

# Introduction

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The research project, whose outcomes are presented in this book, has started from the observation that the definition and terminology used to classify industrial agglomeration had proliferated over time making the diverse concepts quite vague: industrial districts, localized specialization systems, village communities... and more recently overlapping all others, clusters.

The concept of cluster took its origin from the success of Silicon Valley that Saxenian (1994, 1998) has characterized as “decentralized regional network based on industrial system”. This led Porter (1998) to review his diamond model (1990) to propose that of cluster-based competitiveness.

Governments using the concept as a policy tool to promote competitiveness by innovation, clusters and poles of competitiveness, even if they develop on the basis of pre-existing spontaneous industrial districts, appear as politico-economical constructs at the interface between sciences and technology on the one hand and production on the other hand. It is the reason why they are now at the core of National System of Innovation that they contribute to develop (case of emerging countries) or to restructure (case of advanced countries). But, these similar objectives do not preclude the form of organization which will remain as diversified, as this book will confirm.

The research main aim was therefore to question the theoretical approaches using three main models: industrial districts, industrial clusters, poles of knowledge or competitiveness through an overview of the case of Japan, China, Vietnam, Thailand and Malaysia.

## **What Can be Learned from Asian Industrial Clusters?**

What can the industrial clusters of Asia teach us? At a time when the dynamics of the world's economy are leaning more and more towards Asia, the question takes on a particular relevance and deserves to be asked because of the explosion of clusters throughout Asia; and because of the different models which can be seen developing in the various countries:

- the emergence of new clusters in China and Thailand;
- the transformation of traditional systems of activity into new linkages ready for global production, as in Vietnam;
- the creation of agglomerations of specialised suppliers, as in Malaysia and Thailand;
- the development of new poles of competitiveness and the creation of scientific knowledge clusters as in Japan ...

The palette is varied, vast and certainly full of both theoretical and practical lessons for scientific analysts as well as practising of economy and policy makers.

Faced with this proliferation of models of organisation and dynamics of development, we may of course be tempted to reduce the varied phenomena we can observe in Asia to the models of the industrial districts and innovative clusters described by Porter, or the poles of competitiveness which are being developed in the advanced countries, and so on. However it is not at all certain that these classical approaches can account for the richness or the specificity of the developments observable during the last few years on the Asian continent. This is because, on the one hand, these analyses were constructed at an earlier era, when globalisation was not as widely developed and the competition it brought about less severe. On the other hand they emerged in specifically western socio-political contexts (the third Italy, Silicon Valley, etc.) which are not necessarily the most adequate to account for either the configurations we can observe in Asia, nor the vast upheavals, both quantitative and qualitative, we are faced with today.

While keeping in mind the approaches which have built up over time around the phenomena of the agglomeration of enterprises, our precise intention in this book is to carry out, with the help of the specialists of the various countries we have worked with (Japan, China, Thailand, Vietnam, Malaysia), a broad inventory of the modes of development and management of activities concentration which are emerging today, with the aim of gaining a renewed understanding of the phenomenon.

What phenomena of industrial concentration centred on a particular place and specialising in a particular activity can be observed in Asia? What role do these clusters play? What specific forms do they take? Finally, how do they put in question the appropriateness of the theoretical approaches which have developed over the last forty years around these questions? And what do they teach us about the policies and forms of intervention of the public sphere?

At a time when global economy is refocusing on the Asian side, it is all the more worth to learn from the observation of firms' agglomeration of this part of the world. Based on researches done by experts of and from some Asian countries significantly involved in such a dynamics, it is precisely the aim of this book which is the result from the international workshop held in Lyon and entitled: 'Industrial Clusters in Asia'.<sup>1</sup>

Based on this perspective we will start, in this presentation, by reviewing the various approaches which, over the last few decades — in the west and particularly in Europe — have centred around the localised concentration of enterprises and their impact on the economy and development. This will allow us later to emphasize more adequately the specificities observed in various Asian countries, the analysis of which remains at the core of this book.

## **Presentation of the Book**

After the introduction presents the research aim and the book content, the first part will give a general overview of the theoretical framework (Part 1). Then, the book is divided into three other parts dealing with

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<sup>1</sup> University of Lyon, November 29 to December 1, 2006; ENS-LSH (IAO) and ISH (MODYS).

Japan (Part 2), China (Part 3) and South-East Asia (Part 4), all from both empirical and theoretical points of view.

## **Part 1: Overview**

**In Chapter 1, Bernard Ganne and Yveline Lecler** discuss first on the differentiated forms of conceptualisation: industrial districts, industrial clusters and poles of competitiveness. By summarising, the main findings of the research country by country, the authors then point out the lessons Europe may learn from the organisation and the implementation of clusters in Asia before tending to reconsider the theoretical approaches.

