Indonesia - Area inquiry vs. GPS analysis, Exploratory Analysis

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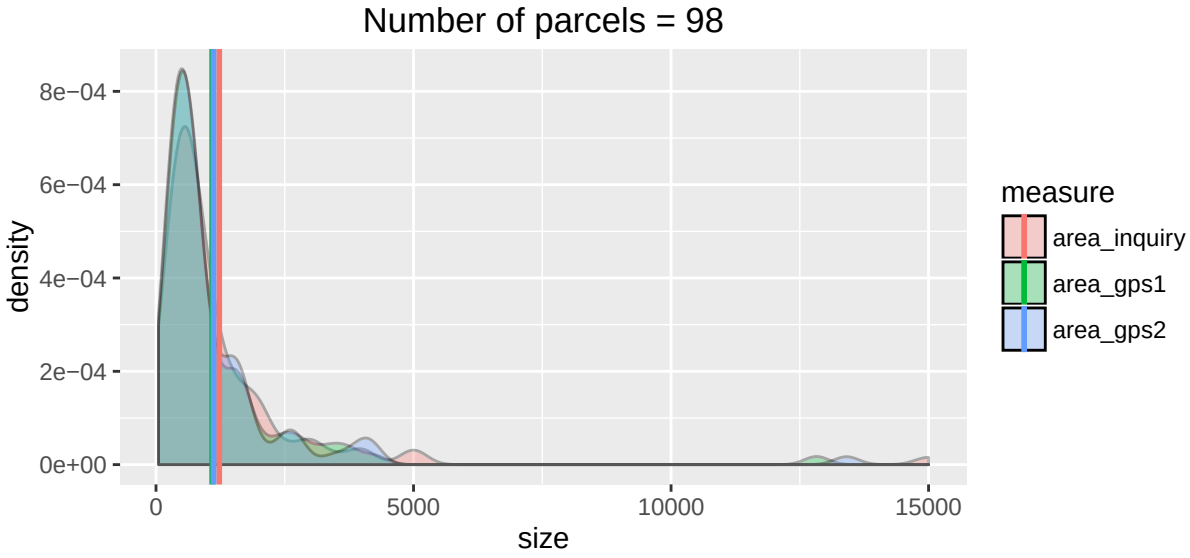
Details of Sample in Gunung Kidul

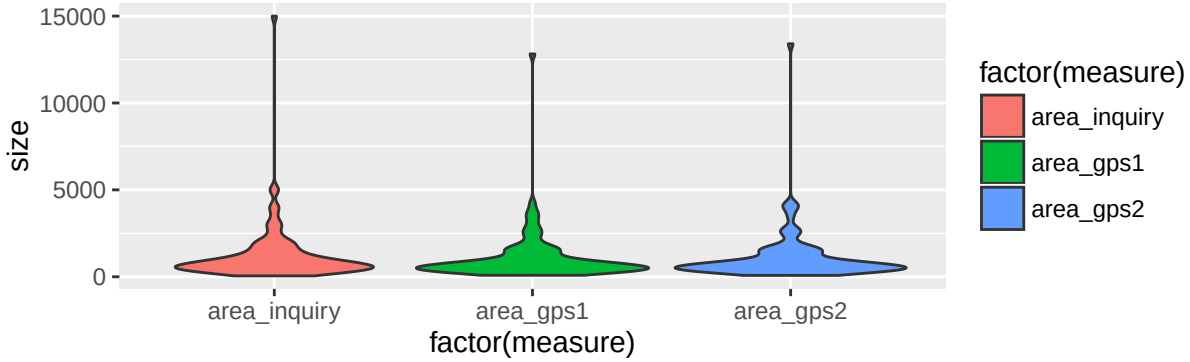
The total number of households surveyed was 201. These households owned 309 parcels and had an average number of 2.8197674 family members. On average, 2.2674419 family members were involved in agricultural.

The number of households sampled to receive both farmer inquiry and gps area measures were 81.

The density plot below shows the distribution of parcel sizes comparing area measure with GPS (area_gps1, area_gps2), and farmer inquiry (area_inquiry). The vertical line indicate the means of the distributions. The distribution for area_inquiry is slightly to the right of the gps area distributions and the mean of the farmer inquiry variable is slightly to the right signaling a positive biase.

