



Dynamics of social trust and human capital in the learning process: The case of the Japan garment cluster in the period 1968–2005

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ABSTRACT

This paper examined the ways and the extent to which human capital and social trust are associated with the learning process of a manager in making operations decisions through experience. To this end, using a data set originally and purposively constructed by the author, I investigated the development and transformation of the garment industry cluster region of Kojima, Japan. The major findings through statistical estimations are as follows. (1) In the cluster development stage, the social trust of an enterprise and its manager's experiences in firm operations could be regarded as forming a complementary association. (2) In the stage following cluster development, however, a manager's human capital as accumulated through schooling and personal experience, instead of social trust, become complementary.

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1. Introduction

Recently, researchers have investigated not only the effects of social capital in phases of the developmental process, but also the changing role of social capital from the viewpoint of dynamics. In the garment clusters in Asian countries, it has been found that social capital plays a greater role in the developing stages, in which communities are relatively closed to outsiders, but that human capital makes a more critical contribution in the later stages. For example, a case study in the Bingo region, a major garment cluster in Japan, provided evidence that a manager's schooling years have a detrimental effect on firm performance in the development stage but become a key factor in improving firm performance in the later developing stage (Yamamura et al., 2003; Yamamura, 2005). Similarly, a case study of the Tirupur garment cluster in southern India indicated that firms with well-established networks in the cluster had an advantage in access to credit, but that such advantages diminished over time (Banerjee and Munshi, 2004). These cases are also similar in that in both studies a close-knit interpersonal network was established within the community when a cluster was formed. However, as time passed, either firms relocated their production bases from inside the cluster to different locations outside (Yamamura et al., 2003; Yamamura, 2005), or outsider firms initiated business in the cluster (Banerjee and Munshi, 2004). Consequently, in later stages, the cluster was forced to adapt under worldwide competitive pressure.

Prior to the advent of modern transportation such as railways and automobiles, the inflow of strangers from outside a community seems to have been limited; the community was considered a closed society. According to field research in the Bingo region, a trading company employee doing business with a Bingo partner remarked, "It is impossible to do business here unless one enters the Bingo region and first becomes well acquainted with its culture and history" (Yamamura, 2005). Local norms were likely formed independently of the outside world due to scarce contact with the outside. If local norms are

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defined as local rules in a closed community, then local rules are limited within the community but not followed in the outside world.¹ Local rules are based on conventions, which are judged from the inside of the community, not the outside (Sugden, 1989). Compared with these local rules, rules that are not limited to a particular area are called global rules.² This presumably is why one must have much knowledge about the business conventions of a particular region to enter smoothly into business relationships. These business conventions, which cannot exist in the market in the sense of neoclassical economics, formed gradually through long-term and intensive personal interactions. These local rules and norms based on conventions obviously differ from the rules of transaction generally recognized by trading company employees. As such, knowledge about local rules and norms cannot be obtained through school education.³ Social capital is hence expected to make a contribution to firm growth. Nevertheless, economic development leads to environment change, which cluster firms must confront. Due to the extension of economic activity outside of communities and the new entrance of outsider firms, as observed in the cases of Bingo and Tirupur, the effectiveness of local rules gradually declines, while global rules become more effective, leading human capital to play a more important role in the improvement of firm performance. In this paper a simple learning model is employed, which also provides the basis for an empirical testable hypothesis concerning such an evolutionary process.

The Kojima region was for a long time known as the largest garment cluster in Japan. Although at one time the region had scarce arable land and was a relatively less developed area, rapid economic growth occurred due to the emergence of garment clusters in the post-war period. More recently, however, the amount of output within the Kojima region has decreased due to the relocation of production to regions outside Kojima. For these reasons, the Kojima region is an appropriate target for investigating the different phases of the development process. Although I make use of available published production data at the enterprise level for about 40 years, namely covering the span of 1968–2005, there are limitations preventing a sufficiently thorough investigation of the development process in detail. To compensate for this limitation, I also conducted a number of field research trips to Kojima to collect original survey data from existing enterprises. Such data, comprised of published and original survey data, allowed me to conduct an empirical assessment of the effects schooling and social capital have on the learning process. I am concerned in this paper with the question of how the associations between social capital and human capital evolve, similar to the previously published case of Bingo (Yamamura, 2005). Environmental change in the garment industry seems to have become more distinct in the 21st century than ever before, but unfortunately, the Bingo garment cluster case did not cover this period, and thus it failed to sufficiently examine its stated hypothesis (Yamamura et al., 2003; Yamamura, 2005). The data of the current study includes the previously missing period, allowing for a more appropriate investigation of the dynamic process of change in garment clusters.

The organization of this paper is as follows. Section 2 provides a simple learning model on which the empirical analysis is based, and then postulates a testable hypothesis. A brief description of the data collection is then presented, and the developmental process of the Kojima region during the past 40 years is summarized in Section 3. Section 4 presents a regression model and discusses the results of the estimations. The final section offers concluding observations.

2. Basic empirical model

In this paper, social trust formed by long-term interpersonal interaction is considered to play an important role on how firms invest.⁴ I assume that the production function takes the form of the target input model and apply the model employed in the existing literature to this research (Wilson, 1975; Jovanovic and Nyarko, 1996; Rosenzweig, 1995; Bardhan and Udry, 1999; Yamauchi, 2004). The main feature of the target input model is that an agent such as a firm manager determines the input after obtaining the relevant information, yielded by experience, about the optimal input. A risk neutral agent j that is taken as a manager can produce goods at period t . Input and output levels are denoted as z_{jt} and q_{jt} , respectively. The production function is defined as

$$q_{jt} = 1 - (y_{jt} - z_{jt})^2, \quad (1a)$$

where

$$y_{jt} = \theta_j + w_{jt} \quad (1b)$$

is a random target that fluctuates around parameter θ_j representing the ability of j . w_{jt} is an i.i.d. normal variate with a mean of zero and variance of σ_w^2 . A firm manager knows σ_w^2 . Hence, he does not observe θ_j directly, but rather has some prior beliefs about it. $E(\cdot)_t$ and $\text{var}_t(\cdot)$ denote the conditional expectation and conditional variance at t , respectively. The optimal decision

¹ Local rules provide various types of contracts, such as the commercial contracts and contracts between makers and subcontractors.

² Conflicts generated cause people to seek legal resolutions, thus relying on lawyers. Nevertheless, the elasticity of demand in Japan is small, reflecting Japan's tendency to settle disputes informally (Yamamura, 2008).

³ For instance, there is the case of a manager born in the Bingo community who graduated from a prestigious university in Tokyo but failed in business after returning to the Bingo region in the 1960s and 1970s (Yamamura, 2005). Yamamura (2005) indicated through his interview that this manager's failure might have been due to the fact that he was unable to sufficiently understand the local rules in the long run, despite his great business knowledge and ability.

⁴ Putnam (1993) asserts that social capital as presented in the case of Italy is considered to consist of local public goods. Following this argument, here social trust is taken as local public goods.

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