**In Chapter 2, Akira Suehiro** clarifies the two different policy frameworks for industrial development adopted by Japan and other East Asian countries in the past. The first framework deals with the industrial policy approach based on Japan's experience from the 1950s to the 1970s and which classifies industrial policy as being either industry-, issue- or area-specific. The second framework shows the industrial cluster approach which became more popular among East Asian countries after the 1990s. After the currency crisis in 1997, international financial institutions such as the World Bank tended to propose for the industrial cluster approach on the basis of the concept of 'innovation' in order to activate the industrial sector in crisis-hit countries. The Japanese government for its part was proposing for a more conventional approach, favouring industrial policy on the basis of the concept of 'international competitiveness', in order to restructure major manufacturing industries in general, and export-oriented industries in particular.

Using the experiences of Japan, South Korea, Taiwan and Thailand as examples the author discusses the difference between the two approaches in terms of targets, methodology, agents or players, sources of finance, economic environments, and finally attempts to analyse the results of these policies.

Comparing the two approaches in reference to past experiences he finally raises some theoretical implications concerning the possibilities and limitations of the cluster approach in East Asian countries.

**Part 2: The Japanese Clustering Initiatives Approach** — towards industrial poles of competitiveness and poles of knowledge.

This part is made up of four chapters which, taken together, gives an extensive view of what is at stake in a country which has developed a two-fold clustering approach on the basis of existing industrial or research potential. It shows how Japan uses cluster policies to rebuild competitiveness by developing new technologies and industries while at the same time revitalising through innovation regional areas and industrial districts that suffered from crisis and globalization. The first two chapters are more policy oriented while the following two centre on the groupings of small- and medium-sized enterprises, a major issue due to this sector's weight in the economy.

**In Chapter 3, Akira Hattori** focuses on Japanese government policies which led to or remained in association with cluster policies to address two issues: the revitalisation of industrial competitiveness (basically a regional issue) and the promotion of innovation. After outlining the legal framework he details the two types of cluster initiatives implemented in the 2000s, discussing their coordination and governance using case studies carried out on Kyushu Island.

**In Chapter 4, Yoichi Sekizawa** analyses the development of Industrial Parks through the mission of the Japan Regional Development Corporation in the 1990s. Japanese local government politicians from rural areas put pressure on central government to develop Industrial Parks which were regarded at the time as an effective policy for regional development. However, although some of them succeeded, many remained unsold or unused in many areas of Japan, leading to various problems such as financial crisis in certain local government areas, unnecessary destruction of the environment and an added burden on taxpayers. This policy, later recognised as a failure, shows that the theoretical assessment that clusters should not be developed by government policies but only strengthened and developed on the basis of pre-existing potential, is fully justified, but is however difficult to maintain in practice. All regions dream of becoming Silicon Valleys, and even some rural

areas with no foundation of industry clusters want to get on the bandwagon.

**In Chapter 5, Yveline Lecler and Takayuki Yamaguchi** concentrate on small businesses and former industrial districts or *jibasangyō*. Based on a detailed analysis of the reasons why they are falling behind, they emphasise the need for innovation which led to the setting up of clusters, not only at national but also at regional and local levels. Although some of the initiatives concretely observed by the authors are not designated as clusters under the government policy framework, the case studies described show how the cluster concept, implying cooperation between industry, universities and government (*San-Gaku-Kan*), is used to address the difficulties that districts are facing. Comparing the new configurations which emerge from cluster policies with former industrial districts and from the point of view of the pattern of cooperation, they conclude that the shift from resource-based clusters or *jibasangyō* to knowledge-based clusters (innovative clusters of SMEs) might be interpreted as a necessary qualitative shift that agglomerations located in regional areas have to engage in to survive.

**In Chapter 6, Mitsuharu Miyamoto** discusses the results of a large survey carried out on Kawasaki just outside the city limits of Tokyo. Kawasaki is a typical Japanese industrial city with large manufacturing enterprises (electronics) around which a huge number of subcontracting SMEs have gathered. The numerous industrial districts they formed are facing difficulties, since large enterprises have relocated production to other regions in Japan or to China while occasionally transforming their Kawasaki plants into research centres. Kawasaki appears as a pioneer in promoting the city's industrial rebirth by creating a large scale innovative cluster. The issue addressed by the author is how SMEs can develop their businesses to become actors in this innovative cluster. Small businesses have to change their role from that of subcontractors to that of in-house product manufacturers, therefore they have to develop new products and improve profits by strengthening their bargaining power. Through regression analysis

the author attempts to point out the determinants to achieve these goals by taking into account the importance of employing development and sales staff, of consulting with universities or with the Chamber of Commerce, suppliers, banks and so on. But finally the survey shows that what is needed is development-type SMEs.

