

System Dynamic Modeling and Policy Analysis of Regional High-tech Industries Development: An Empirical Study of Hangzhou City

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***Abstract:** With the coming of Knowledge-based Economy, high-tech industries such as ICTs, biotechnology, new materials and so on, are becoming more and more important for a region's economic growth and improving competition advantage. According to our literature review and empirical surveys, the development of a region's high-tech industry is mainly affected by several key factors, such as qualified S&T human resources, enough venture capital, strong entrepreneurship, intense innovation [atmosphere, local research universities as innovation sources, choice of proper technologies and industries, convenient and advanced infrastructure, et al. The interaction mechanism among these factors is nonlinear and very complex.*

To foster and promote the rapid development of high-tech industries, the decision-makers of the region should think much of these key factors, and try to optimize the dynamic resource allocation, such as the proper proportion of investment on education, R&D, infrastructure, et al. System Dynamic methodology, which have been proved to be very useful and feasible, is one of the good scientific tools to analysis and simulates the complex system,

Based on the analysis above, and choosing Hangzhou City as an empirical case, this paper models the dynamic interaction among these factors by System Dynamic methodology, and try to simulate the different outputs effects by different inputs. According to different outputs result, and thinking of the actual situation as well as development strategy of Hangzhou, the authors try to give some policy analysis and suggestions, which may be very useful for decision-makers.