

Preface

Creative industries, a collection of booming industries with creativity as the core, set off for its worldwide spreading in the 1990s. Generally, the discussion of creative industries originated from discussions on culture's role in industrial production in the 1940s and later in cultural policy realm. Creative industries' cultural origin, together with their close ties with the new media, shapes their multi-attributed nature. This grants creative industries the potential to stand out in a series of aspects such as promoting economic growth, increasing employment opportunities and facilitating urban regeneration and sustainable urban development. As a result, cities and regions around the world tend to follow the strategy of cultivating creative industries with the expectation of promoting economic growth and enhancing urban/region competitiveness. This practice trend is further pushed forwards by the theory of "creative city" and "creative class", and today it is still in the ascendant.

For a certain city, the large-scale development of creative industries inevitably incurs the rising demand for land resources, which is a pressing challenge in the context that land resources are comparatively limited. So, the questions of how the development of creative industries will shape the urban spatial structure and what policies can be applied to tackle this challenge bring researchers, planners as well as urban policy makers to the discussion table. It is argued in this book that these questions need to be examined from the perspective of complexity. Following this, the book presents how an agent-based model is constructed to generate deeper insights into the above issue centrally concerned in the city realm.

With this aim, eight chapters are arranged for this book to explain. The first chapter, as always, is an introduction to the backdrop and significance of this research. To get the readers ready for understanding the rest of the book, this chapter also spares one section for the explanation of two centrally concerned concepts in this research, creative industries and creative workers, and another section on a brief introduction of the case of Nanjing.

In Chap. 2, the focus is on the theoretical survey of the existent studies on the locational behaviours of the creative firms and the creative workers and the

interactions among themselves and the other two interest groups: the individual citizens and the urban government. It concludes that the interactions need to be understood in a “social network” mode and examined in a complexity perspective. Bearing this argument, Chap. 3 continues with a brief description of agent-based modelling, a common approach to complexity. Then it proceeds to introduce the model development platform NetLogo and the locational utility function applied in the model to describe the creative firms’ and the creative workers’ locational behaviours. The final section goes on to explain the requisite data for model development.

Taking Nanjing as the case, Chap. 4 aims to lay the foundations for parameterising the complex interactions. First, it goes through the development history of Nanjing in a culture perspective, aiming to present the readers the local context in which creative industries’ development strategy was advocated. Then two sections are organised to discuss the factors that define the locational preference of the creative firms and the creative workers, respectively. Continuing with this, the chapter proceeds to the question of how these two groups interact with each other and with the individual citizens and the urban government in terms of urban land use. This effort turns out to be a conceptualised dynamics framework which is the reference for the model design presented in the second section of Chap. 5. In the first section of Chap. 5, it gives a brief introduction to the agent-based modelling approach and the modelling platform NetLogo. Generally, when the research question is identified, it takes three steps to develop an agent-based model: model design, model implementation and model validation. Following this guidance, the second section is dedicated to model design, and the third section focuses on explaining how the model can be implemented by referring to the model design. Specifically, it splits the question into three parts to delineate: the setup procedure, the dynamics procedure and the output-display procedure.

Chapter 6 continues with tackling the issue of model validation, the third step of agent-based modelling. As the understanding of model validation varies across scholars, this chapter clarifies it at the beginning by stating that the concept of model validation in this book refers to two parts: internal validation and external validation. Taking this interpretation framework, the validity of the agent-based model introduced in the last chapter is then examined. It concludes that the model design has been correctly translated into the agent-based computer model and its validity is confirmed at an acceptable significance level. After the model’s credibility is confirmed, this chapter then goes on to scenario. It treats four aspects in terms of the temporal-spatial features of the interactions. They are (1) the growth pattern of the firms and the workers, (2) the dynamics of the spatial distribution patterns of the firms and the workers, (3) the dynamics of the spatial clustering pattern of the firms and the workers and (4) the dynamics of the office rent and the housing rent.

The urban environment in the model introduced in Chaps. 5 and 6, however, is an abstract space characterised by one centre and a concentric structure. This assumption brings the model itself the drawback against its practical application as urban planning support system. For instance, the model can only give general policy making clues but cannot help identify potential hotspots or problematic sites

in a real city case. Thus, Chap. 7 goes further by presenting the framework and the algorithm to incorporate GIS data into the agent-based model explained in the aforementioned chapters of the book. Taking again Nanjing as the case, this chapter then demonstrates how this updated model can be utilised to support policy making in terms of urban land-use arrangement for the development of creative industries.

The book ends with “Conclusions and Further Development” as Chap. 8. It gives a brief overview of the whole research at the beginning. Then it presents the reader the policy implications generated from this book and their generalisability. Finally, by reviewing the research framework and the methodology in a critical way, the book specifies the research limitations and points out the research directions for further development.

By reading this book, the reader can get further understanding of the cities in transition in the second tier in China urban system. In addition, the reader can learn how the complex interactions among the creative firms, the creative workers, the urban government and the individual citizens in terms of urban land use can be brought together under one research framework in a temporal-spatial perspective. It is also expected that this book can help the reader to command the techniques of how to build a spatially explicit agent-based model (ABM) integrated with GIS data and exploit it to formulate urban land-use arrangement for the development of creative industries. So, for people engaged in urban studies and urban planning practice, especially those with high interest in the integration of geographical information system and agent-based modelling, this book can surely serve your appetite.

This book derives from my research in the University of Cambridge pursuing my Ph.D. degree. It is always a time-consuming project to write a book within a short time, especially for a new researcher stepping into the academia. So some mistakes or errors unexpectedly but obstinately may still remain in this book because of the author’s comparative humble knowledge or carelessness. Those potential academic mistakes, as always, shall be attributed to the author’s responsibility. If there are some, comments and suggestions from readers of this book are highly appreciated.

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