Geographical Concentration of Inter-Organizational Collaborations

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Discussion: Yukako Ono

Research Question

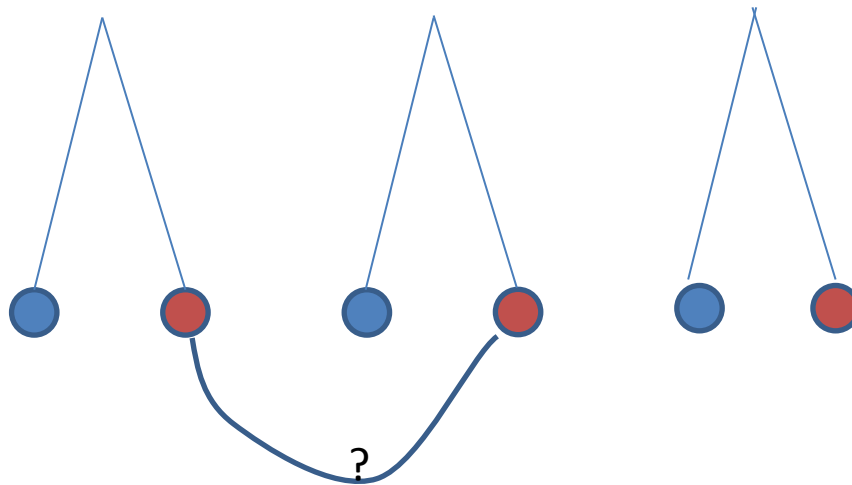Does geographical proximity enhance knowledge spillover?
- Focus: spillover through Inter-organizational (estab) collaboration
  - The authors consider this as a Source of implicit knowledge spillover
  (cf. Explicit knowledge: patent citation)
  - Do Inter-org collaborations occur b/w orgs located close to each other?

- Knowledge spillover
  - External economies => agglomeration/localization
  - Collaboration => Does knowledge spill? External economies? => pecuniary agglomeration/localization economies
    - Better to specify what "implicit" means?

  - Patent citation vs collaboration
    - Helpful to consider a mechanism behind a firm's decision for collaboration
      - Patent citation: it is possible to cite a patent applied far away. Yet we find localization
      - Collaboration: requires firms to be physically close by

Data and Method

- Data: Patent data (1993 to 2010)
  - Include all the patents
    - Inventor (address): organization/establishment
    - Assigner (name and address): firm
- Method
  - Focus on bilateral distances b/w collaborating orgs
    - Relative density:

      $$\frac{\text{Density of bilateral dist b/w collaborating org w/ a particular-class patent}}{\text{Density of dist b/w the pairs randomly drawn from all the orgs w/ a particular-class patent}}$$

  - A collaboration may involve two or more orgs
    - What is the distribution of the N of collaborators per patent?
    - How does the distribution of an average distance for a group look like?
      - Is it possible that the collaboration localization found here reflects a small number of group consisting many closely located estabs?
    - Max dist, weighted avg dist, etc ➔ How does a collaboration group is formed?
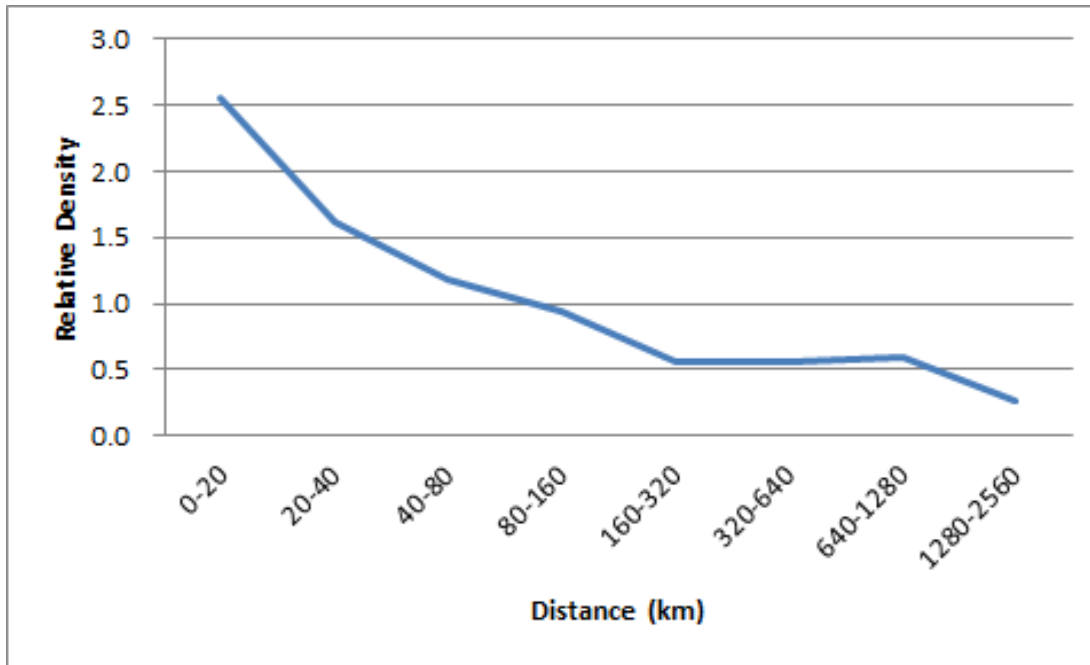   - Distance to HQs (address of assigner)

