 5 months post program implementation, we see that for both the male targeted group and the Umodzi group, the total livestock owned was over double that of the control group. Whereas, differences between the female targeted group and the control group were not statistically significant.

Seventeen months post program implementation, it is only the Umodzi group that was able to further increase the livestock gains from end line 1. However, we still observe the significant differences in the male targeted group. The average Umodzi household owned MWK 44,211 of livestock, which 2.7 times what the average control household owned. In male targeted group, the average is 2.4 times that of the control group.

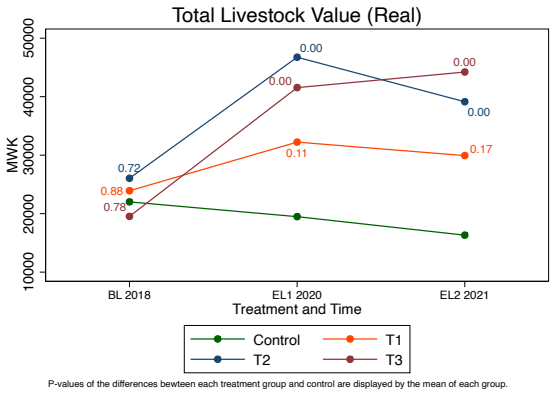

Figure 3: Impact on Livestock

To better understand the program's impact on livestock owned, we explore the different types of livestock owned by households in each group. This allows us to be more specific on impacts on different types of livestock.

In Panel A of figure 4,[12] we demonstrate that at 5 months post program implementation, the program had a positive impact for all treatment groups in terms of the value of small livestock owned. The average value in each treatment group was more than

[8] There is a difference of MWK 39,901 in the two coefficients and the p-value is 0.02

[9] p-value of 0.035

[10] p-value of 0.025

[11] This is the total value of all livestock owned by the household, including small livestock (e.g. goats/pigs), poultry(e.g. chicken), and cattle (e.g. cow).

[12] Panel A shows the value of each type of livestock owned per group 5 months post program implementation.

double that of the control group for small livestock. We can also see that the average household in the male targeted group owned MWK 7,179 worth of poultry, which was over 1.5 times what the average household in the control group owned.

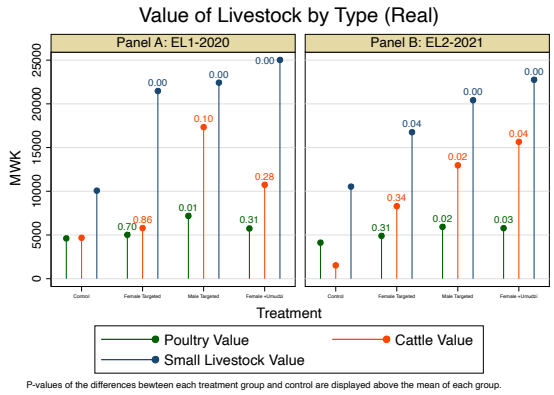

Figure 4: Impact on Livestock Components

Seventeen months post program implementation, we demonstrate that the program had a positive impact on all three types of livestock owned in the male targeted group and in the Umodzi group (see Panel B of figure 4,[13]). The value of small livestock in these two treatment groups was about double that of the control group; and the value of poultry was about 1.4 times that of the control. We also find significant differences between the total value of poultry owned by the Umodzi group and female targeted households.[14] The striking difference is in the value of cattle. The average value of cattle owned in the Umodzi group was worth MWK 15,648, which is over 10 times that of the control group. In the male targeted group it was MWK 12,964, which is over 8 times that of the control. As for the female targeted group, only the value of small livestock owned was significantly higher (1.6 times) compared to the control group.

4.3 Consumption

Next, we look at the impact of the graduation program on the households' total annual consumption.[15] Overall, we find that at 5 months post program implementation, the program has a positive impact on the total consumption of all treated households, compared to control. Moreover, we find that the treatment type seems to affect household's specific consumption patterns. By 17 months post program implementation, treated households still have higher total consumption compared to control households, however, it is only the Umodzi group that was able to sustain the prior gains made in consumption.

In figure 5,[16] we illustrate at baseline, total consumption was around the same level in each of the four groups, with differences not being statistically significant (not distinguishable from zero).[17] At 5 months post program implementation, total consumption in treated households was significantly higher than that in control households. Average consumption in each of the three treatment groups was higher than the control by at least 20% of the control group's average of MWK 342,978. We find no differences between treatment arms in regards to impact.

However, 17 months post program implementation, we see that the size of increase in average consumption achieved 5 months post program implementation is only sustained in the Umodzi treatment group. In this group average expenditure is MWK 415,225, which is 1.25 times that of the control group. In the female targeted and in the male targeted groups, averages fell from their respective levels 5 months post program implementation but remained higher than that of the control group.

