<https://www.sciencedirect.com/science/article/pii/S0040162520310799>

network collaboration lead to decrease in innovation

background: based on the second half of inverted U curve, initiated with every one is innovating to achieve level off state. How long does it take to achieve leveling off state(first firm enter it), then how long does it take for market innovation stop.

study how the network influences(avg node degree, network effect)

avg node degree 3, 8, 3

network effect: 0, 0.05, 5

ability to catch up(innovation gap),influences these two states. 10,60,6

With additional elements controlled for better simulate various conditions:

Number of firms(fixed at 50?) fair number and does not influence simulation much,

Baseline success probability: industry level innovation difficulty: 0.25, 0.75, 3

Initial TAR distribution: simulate different market initial conditions, would influence first stage a lot: normal, left skewed, right skewed

Innovation outcomes:

TAR improvement, speed of catching up/leveling off, 2,10,3

Success prob adjustment(simulate the resources available’s change due to pervious step’s outcome). Small firms may do not have enough money to invest. Large firms may see this as a negative signal for future profiting therefore decreasing investing in next step. 0.02,0.15,3

Benefit of using median in innovation decision making: connecting with TAR ranking, higher ranking, firms more likely to level off to “monopoly”. Also, with low TAR firm leaving the market, becoming inactive, the median of the market TA been pushed up, forcing firms to keep innovating in order to continuing staying in the market. This simulate the real business situation well.

I assign same TAR increment for successful innovation since it already differentiated by existing ranking, the higher the ranking/ technology advancement, higher difficulty to advance further.

ability to catch up in industry level: how it change the speed of