### **Part 3: China. The Specificities of Chinese Industrial Clusters: their Importance and Weaknesses**

This part is made up of six chapters which give an overview of the various types of development observed in industrial districts in China, describe the very particular specificities of some Chinese clusters and point out their problems and difficulties.

**In Chapter 7, Jici Wang** describes the new phenomena and the challenges of clusters in China and points out their main difficulties in the new era of globalisation.

She notes at the beginning how the theoretical underpinning of the deluge of cluster studies in the world is not clear to China and confutes the conventional wisdom that the location of the existing manufacturing capacities in China is mainly based on the low labour costs which is the sole source of manufacturing advantage. Based on a description of the Chinese cluster phenomenon she attempts to make four points. The first deals with the claim that Chinese clusters are the result of global-local tension. She observes on the one hand how the breathtaking speed of geographical dispersion has been combined with spatial concentration. On the other she points out how, in this context, the ‘race to the bottom’ that is observed between the clusters could be dangerous.

The second point concurs with the view that a value chain could thread through multiple clusters in different localities of a regional economy. The key task facing China should be to foster innovative clusters instead of building more ‘low road’ ones.

In her third point, Wang Jici concludes that a theory of clusters must do more than provide an account for the benefits of collocation and also explains the conditions that may lead to the progress, decline or extinction of the cluster.

Furthermore, in her fourth point, she explains that while cluster-based economic policy has a lot of potential, it is not a panacea for seeking to position local industries in the global value chain and in the global market.

**In Chapter 8, Tomoo Marukawa** analyses very precisely the emergence of industrial clusters in a region of China.

After an overview of the studies of the particular experiences of development in Wenzhou city since the economic reform, the author analyses the emergence of and later, the dominance of private enterprises in the city. He shows the effectiveness of ‘the Wenzhou Model’ and its specificities. In the first section, he describes how Wenzhou has a diverse array of industrial clusters ranging from leather shoes to electric parts, buttons, clothing, automobile parts, valves, cigarette lighters and many others. He describes the diversity of Wenzhou’s industries and tries to understand why so many industrial clusters have emerged there.

In the second section, he develops a very precise methodology to describe the phenomenon. In the third section, he establishes a comprehensive map of Wenzhou’s industrial clusters. In the fourth, he analyses the emergence of some typical industrial clusters.

**In Chapter 9, Bernard Ganne and Lu Shi** deal with the specificities of the development of the Zhejiang clusters.

In their first section, they show how industrial clusters play a particularly important role in the rapid industrial development that China is experiencing and how, among these, the Zhejiang clusters, characterised by the significant development of highly specialised production zones linked to both the national and global economies, present a unique form of dynamism. In the second section, they attempt to determine the unique features of these clusters in relation to traditional approaches. They show that, far from being based solely on the optimisation of production systems, it is the existence of wide-ranging commercial organisations at a local and regional level that makes the Zhejiang clusters so efficient. They suggest finally that the traditional approaches to the theory of clusters may require at least partial reconsideration.

**In Chapter 10, Ke Ding** analyses the distribution system of China's industrial clusters, describing very clearly the history and development of a merchant cluster. At first he shows how at the beginning of the 1980s a number of traditional marketplaces began to appear inside the industrial clusters in China. These markets within the clusters become connected to those in the cities due to interaction between traditional merchants and local government. He analyses how this has resulted in the formation of a powerful network-based market distribution system which has played a crucial role for China's industrial clusters in responding to her exploding domestic demand. Using Yiwu China Commodity City as a case study he explains the features of this distribution system in detail, and the specificities of this kind of merchant cluster.

**In Chapter 11, Jianniu Xu** focuses on the local government's role in local economic development and rural industrialisation. From the perspective of sociology's new institutionalism he describes how local governments are engaged in the development of industrial districts. He shows through case study how, in the development of an industrial district in which the main economic actors are private companies, local government does not act as an entrepreneur inside the enterprise but as a broker outside the enterprise. He points out several reasons for this orientation in the government's role: fiscal decentralisation which stimulates the government to promote the development of the local economy, the rise of private businesses, the property rights of the corporation, the weakness of intermediary organisations and the size and capacity of the enterprises. From these observations, Jianniu Xu concludes that we are seeing in China the emergence of a 'new state local corporatism'.

