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# Cluster-based industrial development in contemporary developing countries and modern Japanese economic history



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### ABSTRACT

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What are the similarities and dissimilarities in the pattern of cluster development between contemporary developing countries and modern Japanese economic history? This study attempts to examine the relevance of the Sonobe–Otsuka model, which is designed to explain the long-term process of cluster-based development in developing countries, for understanding the development process of silk-weaving clusters in prewar Japan. We discovered critical roles played by trade associations and local governments in internalizing the agglomeration economies in the development of the silk-weaving industry in Japan. We argue that further efforts are needed to explore the importance of trade associations and local governments in the development of industrial clusters in developing countries. *J. Japanese Int. Economies* **30** (2013) 19–32. Graduate School of Economics, Kobe University, Hyogo 6578501, Japan; State Building and Economic Development Program, National Graduate Institute for Policy Studies, Tokyo 1068677, Japan.

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## 1. Introduction

Industrial clusters are ubiquitous in developing countries including those in Asia, Latin America, and sub-Saharan Africa (e.g., Huang and Bocchi, 2008; Schmitz and Nadvi, 1999; Sonobe and Otsuka, 2006, 2011; McCormick, 1999). Long and Zhang (2011) argue that China's economic development is basically cluster-led. Recently it has been increasingly recognized among Japanese economic historians that the modernization of traditional rural-based industrial clusters made more significant contributions to economic development than the development of new modern industries during the Meiji Era in Japan (Nakamura, 1983; Hashino and Saito, 2004). It seems to be no exaggeration to argue that whether industrial clusters develop or fail to develop holds the key to successful industrial development in developing countries.

It is therefore critically important to explore how industrial clusters are created, develop, stagnate, or decline, and to identify the factors affecting the success and failure of cluster-based industrial development. Although both contemporary and historical studies of cluster development draw on the theory of agglomeration economies originally formulated by Marshall (1920), the focuses and perspectives are considerably different between the two strands of studies.

This study attempts to clarify what the critical knowledge gaps are and to suggest directions for future research in studies of cluster-based development in both developing countries and the economic history in Japan. In what follows, we firstly review an endogenous model of cluster-based industrial development proposed by Sonobe and Otsuka (2006, 2011), which is based on more than 20 case studies in Asia and sub-Saharan Africa. To our knowledge, no other model has been designed to explain the long-term process of cluster development in developing countries. Secondly, we examine the relevance of the Sonobe–Otsuka model for understanding the development process of silk-weaving clusters in Japan from the late 19th century to the early 20th century. Critically important factors for the development of these industrial clusters, which are not considered in the Sonobe–Otsuka model, are identified to be the roles of trade associations and local governments in introducing new ideas and protecting the name brands of the cluster, which amount to internalizing agglomeration economies (Hashino, 2007a). Also important are the choice of appropriate industries and technologies in accordance with the comparative advantage. Finally, based on the historical studies in Japan, we attempt to draw policy implications for the development of industrial clusters in contemporary developing countries.

The organization of this paper is as follows. In Section 2, we critically review the Sonobe–Otsuka model of cluster-based industrial development, while we examine the development of the three well-known and highly contrasting silk-weaving clusters in Japan, viz., Nishijin, Kiryu, and Fukui, in Section 3: Nishijin is the oldest silk-weaving cluster and specialized in the production of high-quality *kimono* and *obi*; Kiryu is an imitator of Nishijin and a producer of more popular *kimono* and *obi*; and Fukui is a new cluster, which learned from Nishijin and Kiryu and exported simple, plain fabric, called *habutae*, to foreign markets. In Section 4, we discuss the role of collective action in the development of the Fukui and Kiryu clusters, which is beyond the scope of the Sonobe–Otsuka model. Finally in Section 5, we draw implications for future studies of the development of industrial clusters in contemporary developing countries and economic history.

## 2. A review of the Sonobe–Otsuka model of cluster-based industrial development

More often than not, labor-intensive manufacturing industries, such as the garment, leather-shoe, weaving, metal processing, and furniture industries, are clustered in developing countries. Such observations indicate that the industrial cluster provides strong advantages for enterprises over non-clustered areas. According to Marshall (1920), the advantages of industrial clusters or agglomeration economies are: (1) information spillovers or imitation, (2) the division and specialization of labor among firms producing parts, components, and final products, and (3) the development of skilled labor markets. If a firm is located outside the cluster, it cannot quickly learn new useful ideas developed by other firms, must incur high transaction costs in the procurement of intermediate products, and would face difficulties in finding workers with the desired skills.

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