**Is *Kaizen* Effective In Developing Countries?**

**The Universality and Distinctiveness of *Kaizen***

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**1. Introduction**

*Kaizen*, a “method of business management aiming for continuous operational improvements through a bottom-up, hands-on, participatory approach,” has been adopted by many Japanese companies. Toyota, one of Japan’s leading automobile manufacturers, has adopted *kaizen*, referring to it as the Toyota Production System (TPS). *Kaizen* is also an important policy tool for the Japanese government’s official development assistance (ODA). Former Prime Minister Shinzo Abe, for example, referred to the importance of *kaizen* when he addressed the opening sessions of the Fifth and Sixth Tokyo International Conference on African Development (TICAD) held in 2013 and 2016, respectively. He identified *kaizen* as a crucial way of supporting Africa through ODA. Private sector projects have subsequently been expanded to support *kaizen* in many African countries, such as Ethiopia, Tanzania, and Ghana. These efforts are not limited to Africa. Beginning with *kaizen* support in Singapore, cooperation on *kaizen* has also been implemented through ODA in other regions in Asia, the Middle and Near East, Latin America, Eastern Europe, and elsewhere (Shimada, Homma, and Murakami 2013; Hosono, Page, and Shimada 2020).

Neither is the use of *kaizen* in Japan’s international development cooperation limited to support for companies. It has also been adopted in the context of occupational training, healthcare (the Better Hospital Services program, for example), and lifestyle improvement. Essentially, *kaizen* has been implemented across a broad range of regions and sectors, and is crucial to understanding Japan’s international cooperation.

The Japanese word *“kaizen*” is generally translated into English as “continuous improvement” or just “improvement.” It is a very simple word, and not difficult to translate, at least in a literal sense. However, it is difficult to understand the connotations of *kaizen* through this literal translation. It is more difficult than it might appear to fully understand the implications of this simple-looking term. There are several reasons for this difficulty. From the next section onward, I will discuss the meaning of *kaizen*, its significance in the context of international cooperation, and why this seemingly simple term is so difficult to understand.

**2. Why *kaizen* is a crucial policy in international cooperation**

Two factors are behind the increased importance of *kaizen* as a policy for international cooperation in recent years. The first factor is the reevaluation of industrial policy by international aid donors. There has been an increasing focus—as one aspect of industrial policy—on guiding corporate managers in developing countries in the use of *kaizen*.

The reevaluation of industrial policy began with the revision of market fundamentalism (a neo-classical standpoint in terms of economic theory, referred to as the Washington Consensus) at the World Bank. The World Bank had taken the opposite approach to industrial policy from the 1980s onward, arguing that governments should not interfere in markets. To this end, it had directed policies aimed at reducing the role of government intervention such as “structural adjustment financing” and “investment environment enhancement,” and strongly opposed policies aimed at introducing *kaizen* as part of government industrial policy.

The debate on industrial policy between Justin Lin and Ha-Joon Chang provided the catalyst that changed this approach (Lin and Chang 2009). At the time, Justin Lin was Chief Economist at the World Bank. Ha-Joon Chang, meanwhile, was renowned for his research in economic history showing that industrial policy was the key to economic development in countries such as the United States and the United Kingdom (Chang 2002). After their debate on the role of governments, Justin Lin advocated a neo-structuralist economic approach proposing more proactive industrial policy (Lin 2014) but met with intense resistance from the main faction within the World Bank, which opposed industrial policy. Eventually, he had no choice but to leave the World Bank. This debate continued to significantly influence the aid community, even after Lin’s departure from the World Bank. The Donor Committee for Enterprise Development (DCED), a major private sector donor committee, began discussing industrial policy from around 2012.

At the same time, a series of research projects conducted by a group including Professor Joseph Stiglitz (Colombia University) and others began to discuss *kaizen* in contexts such as the revision of the approach to industrial policy and the consideration of approaches to development financing (Noman and Stiglitz 2015; Noman and Stiglitz 2017; Noman, Stiglitz, and Kanbur 2019).[[1]](#endnote-1) As part of this trend, the United Kingdom Overseas Development Institute (ODI) also produced a paper considering the role of *kaizen* as a tool of industrial policy (Lemma 2018). The reassessment of the importance of support for companies in developing countries—in the context of this revision of industrial policy by donors—was an important factor underlying Japan’s more active implementation of *kaizen* support.

