Dear Editor,

We would like to thank you for your decision to let us revise and resubmit. We found the comments made by the reviewer very constructive. We fully agree that the paper was focusing too much on the technical aspects of identification and paying too little attention to the story and policy implications behind the results. In the light of this, we substantially reworked the article.

For instance, the third section makes the case for our instruments. Using the literature, it carefully documents the direct causal link between the gender of the child (in particular boy preference) and fertility behavior. We thought about merging this section with other sections (or even deleting entirely), as the reviewer thinks there is already enough justification of the instruments, and the instruments are convincing enough. However, we decided to keep this section as a stand alone section for two reasons. First, this article aims to establish a causal relationship based on instrumental variables at the identification strategy. Such studies tend to stand or fall with the validity of the instruments. It is therefor important to make a strong case for its validity. Second, comments we received on earlier versions of the paper and during presentations of our work suggested not everyone is so convinced about the validity of the instruments in the context of Uganda. Still, to reduce the space allocated to justifying the instruments, we have shortened or deleted discussions on the instruments in other parts of the text (eg. the introduction).

In the section that describes the data we are using, there was again an extended subsection that made the case for the validity for our instruments empirically. In the light of the comments of the reviewer, we have removed this as a separate sub-section, shortened it and added it to the general discussion of the data we are using.

We now also dig deeper into our findings and present a broader range of research in the literature review. For instance, we also include papers that study the well documented productivity gap between men and women owned or managed plots. Some of these studies are mentioned in the literature review, and some of these studies are referred to in the results section, to compare to our findings.

In the results section, after each core finding we now reflect on why this finding is important and relate it to wider literature. We also reflect on policy implications. For instance, the finding that especially adult women's time in agriculture is reduced due to fertility is related to the literature on time poverty and policy implications are discussed:

“These findings are in line with what others have found, both in developed countries in general and in developing country agriculture in particular. For instance, in their study on labor supply response to fertility in the United States, Angrist et al also found that women work less while men did not alter their labor supply in response to having more children. Kim et al found that Indonesian women reduced their working days in response to the higher fecundity in both rural and urban areas. It supports the view that male and female labour are far from perfect substitutes within the household. This contributes to income inequality between men and women. This may also point to inefficient allocation within the household, where too much labour is proided to male managed plots and too little

to female managed plots, resulting in aggregate productivity losses (Udry). Our analysis clearly shows how fertiltiy increases time poverty, a process whereby asset poverty and time constraints may reinforce each other through difficult tradeoff that (mostly women) have to make (Bardasi et al). For example, the trade-off a mother has to make between caring for children and tending to her farm may have important implications for food security of the household and nutrition of the children. Women's time poverty may also restricts women's and children's ability to expand their capabilities (Arora).

For policy, the above means that efforts known to reduce fertility, such as education, basic health provision and family planning, are likely to reduce the time pressure for women and increase labour allocation to agricultural activities. In addition, policies that reduce the time burden due to reproductive activies are likely to work as well. For example, organized child care, where economies of scale are obtained by bringing a group of children together to be cared for by one person at peak hours could increase time available for agriculture for women. Inovations in agricultural technolgy should focus on time saving innovations that can be effectively used by women. Inovations beyond agriculture that target women and reduce time spend on reproductive chores should also be effective in increasing time in agriculture. Women who face competing claims of time are also likely to benefit of basic infrastructure, such as clean water provision and basic health care."

We also reflect on the importance and policy implications of the finding that fertility affects especially land preparation and weeding:

"The above suggests that fertility affects especially women's time allocated to land preparation and weeding in a negative way (since male time allocation does not change significantly as we have seen before). Harvesting seems to be less related to family size. Probably, when crops are ready to be harvested, farmers are more likely to put in the extra effort regardless of family size. This seems to be less evident for work that has an uncertain payoff in the future, such as weeding. A reduction in time allocated to weeding is likely to affect productivity, as weeds compete for sun and nutrients in the soil. Reductions in time allocated to land preparation, on the other hand, are likely to result in lost production. For instance, crops that require thorough land preparation may not be cultivated, or in smaller acreage.

Policy should thus focus on the promotion of adapted technologies that focus on the two activities that are affected by fertility, such as labour saving technology for land preparation. However, policy should carefully contemplate the gender consequences of the proposed technology. For example, promoting oxen traction for land preparation is likely to increase time pressure for women even more. It is therefore important that tools and technology to help in land preparation and weeding can be used by women. Equally important is that extension and training with respect to these technologies is targeted towards women. Norms and customs also play a role in what agricultural activities are done by whom, even though the exact paterns are very context specific (Deere). As such policies that aim to change gender norms and customs can affect the time allocation between different agricultural activities within the household. "

And we also underscore the importance of the finding that fertility has an effect on the crop mix within the household:

“These results are again in line with Ali et al, who find significant differences in cropping patterns between male and female managed plots. They find that female managers cultivate more roots, pulses and oilseeds, while male managers are involved more in the cultivation of cerials, bananas and cash crops such as coffee. Taken together with our results, this suggests that for bananas, this gender difference may be related to time constraints that result from high fertility. For roots and tubers, on the other hand, it seems the fact that Ali et al. find female managers cultivate more of it should be attributed to factors other than fertility, such as for example preferences. Matooke, as opposed to the other corps we included in the analysis, is a perennial crop. This means that matooke requires some foresight and planning. Sweet potatoes could be labeled a women crop in Uganda. This was already clear from Figure fig:Average-hours-worked. The figure also shows the share of female labor in land preparation for sweet potatoes is relatively high. The previous finding that land preparation suffers substantially as a result of fertility is thus consistent with the finding that larger households are less engaged in sweet potato growing.

The above has far reaching consequences. Matooke comes in bunches that can be kept for a while and can be harvest throughout the year (about one and a half years after planting). This means that households that cultivate matooke, with some planning, can have an almost constant source of food, resulting in relative food security. Sweet potatoes is the prime source of vitamin A in Uganda. Children with vitamin A deficiency are at increased risk of severe morbidity from common childhood infections such as diarrheal diseases and measles, and in cases of extreme deficiency, can go blind. The findings thus highlight the need to make sure that households with many children are food secure throughout the year. In addition, policies to promote nutritious foods should target large families to compensate for the lower probability that they grow sweet potatoes.”

A final suggestion would be to put the material that is currently in the appendix not in the paper itself, but as additional material on the journal's website. However, I will leave it to the editor as we do not know what possibilities or policies exist.