- Potential pairs
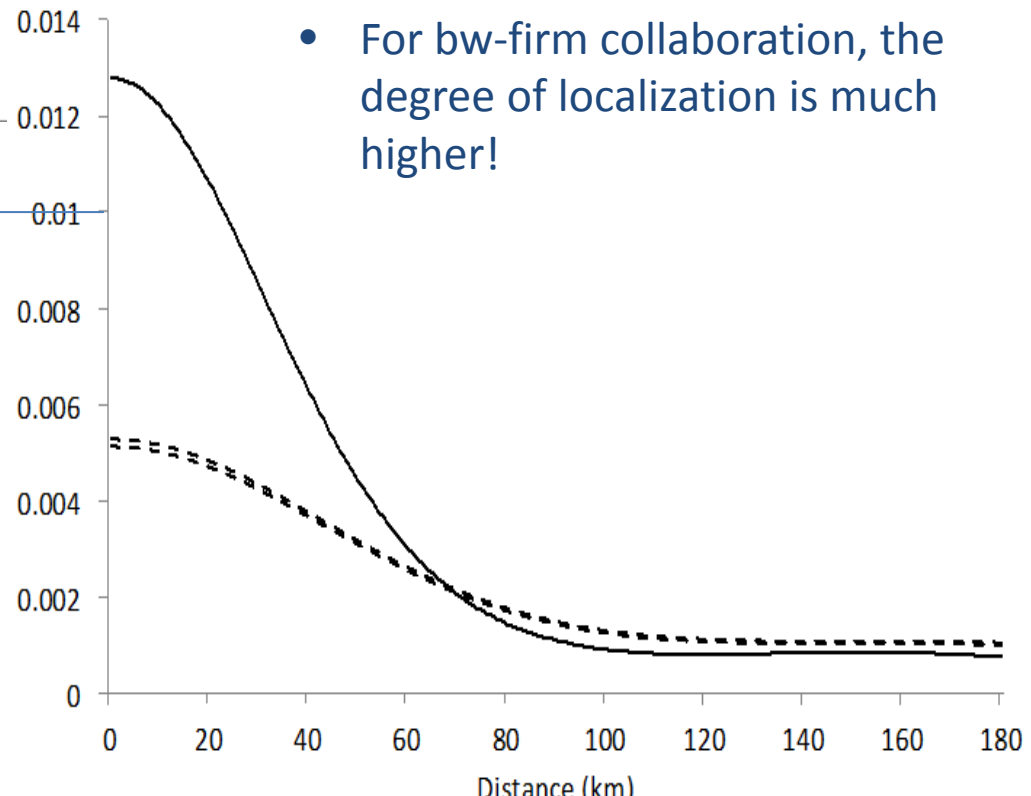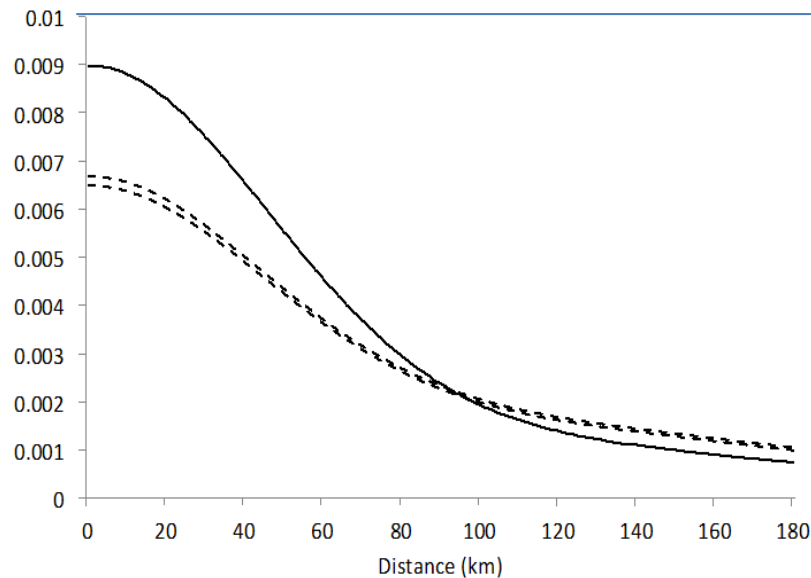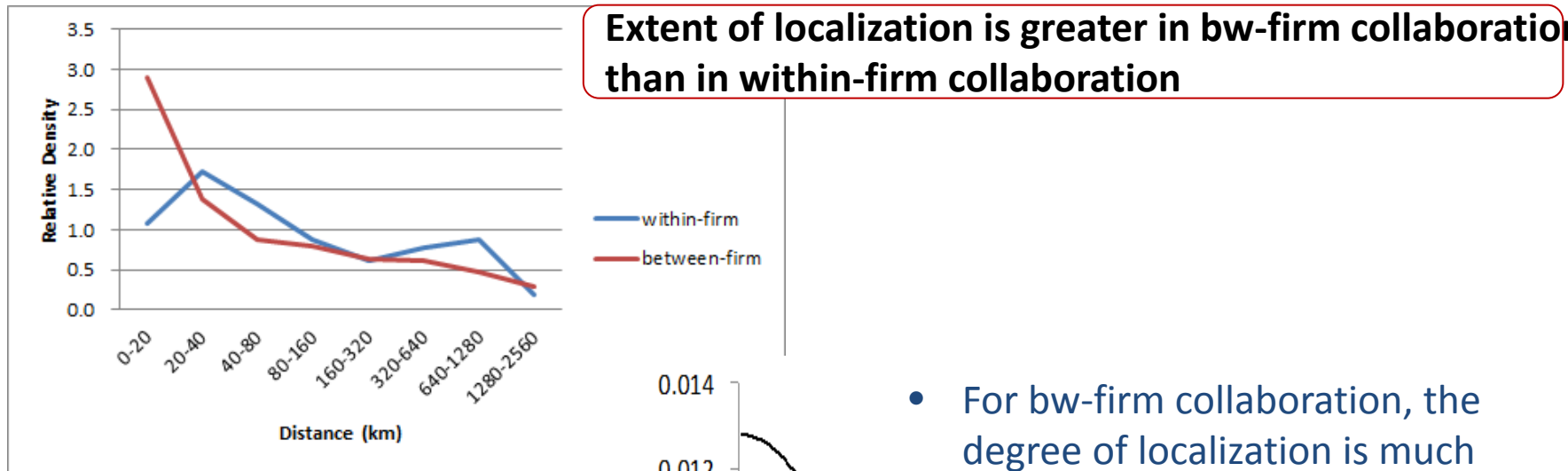 - How about taking into account the difference in industry b/w orgs?