The second factor behind the increased importance of *kaizen* as a policy in recent years is the change in the tone of the development economics debate that occurred at the same time as the reevaluation of industrial policy. Until then, development economists had proposed that the economies of developing countries could not grow because of a lack of funding and technology (the gap approach). This approach changed with the spreading recognition of the greater importance of “management capital”—the ability to manage money, infrastructure, and technology, and devise ways to generate profits from them (Bruhn, Karlan, and Schoar 2010; Mano et al. 2012; McKenzie and Woodruff 2014; Suzuki et al. 2014; Higuchi et al. 2019 ). The concept of management capital refers to the ability to manage a company, and an element of this, of course, is *kaizen*.[[2]](#endnote-2) This change gave rise to a large amount of research, with organizations such as the World Bank also launching studies, these efforts continuing to this day (Dinh et al. 2012).

In this way, the reassessment of industrial policy by donors, together with the increased importance of management capital in development economics, gave rise to the new focus on *kaizen* cooperation mentioned at the start of the chapter, in contexts including Japan’s international cooperation.

**3. What is *kaizen*? —Continuous operational improvements through a bottom-up, hands-on, participatory approach**

*Kaizen*, as described at the start of the chapter, refers to “improvement” or “continuous improvement,” and is also known as TPS. *Kaizen* originated from initiatives in Japan and was introduced to the United States in English by Imai (1986). There it was received with interest, and the Japanese word “*kaizen*” became a commonly used term in Europe and the United States. The interest generated by *kaizen* in the United States was attributable to the historical background of the era. The 1980s was an era of economic stagnation in the United States, and there was a sense of urgency: if U.S. companies could not improve on Fordism, based on scientific management (Taylorism), which had been the dominant approach since the Second World War, then they would no longer be able to compete with Japanese companies. In this context, *kaizen* was introduced as the essence of “Japanese business management,” and adopted as a way to overcome Fordism.

*Kaizen* has been variously defined within Japan and in the context of international development (Ohno 1982; Imai 1986, 2005; Sonobe and Otsuka 2014; Ohno and Bodek 2019; Hosono, Page, and Shimada 2020). However, the concept of *kaizen* as “continuous operational improvements through a bottom-up, hands-on, participatory approach” is common to all these definitions. This concept is more easily understood in comparison to its opposite: the “top-down, specialist-led approach” in Figure 1, common in Europe and the United States, of which Fordism is a representative example.

Fordism refers to a style of production introduced in the 1910s by the automobile maker Ford. Fordism arose from the management philosophy known as Taylorism. Its salient points include a top-down approach, with management making decisions that are then implemented by workers. Fordism was first introduced in an era of intense industrial action by labor unions. Every time Ford’s skilled workers went on strike, the factory would cease production. Fordism was devised to enable factories to continue operation with even relatively unskilled labor, by reducing the dependence on skilled workers as much as possible.

Specifically, work was decomposed into “simple, repetitive tasks” that even relatively unskilled workers could perform. This was accomplished in the following way. First, each process was “standardized,” or codified as a simple task that anybody could perform. Second, the time required and speed of each standardized task were measured. Third, a target time was set for each task. Ford was thus able to manage how many standardized tasks could be performed by each worker within a designated time. In this way, Fordism enabled factories to maintain efficient production by employing low-skilled labor, even when the company’s skilled workers went on strike. The top-down approach is a feature of Fordism, with workers perceived not so much as autonomous actors but rather as subservient to the orders of their superiors. This aspect is very different from the *kaizen* approach, as described below.

Unlike in Fordism, workers in the *kaizen* approach are not units that can be replaced at will: rather, they participate in running the workplace through quality control circles (QCC), thereby raising their motivation. Constant, incremental improvements in work efficiency are achieved through a bottom-up approach to eliminating wastage (Ihara 2016; Shimada and Sonobe 2018; Hosono, Page, & Shimada 2020; ).[[3]](#endnote-3)

The important point here is that ways are devised to enhance the “motivation (*yaruki*)” of workers on the factory floor (*genba*). The *genba* is seen not as the site of tension between management and workers, but rather as a forum for obtaining the agreement of workers and encouraging autonomous work. This is quite different from Fordism’s approach of “segmenting and standardizing work to transform it into repetitive tasks.” Workers at Japanese companies strive autonomously to find solutions to the problems they face on the factory floor (*genba*), even amid ambiguity, uncertainty, and imperfection.