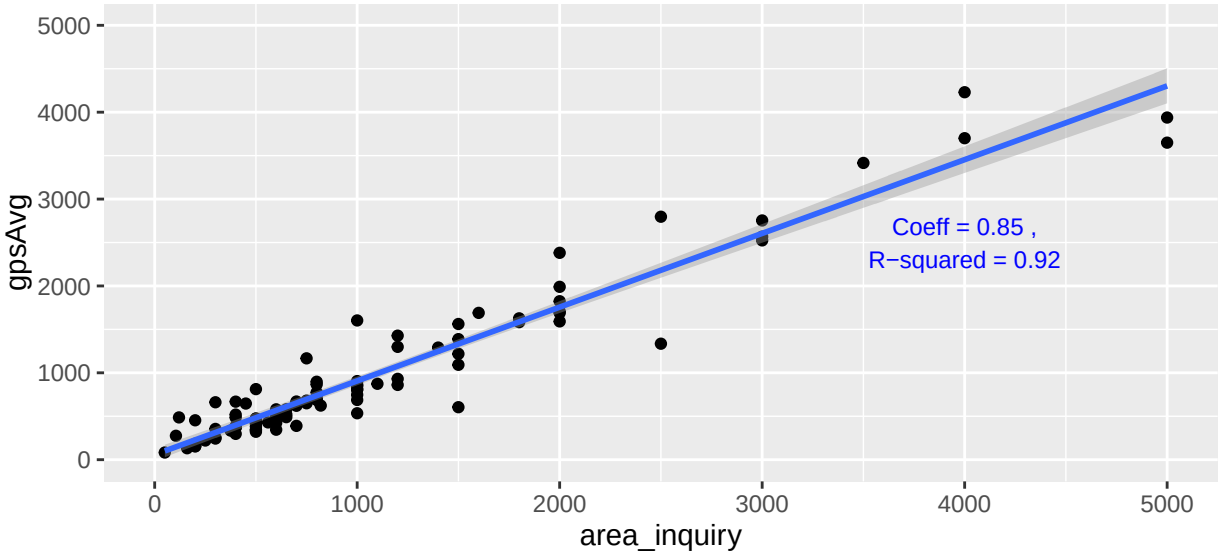


The range of plot sizes provided by farmer inquiry is larger than the gps area measure. However, it seems for smaller plots, the variation in plot size given by gps measure is higher than farmer inquiry.

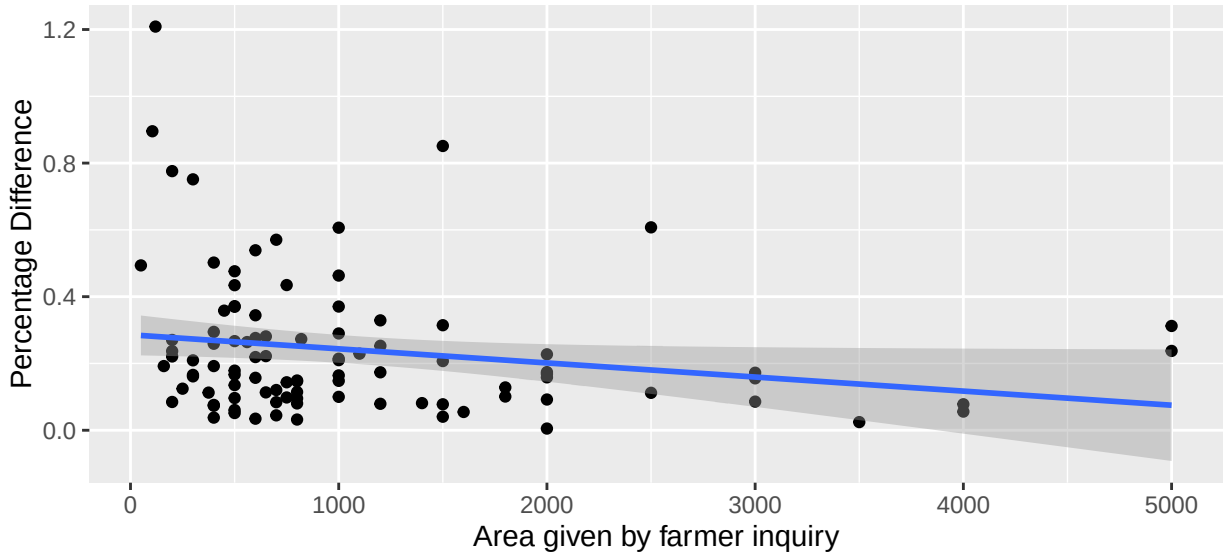


Comparision: farmer inquiry, gps measure, and percent difference

There is strong positive correlation between the average gps area measure and results from farmer inquiry.



The *percentage difference* between the average gps measure, and area given by farmer inquiry was computed. The graph below signals that there is a slight negative relationship. In other words, as the plot size increases, the percentage difference between the gps area measure and the area obtained through farmer inquiry decreases.



Preliminary conclusions

- On average, there is a slight upward biase in area measurement collected by farmer inquiry compared with gps.
- There is a slight negative relationship between the plot size and percentage difference between the gps and farmer inquiry method.
- The variation in plot area for small plots is higher using gps than farmer inquiry.