These gains made by the Umodzi households also result in within treatment arm effects, as we find, 17 months post program implementation, positive and statistically significant difference between Umodzi and male targeted households.[18] While Umodzi households also had greater consumption than female targeted households, with a p-value of 0.056 we narrowly fail to reject that this difference is statistically significant to zero.

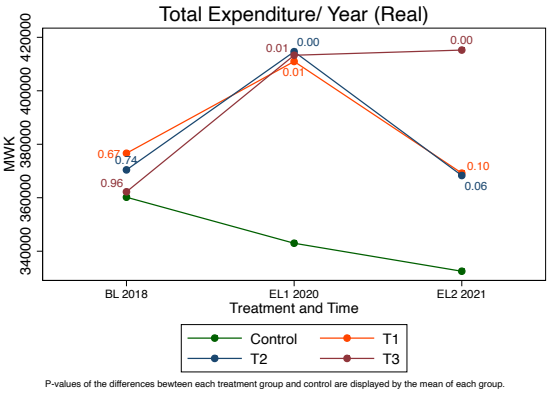

Figure 5: Impact on Total Expenditure

[13]Panel B shows the value of each type of livestock owned per group in EL2.

[14]The difference in size of impact is MWK 827, the p-value is 0.008

[15]Total consumption is the sum of all yearly expenditures on education, illness, food, non-food and festivals.

[16]Figure 5 shows average total household consumption per group at baseline, 5 and 17 months post program implementation.

[17]In fact this is validation of the expected balance at baseline across groups given the nature of the research evaluation being a randomized control trial.

[18]There is a difference of MWK 46,925 in the two coefficients and the p-value is 0.025

To gain further insight about the program's impact on households' consumption patterns, we breakdown households' total consumption into food consumption versus non food consumption.

Looking at Panel A of figure 6,[19] 5 months post program implementation, only the female targeted and the male targeted treatment groups have higher food consumption levels compared to control. Households in these treatment groups spend an additional 20% of what the control group's average household spends on food. In contrast to food consumption patterns, looking at non food consumption, we find that only the Umodzi group had a higher average compared to the control group. The average non food consumption in this treatment group was MWK 83,955, 5 months post program implementation, 1.37 times that of the control.

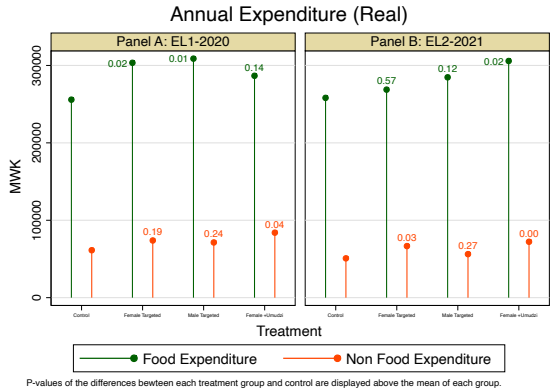

Figure 6: Impact on Expenditure Components

In Panel B of figure 6, [20] we demonstrate that 17 months post program implementation, only the Umodzi treatment group has significantly higher consumption averages for both food and non food items in comparison to control. The average consumption on non food items in this group is 1.42 times that of the control. This group also had significant higher food consumption compared to the male targeted group. The female targeted group only exhibits significantly higher non food consumption compared to control, with no significant differences in food consumption. The male targeted group does not exhibit any significant differences in food consumption nor in non food consumption compared to control.

[19]Panel A shows food consumption and non food consumption per group in end line 1.

[20]Panel B shows food consumption and non food consumption per group, 17 months post program implementation.

5 Conclusion

We show that our findings are consistent with the existing literature, emphasizing the positive impact of the Graduation program on treated households' income and consumption. Overall, in regards to income, we find that initially the main effect of the Graduation was a structural change in income sources for treated households. A year later, this structural change translated into higher total incomes for treated households compared to control, driven by higher business income. We also find significant between treatment group effects for the Umodizi versus female targeted groups.

In terms of the total value of livestock owned, we found that the program had a positive impact for the male targeted group and the Umodzi group. As livestock are an asset, the higher value of livestock owned by these treatment groups is relevant for households' welfare since it may act as a potential source of income in the future, and/or as a tool to manage any income shocks that may arise.

In regards to consumption, we find that the Graduation increased consumption for all treated households, though only the Umodzi treatment group was able to maintain the increase in consumption enjoyed in the early months post program completion. The gains made by this group is also reflected in within treatment arm effects between Umodzi and male targeted households.

Overall, our findings show that the Umodzi households had the largest gains compared to the control group, as well as compared to the other treatment arms in some of the welfare outcomes.[21]

References

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[21]It is important to note that the analysis discussed in this brief was based on one of the two research cohorts of this study, and therefore, results may change once the full sample is examined.