At the core of *kaizen* lies a *genba*-centered philosophy. Rather than perceiving workers as units that can be replaced, the idea of *kaizen* is to empower workers to raise the company’s productivity (Hosono, Page, and Shimada 2020; Shimada and Sonobe 2021; Shimada 2015). As Shimada (2019 and 2017) has discussed, this approach is linked to the concept of “decent work” promoted by the International Labour Organization (ILO) and was in fact influenced by the ILO’s Declaration of Philadelphia in 1944, which rejected the view of labor as a commodity and emphasized the importance of cooperation between management and workers to achieve greater productivity. This sparked the movement in postwar Japan towards “productivity improvement,” described later in this chapter.

Figure 1: Differences between Fordism and *kaizen*

(Prepared by the author)

**4. Can *kaizen* be implemented outside Japan? —Is it uniquely Japanese, or universal?—**

In the pages above, I have discussed what *kaizen* is, but how is it understood outside Japan? The concept of *kaizen* is deeply rooted in Japanese culture, and it has thus been argued that it is impossible to comprehend *kaizen* without an understanding of Japanese culture. For example, Taiichi Ohno, who codified TPS at Toyota, characterizes the concept of *kaizen* as “difficult to grasp.”

It started as part of an attempt to develop original methods suited to Japan’s economic climate. Ideas that were practiced and emphasized in this context—like the “*kanban*” system[[4]](#endnote-4) and “automation” written with the addition of the character for “human”—were specifically **designed to prevent other companies, especially those in developed countries, from understanding them: to make it difficult even to guess at their meaning. In this respect, perhaps it’s inevitable that they’re difficult to grasp** (Ohno 1978 and 1979; emphasis added by the author).

Ohno, then, characterizes *kaizen* as difficult to understand because it was deliberately made to be so. Takahiro Fujimoto, a business management researcher, criticizes this obscurity, arguing that *kaizen* is not necessarily a new concept, nor one unique to Japan (Fujimoto 2001). Rather, Fujimoto argues that *kaizen* is the basic approach of industrial engineering (IE): its popularization as distinctively “Japanese” has caused led to confusion, and it should be explained, as far as possible, in terms of a basic concept common to Europe and the United States as well. Meanwhile, Womack et al. (1991) refer to TPS as a Lean production system (or Lean method) and conceptualize it as a more universal management method, not limited to Toyota. In light of this discussion, *kaizen*, far from being a difficult concept to grasp, appears an extremely coherent management technique.

In other words, *kaizen* has been discussed in two completely different ways: on the one hand as a “distinctively” Japanese management method, and on the other as a “universal” management technique. Likewise, in the on-site (*genba*) implementation of Japan’s international cooperation, there are two different approaches to the *kaizen* concept, depending on the project. For the implementation of some projects, it is considered necessary to teach counterparts about the culture and other aspects of Japan, while for others, counterparts are taught universal methods such as Lean production systems. For this reason, there are often substantial differences between the content of projects: even among those referred to as “*kaizen* projects.” These differences sometimes obfuscate the meaning of *kaizen* or lead to mutual negativity, with each project regarding the other as “not really *kaizen*.” Overall, *kaizen* remains a vague and ambiguous term for non-Japanese speakers.

**4.1 Why did these differences in content arise? —The dual origin of *kaizen***

There are two reasons why these differences in content arose. The first is that, in the context of international cooperation, the concept of *kaizen* has two separate origins, the differences between these two origins reflected in the differences between the content of *kaizen* projects. The second reason is the difference between Japanese-style business management and that used by foreign companies. I will now proceed to discuss these reasons in detail.

First, I will examine the dual origin of *kaizen*. Two organizations—the Union of Japanese Scientists and Engineers (JUSE) and the Japan Productivity Center (JPC)—played a significant role in introducing the concept of *kaizen* to Japan. The JUSE focused on “quality improvement,” inviting Dr. W. Edward Deming from the United States, and introducing the quality control circle (QCC: small group improvement activities) method to Japanese companies.

