Networks Dynamics in the Case of Emerging Technologies

The present paper aims at increasing our understanding of how collaborative networks form, evolve and are configured in the case of emerging technologies. The architecture of the relationships among the variety of organisational actors involved in the emergence process exerts a significant influence in shaping technological change in certain directions rather than others, especially in the early stage of emergence. As a result, socially optimal or desirable technological trajectories may be 'opportunistically' rejected. Our empirical analysis is based on a case-study of an emerging medical technology, namely 'microneedles'. On the basis of co-authorship data reported in 1,943 publications on the topic from 1990 to 2014, the longitudinal collaboration (co-authorship) networks were built at two levels: affiliation and author. We examined the dynamics of co-authorship networks by building on recent methodological advancements in network analysis, i.e., Exponential Random Graph Models (ERGMs). These models enable us to make statistical inferences about the extent to which a network configuration occurs more than could be expected by chance and to identify which social mechanisms may be shaping the network in certain configurations. The findings of the statistical analyses (*currently in progress*) combined with the qualitative understanding of the case will increase our understanding of which mechanisms are more likely to drive the network dynamics in the case of emerging technologies. These include evidence of the extent to which the likelihood of forming, maintaining, or terminating ties among actors (authors or affiliations) is affected by actors' covariates such as types of organisations, diversity/specialisation of the research undertaken, and status. These findings have potential to provide important inputs for policymaking process in the case of emerging technologies.

REVIEW

Evaluation

Overall evaluation (*).
__ accept as is
__ conditional (see recommendations)
__ reject

Reviewer's confidence (*).
__ 5: (expert)
__ 4: (high)
__ 3: (medium)
__ 2: (low)
__ 1: (none)

Review

Review (*). GTM strives for a quality, impactful program. For your review, please read the most recent EXTENDED ABSTRACT available as an attachment to the submission. Please provide suggestions to ensure presentation appropriately addresses topic AND/OR list key questions that must be addressed/answered. This field is required unless you provide via an attachment.

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