Referee report on "*The (perceived) quality of agricultural technology and its adoption: Experimental evidence from Uganda*"

Summary of the paper:

This paper aims to study how the (perceived) quality of agricultural technology affects its adoption. They are using maize seeds embodying genetic gain as a case and randomly train agro-dealers in how to conduct simple tests for quality of the maize seeds and study whether under-adoption by farmers is caused by low quality due to sellers' lack of knowledge about proper storage and handling. In a second hypothesis, they randomly inform the farmers and the agro-dealers with information on how the farmers rank the quality of seeds at the different agro-dealers. The authors find a positive impact from the clearinghouse treatment that works primarily through changing farmers' perceptions of quality and they find no impact from the training intervention.

Understanding why farmers in low-income countries are under-utilizing high quality agricultural products is a pressing and important topic. This paper implements two treatment arms using factorial design to test whether farmers and agro-dealers change their behaviour for using high-quality seeds. However, the paper has some issues, and I will comment on those below.

Main comments:

- The main concern relates to the fact that the authors do not measure the quality of the agricultural product (the maize seeds). They use the word "quality" already in the title and talk about observing how farmers adopt more high-quality products, but then they do not measure the quality of the seeds. They measure observable quality by looking at the date on the package, moisture, etc., but there is no real quality check. Hence, we do not know whether the agro dealers sold bad quality products to start with. They found that the moisture levels, on average, were 13.6% at baseline, which is just above the 13% threshold for excessively high moisture levels. As the paper is written today, it does not study what it purports to study – farmers and agro-dealers switching to high quality maize seeds following training and information. Therefore, the authors must rewrite the paper and be upfront with what they are measuring – output, perceptions, and preferences for agro-dealers but not measure of quality of seeds.
- The authors find an impact of the clearinghouse treatment arm, where they have asked farmers to rate different agro-dealers and then provide this information to other farmers and dealers so everyone is aware of the farmers' perceptions of the different agro-dealers. They find that at endline, farmers in the clearinghouse treatment arm are more likely to use improved maize, and they have higher yields. However, the authors cannot credibly say that this is because the agro-dealer sells better quality seeds or has improved their seeds. Another explanation for this result is that these agro-dealers now have more customers (they find that they have 31% more customers, 6 more per day). This implies that the dealer sells off their seeds faster (the seeds are stored for a shorter period of time in a humid and hot climate), and therefore, the yield increases. This has nothing to do with the dealer changing the quality of the seed; it is only because the seeds are sold faster due to higher demand. This is a different channel from the one discussed in the paper.

- The clearinghouse treatment is also a mixed treatment where both buyers and sellers are informed about the ranking of the agro-dealers in the vicinity. The authors cannot say whether it is information to buyers or sellers that is important for the impact.

Smaller comments:

- Attrition was 14% at the endline of the agro-dealers. Did they attrit because they exited the market? Were these the worst-rated farmers that exited?
- Please test whether the attrited sample is different from the non-attrited sample in baseline characteristics.
- Compliance with treatment was 84%. They could try to estimate TOT to study the impact on those who actually were treated.
- Joint f-test on the balance tables (both agro-dealers and farmers).