  - To the extent that the same-ind estabs are localized, incorporating this would strengthen their results
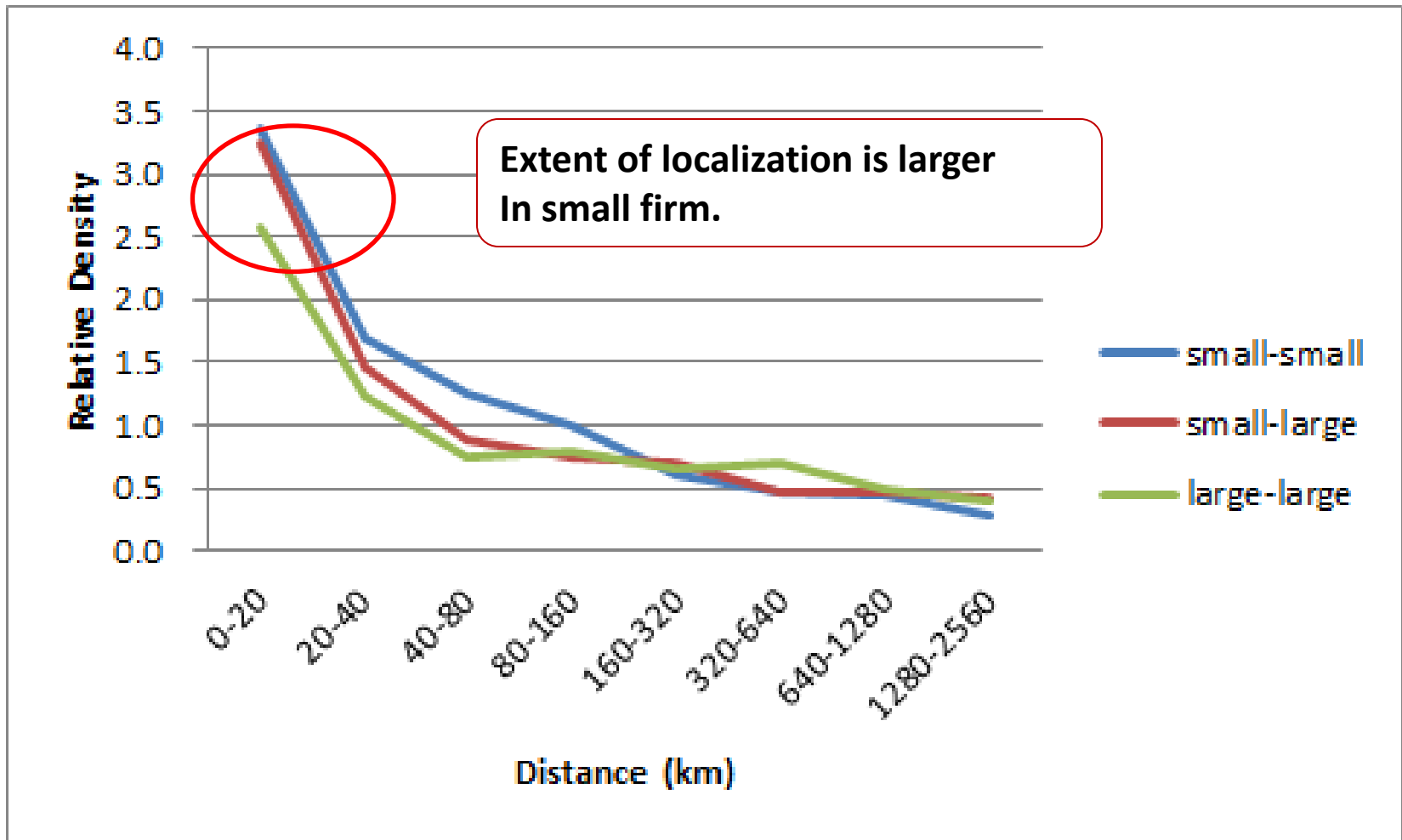
Finding: Collaboration distance (relative density)

