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THE NETWORK STRUCTURE BETWEEN ORGANIZATIONS AND THE OPERATIONAL EFFICIENCY OF DRUG DEVELOPMENT

Abstract:

The sharp rise in health-care costs is compressing the public finance in various countries today, and an increase in the efficiency of the research and development of pharmaceutical products is required. In order to increase the efficiency of drug development, open innovation through external cooperation between drug manufacturing companies is attracting attention. However, the research findings on previous researches are not necessarily the same regarding the size of the effect of external cooperation between drug manufacturing companies. It is assumed that differences in the kinds of pharmaceutical products and in the mode of inter-organisational relations are two of the causes of the variation in the research findings. For example, with regard to the mode of inter-organisational relation, the operational efficiency of a horizontal international specialization style is high in the IT industry, and the operational efficiency of a vertical integration style is high in the motor industry. Thus, in this research, the pharmaceutical products were classified appropriately and the inter-organisational relation fit for each was clarified empirically. As a method of research, from the intellectual-property database, the joint-application patents for the past ten years were extracted, and the inter-organisational relation was analysed by using the method of social network analysis. As a result, when the pharmaceutical products were classified with the conventional polymer formulation, the bio-drug development and the dosage-form development, the effect of external cooperation changed with differences in product characteristics. In addition, it became clear that the modes of external cooperation fit for each differ. (This work was supported by JSPS KAKENHI Grant Number 16K03916.)

Keywords:

inter-organisational relation, social network analysis, joint-application patent, pharmaceutical product

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