

Rich-Club Formation and Partner Selection in Global Biotechnology Collaborations: An Empirical Investigation

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In this paper, we are interested in the dynamics of international collaborative networks in the field of biotechnology innovations. The reason for this choice lies in the fact that in this field, innovation is, more than in other fields, the result of collaboration between different agents with complementary knowledge and expertise, such as universities, research institutes, investment funds, government agencies, pharmaceutical laboratories, etc. (Meyer-Krahmer, F.; Schmoch, U 1998), who are highly specialized and located even in different countries.

Analysis of the weighted network constructed following Newman's weighted approach highlights Rich-Clubs' formation. Specifically, using the approach proposed by Ma and Mondragon (Ma and Mondragon 2015), the data show the presence of a Rich-club formed by five countries (the U.S., France, Germany, Great Britain, and Switzerland). These countries represent Poles of Attraction for all other states and, at the same time, form a cohesive group. By analyzing the network topology, the components of the interaction processes among the countries highlight several dynamics discussed in the paper. The evidence contributes to the literature on the dynamics of international collaboration and competition and can provide useful policy directions and indicate possible future scenarios.