Readme simulation

Author: Garima Sharma [Edits from Guillermo Palacios]

1. Simulating equilibrium effort for a given alpha:
   1. A fixed point (equilibrium effort vector) is the effort vector that, when put in to calculate deu/de, is equal to deu/de that comes out i.e. f(e)=e, where f takes e as argument and returns deu/de
   2. Code:
      1. Read *pseudocode\_effortupdater* to understand how it works for a given value of alpha
      2. Code that performs (i) & calculates difference between 0.049 & avg. equilibrium effort for given 2\*alpha: *moment\_calculatorr\_nopar*
2. Minimizing moment condition to find alpha
   1. We want to estimate appropriate alpha to match with empirical observations, i.e. avg. equilibrium effort = appropriate value from table 2 of paper (0.049 for y1).
   2. Code:
      1. For a given 2\*alpha, code that calculates the absolute difference between 0.049 & avg. equilibrium effort (i.e. the moment condition) is given in: *moment\_calculatorr\_nopar.m*
      2. We try different values of 2\*alpha to minimize the moment from (i) above (using gradient descent built into the lsqnonlin function): *min\_`knowledge\_assumption’\_y1\_u1.m*
      3. Note: what this returns is 2\*alpha, and we just divide by 2 to get alpha.
3. Uniqueness:
   1. Of equilibrium effort: For the moment-minimizing 2\*alpha found above, we run the equilibrium effort-finder 100-1000 different times. We then plot the standard deviation as a % of mean effort for each person. On average this is <2%.
   2. Of alpha:
      1. Different starting guesses for 2\*alpha yield the same moment-minimizing 2\*alpha: Transfers paper/simulation\_results/robustness\_consolidated/alpha/different\_starting\_alphas/older\_0\_048
      2. Plot: plot |avg. effort – 0.049| near the found 2\*alpha.
         1. *robustness\_consolidated/alpha /plots*
4. Creating table 4 & histograms:
   1. Note: We want to use avg. equilibrium effort over 100 runs (i.e. starting from 100 different starting points of effort) as the dependent variable: the files for this were created in 3(a) above when checking for uniqueness.
   2. Do files:
      1. To calculate average effort over 100 iterations + create corresponding csvs: *Data/Do Files\Transfer simulations/average\_effort\_multipleiters*
      2. To create histograms: *TP Analysis\Do Files\Paper/simulation\_histograms\_avgeffort*