- "Localization degree" (by Duranton & Overman) also supports that the collaboration is localized!

- Implicit knowledge spillover ➔ Agglomeration?
  - From the authors' findings, we cannot discuss causality
    - Firm location: endogenous?
      - Does a firm locate its estab closer to potential collaborators?
      - Does a firm assign a particular innovative project for the estabs close to each other?

Finding: Within-firm vs bw-firm collaboration: Firm border effects

Extent of localization is greater in bw-firm collaboration than in within-firm collaboration

- For bw-firm collaboration, the degree of localization is much higher!

- Greater localization degree for bw-firm collaborations
  - What to take out from here?
    - Is geographical proximity required to overcome a firm boundary?

  - Within-firm collaboration
    - Reverse causality?
      - Does a firm chose geographically close locations for the estabs to collaborate?
      - Still, support the idea that location matters for collaboration
    - Collaborate or not collaborate?
      - If the proximity is important for collaboration, a firm may decide to put all the necessary functions into a single estab
        => This is not considered as a collaboration

  - Some basic statistics would be helpful
    - % of single estab w/ patents

  - What does ratios tell us?
    - Within-firm collaborations: 35.5%
    - Bw-firm collaborations : 64.5%

Findings: Firm-size effect on collaboration

Finding: Single and multi-estab firms:

- Collaboration
  1. B/w single- and single-estab firms (%?)
  2. B/w single- and multi-estab firms (%?)
  3. B/w multi- and multi-estab firms (%?)

- Percentage?
  - Before considering geography, which specific collaborations occur more often than the case with random drawing?

- Both 1 and 2 are the collaborations across a firm border
  - Given that, why are the collaborations in 1 more localized? (with more localization degree?)

Summary

- The paper helps us to understand the role of geography/distance on collaboration
  - Implicit knowledge spillover (more explanation)

- The paper may benefit by including
  - More description on a firm's decision to choose which estabs for collaboration

  - Discussion about causality
    - Any way to utilize time-series?

  - Some measures at a collaborating-group level
    - Use firm (HQ) address information

  - Analysis with estabs without collaborators
    - Maybe the most localized collaboration

  - Some explanations on the ratio of different kind of collaborations