Community Activities and Industrial Clusters

Wei Huang, Dingfu Jiang, and Jiandong Yang

***Abstract*—No study till now involves the relationship between community activities in an industrial cluster and the development of the cluster. By literature research and theoretical derivation we studied this kind of relationship. The direct and indirect effects of community activities are helpful to the development of ingroup organizations and industrial clusters.**

***Index Terms*—Community activity, industrial cluster, organization.**

I. Introduction

There is a common sense that community activities are helpful to physical and psychological health of residents in the community, and to community culture construction and community development. An industrial cluster as a group, the organizations in it as individuals, which seem much like a residential community; the ingroup organizations participate in some informal activities together which seem very like community activities. So we analogize: The community activities in an industrial cluster can promote the accomplishment and capacity of the employees of ingroup organizations, and are useful to cultural development in the cluster, then the activities are useful to the development of ingroup organizations and the cluster.

According to the literature search result, in the international research field no study till now involves the relationship between community activities in an industrial cluster and the development of the cluster.

II. Definitions

Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field, including product manufacturers, service providers, suppliers, universities, and trade associations [1]. We define community activities in an industrial cluster as the not so formal or official activities attended by the organizations (including enterprises and other type of institutions) in the cluster, and these activities are similar to the community activities in a residential community, the main purpose of these activities is to build up communications and understanding among the ingroup organizations and to make friendly contacts among the organizations.

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III. Theoretical Derivation

A. The Relationship between Community Activities and Clusters

Brenner argued that the dynamics to facilitate the evolution of an industrial cluster includes human capital, technological spillovers, cooperation, public opinions, regional politics, venture capitalists [2]. Zeng *et al.* found that there were significant positive relationships between inter-firm cooperation, cooperation with intermediary institutions, cooperation with research organizations and innovative performance of SMEs [3].

Whereas cooperation among organizations usually will not appear at the very start, and organizations often start from other type of contacts, then understand one another, at last reach cooperation. The community activities in industrial clusters are just an important component of these "other type of contacts". These activities include parties, community voluntary labor, donations, entertainment and sports, and so on. Usually there are exchanges of knowledge, skills, experience and information in these activities. These activities are also in favor of exchange of talents, create opportunities for business transactions, and are helpful to open and free flow of other production factors. These direct and indirect effects are helpful to the development of ingroup organizations and industrial clusters.

Lin and Li studied the issue of knowledge transfer in four kinds of social network structures (note: three of them will be dissertated respectively in the following, and the case of random network will be omitted) by simulation method. They found that due to the topological property of regular network where exist only short-range edges (note: links between individuals), the knowledge transfer is localized. Lin and Li found that in a small-world network, there exist long-range edges, which make the knowledge transfer become easier [4].

This tells us that long-range edges are efficient here. This also enlightens us: can community activities in industrial clusters become the method for building long-range edges? Actually community activities create more chances for larger scope of ingroup organizations to build cooperative relationships (including knowledge sharing), because by attending these activities, many organizations are getting to know each other and will have more contacts in the future. Without these activities, these organizations maybe won't contact each other forever, and they even believe that there's no chance and value for them to get in touch and cooperate. On the other hand, good cooperative relationships and knowledge sharing are helpful to the development of organizations and clusters.

Lin and Li found that as the time passes, the growth of knowledge becomes much faster in scale-free network,

because there exist a few hub agents who are connected with a considerable number of agents in the system [4]. When the agent with small degree (note: connectivity degree) broadcasts, a hub agent may probably receive the newly innovated knowledge because he is very likely to be connected with the broadcaster. This provides the hub agents with higher knowledge stock. When a hub agent broadcasts, a large fraction of the agents connected with him will learn immediately, and thus the average knowledge stock of the system is efficiently improved. On scale-free networks, the hub agent plays a very important role. This mechanism provides the fastest knowledge growth and diffusion on scale-free network among the four kinds of networks studied by Lin and Li.

Community activities in clusters can form similar hub agents in clusters if some organizations attend these activities actively. Obviously there will be communications and broadcasting of knowledge and information in community activities in clusters, thus community activities can naturally improve the knowledge storage and transfer of ingroup organizations and the whole cluster.

Granovetter conceptualized the architecture of social networks. In his view, a social network consists of two essential elements: (1) cliquish sub-networks and (2) bridges [5]. A cliquish sub-network consists of individuals who are interacting extensively with one another. Consider, for example, a friends network. Granovetter found that this sort of sub-network is not very helpful when people look for jobs [5], [6]. The main reason is that information traversing through cliquish sub-networks is more likely to be limited to a few cliques which tend to share redundant ties. Instead, people get more useful job information from random contacts. Such contacts (or connections) are called bridges, which serve to connect diverse members from different, or often socially distant, sub-networks. In social worlds, people often create bridge-building mechanisms, such as conferences, parties, or Internet chat rooms, to facilitate interactions among random contacts or strangers. Onnela *et al*. empirically confirmed that the above architecture indeed represents the structure of real-world communication networks for mobile phone users [7].

The above also proofs the function of community activities in industrial clusters, and these activities can create "bridges" for diverse members from different, or often socially distant, ingroup organizations.

Granovetter argued that the weak tie between Ego and his acquaintance is not merely a trivial acquaintance tie but rather a crucial bridge between the two densely knit clumps of close friends [5]. These clumps would not, in fact, be connected to one another at all were it not for the existence of weak ties. Granovetter also argued that the fresher knowledge transferred through weak ties is more valuable to the activity subjects in networks, and weak ties may let enterprises be able to build cooperative partnership relations with more organizations in the situation with the same quantity of resources, and to get more information from outside.

Community activities in industrial clusters are similar to this kind of weak ties, and these activities can also play a similar important role, for example, facilitate cooperation and information sharing.

We know that culture can influence social and economic development, and the latter can also influence the former, too. In addition, according to the studies of some researchers, the speed of this kind of counteractions is not always slow, and the effect of counteraction is probably very quick and obvious. For example, through a Chinese case Li and Cheng demonstrated that conventional culture would change in the short run induced by interest [8]. Li and Cheng argued that from the transition of conventional culture we can see that the transition of culture is the result caused by the change of social and economic condition which determines the original culture.

So we can analogize that there's a reciprocal influence between ingroup community activities and the development of ingroup organizations / clusters.

B. Strategy for Stimulating Community Activities in Industrial Clusters

Karweit, Hansell and Ricks argued that racial integration in the classroom can be achieved by arranging classroom structures to produce enough weak contacts to connect black and white cliques, rather than by encouraging strong biracial friendships (the usual strategy) [9]. This result would be immediately applicable in schools because weak ties are easier to stimulate through realistic organizational innovations.

The similar strategy, organizational innovation, can also be applied to stimulate community activities in industrial clusters.

IV. Conclusion

For the first time this paper provides the following conclusions about community activities in industrial clusters and industrial clusters. The direct and indirect effects of community activities are helpful to the development of ingroup organizations and industrial clusters. Community activities create more chances for larger scope of ingroup organizations to build cooperative relationships (including knowledge sharing). Community activities can improve the knowledge storage and transfer of ingroup organizations and the whole cluster. Community activities can create "bridges" for diverse members from different, or often socially distant, ingroup organizations. Like weak ties, community activities can play a similar important role, e.g., facilitate cooperation and information sharing. There's a reciprocal influence between ingroup community activities and the development of ingroup organizations / clusters. Organizational innovation can be applied to stimulate community activities in industrial clusters.

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