**In Chapter 12, Jun Wang** deals with the question of interaction and innovation in cluster development. If local technological institutions can be regarded as the gateway of knowledge from outside in the clusters that lack both external resources and large firms, how can they be effective in supporting small businesses to innovate? Through observing two cases in Guandong he examines the processes of interaction for

innovation between small businesses and TIC. Based on a model of supporting mechanism, he expounds the evolutionary mechanism and determining factors, and draws some conclusions as the fundamental condition that an institutional context can be either necessary or effective for formal innovation. He points out further consequences and orientations.

#### **Part 4: Clusters and the Building of Competitiveness in Emerging Countries: Some Evidence from South East Asia**

This part is made up of five chapters, taking either Vietnam, Thailand or Malaysia as their fields of study to analyse the specificities of agglomerations that can be found (craft villages or industrial districts, industry-wide or geographically localised clusters). They take into account and focus on the level of industrialisation of the country, the development of the NSI, the skills of manpower, and of course policies implemented or even the strategies of the multinationals involved.

**In Chapter 13, Quy Nghi Nguyen<sup>2</sup>** explores the transition from craft villages to clusters in Vietnam: Transition through Globalisation.

He notes at the beginning how in Vietnam few research works treated craft villages as a form of agglomeration. Based on a deep quantitative and qualitative study of porcelain and ceramic craft work which is emerging today as an industrial district, he examines the rapid transition from an old district producing low quality products for a mainly domestic market to becoming one of the biggest suppliers of ceramic/porcelain products not only for the domestic but also for a large international market. He shows the reorganisation of the social actors involved in district development and how relations between these various actors need redefining in order to fit into the new rules of the game

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better. He analyses the overlaps between traditional and modern industrial districts and the emergence of new institutions (public power, associations, enterprise clubs that shape district development). In conclusion he discusses the new stakes and new difficulties.

**In Chapter 14, Stephen J. Appold and Nguyen Quy Thanh** ask about the real role of social embedding in the success of Vietnamese industrial clusters, the need for reform and rapid economic growth, suggesting that the use of informal mechanisms of economic regulation such as social embeddedness are widespread. But the empirical enquiries carried out in small businesses in North and South Vietnam show that social embedding is in fact limited and that important exchanges and activities are undertaken without being socially embedded. Moreover, the need for performance monitoring does not appear to affect the level of interaction among business partners, and families (socially embedded actors) are not especially reliable sources of help, and when this help exists it appears to be expensive. In contrast they remark that a business provides a focus for family activities and thereby strengthens relationships. They conclude that there is not necessarily a causal link from social embeddedness through proximity benefits leading to financial success. They finally raise the question of extending the theory of industrial agglomeration by documenting the use of social embedding to regulate economic exchanges.

**In Chapter 15, Audrey Baron-Gutty, Catherine Figuière and Jean-Christophe Simon** suggest that several types of clusters have to be identified in Thailand in order to understand both their origins, specific dynamics and impact on the overall economy and national competitiveness. Matching some field observations (the cluster of Chaiphum, initiated by the Department of Industrial Promotion) and documented cases (in Chiang Mai Province) with cluster theory originating from advanced economies, they identified three categories of clusters, according to the sector linkages and to their economic and social embeddedness, namely ‘tradi-clusters’, ‘neo-clusters’ and ‘plani-clusters’.

**In Chapter 16, Patarapong Intarakumnerd** focuses particularly on the Thai cluster policy initiative which aims at rectifying weaknesses and the fragmentation of the country's national system of innovation (NSI). He uses four case studies of clusters which are very different in terms of technological sophistication and business objectives (hard disk drives, bus body assembly, software, and chilli paste) to elucidate successful and unsuccessful aspects of clusters in Thailand. Pointing out the positive impacts on Thailand's NSI (selective industrial policy, more coherent policy implementation, more cooperation between firms and with other agents) the author also shows the problems which remain (misconception and confusion concerning the concept of clusters among policy makers and business leaders), while emphasising the importance of intermediaries in the process.

**In Chapter 17, Elsa Lafaye de Micheaux** studies the case of Penang, Malaysia's famous cluster. Chosen in 1970 as a location by major American semiconductor firms strongly supported by the local administration, then followed by Japanese and Taiwanese electronic companies, Penang has emerged as the 'Silicon Valley of South-East Asia'. Although Malaysia's national innovation system remains weak, due to a shortage of skilled manpower and a low level of research and development, Penang's territory seems to escape these constraints. From field surveys, monographs and local statistics, the author identifies what has been determinant in the choice of location and shows that human resources are playing an important role in the long-lasting success of the cluster. She explains how labour enrolment, turnover and training have contributed to Penang's industrialisation and development. These elements also foster the exchange of information as well as the creation of subcontractors and technical help within the cluster. The sustainability of Penang's competitiveness in the next decade is however under question due to the erosion of comparative advantages.

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