By contrast, the JPC was established to receive strategic assistance from the United States. The purpose of this assistance was not limited to “productivity improvement” but also incorporated “worker protection,” with support for labor unions specifically included among its goals. The aim of worker protection represents a significant difference between the JUSE’s “quality improvement” and the JPC's “productivity improvement.” I would like to discuss the cause of this difference before proceeding to examine how these concepts of *kaizen* were implemented in the context of international cooperation.

The emergence of a strong worker protection theme in JPC’s productivity improvement initiatives is attributable to their implementation as a part of the assistance provided to Japan by the United States. Why was that? Partly due to the Cold War context in which these initiatives were implemented, the United States had a strategic goal of preventing Japan’s labor unions from becoming communist and sympathizing with the Soviet Union, and keeping them firmly within the framework of the socialist-democratic West. That is, these initiatives were aimed at increasing corporate productivity as well as at raising wages to prevent workers from becoming sympathetic to the communist cause. (Refer to Shimada 2017, Shimada 2018a, 2018b, 2018cc), and Nakakita 2018 for a detailed discussion of this point.)

From the end of the Second World War until the mid-1950s, Japanese companies were also subject to antagonism between management and workers, with frequent strikes. The initial introduction of productivity improvement to Japan through U.S. assistance in 1955 gave rise to a vehement backlash from labor unions, particularly the General Council of Trade Unions of Japan (JCTU, commonly known as Sohyo). Unions were deeply concerned that productivity improvement would lead to a reduction in employment. To address these concerns, the personnel sent to the United States to learn about productivity improvement included not only corporate managers such as Taiichi Ohno, who, as Toyota’s Vice President introduced *kaizen* to the company, as described above, but also to those labor union members who had most vigorously objected to its introduction. This was intended to reinforce the idea that productivity increases would be clearly reflected in workers’ pay, and to win over Soviet-leaning labor union leaders. At the time, Japanese companies had an antagonistic relationship with labor unions. They deeply opposed the idea of involving worker protection or labor unions in productivity improvement. However, on the insistence of the United States (especially the U.S. Embassy in Tokyo), aspects such as worker protection were included as important elements of U.S. productivity improvement assistance to Japan.

Essentially, the differences between the JUSE and the JPS can be defined as the difference between the JUSE’s focus on quality and productivity from a management perspective and the JPS’s approach to productivity with consideration for labor unions. These two original approaches are variously adopted in the implementation of *kaizen* projects. The *kaizen* initiatives currently implemented by JICA and other organizations in locations such as hospitals emphasize worker protection, such as preventing the infection of healthcare workers.

By contrast, little mention is made of worker protection or labor unions in JICA’s *kaizen* projects targeting companies, partly because labor issues are often a delicate subject. Thus, the approach adopted by ODA *kaizen* projects targeting companies is close to that originally espoused by the JUSE. In fact, *kaizen* did not appear in the names of projects until after the second half of the 2000s; previosly such projects were all characterized as quality or productivity improvement projects. These products became referred to as *kaizen* projects to make them easier to understand in a Japanese domestic context. However, they still rarely incorporate an element of worker protection. These two differences form an important basis for the issues discussed in the following section.

**4.2 Is *kaizen* effective overseas? Or is knowledge of Japanese culture necessary to comprehend it?**

Is *kaizen*, then, effective overseas? Or must one first learn about Japanese culture in order to comprehend it? The answer to both of these questions is “yes and no.” To begin with, *kaizen* was originally introduced into Japan from America as a management method aimed at improving quality and productivity, as discussed above. To revisit the description by Fujimoto (2001), it is precisely because *kaizen* is the basis of industrial engineering (IE) that it could be introduced from the United States and take root in Japan. In fact, it is not a peculiarly Japanese concept, but rather a universal management technique, one that can be transferred through international cooperation. It is thus effective overseas. The answer is “yes.”

On the other hand, however, the worker protection aspect of *kaizen* is not so easy to transfer. This is because of the significant differences that exist between Japan and other countries in aspects such as employment practices and labor unions. The features of Japanese business management can be summarized in terms of the following three characteristics: company-based labor unions, seniority systems, and lifetime employment.

Unlike in many countries, where labor unions are formed based on industry, labor unions in Japan are formed for each company. Japan has also adopted a system of lifetime employment, where employees are expected to work at the same company from the time when they graduate from university until they reach the designated retirement age, often 60 years old. In addition, the compensation system is structured so that pay increases are based on seniority (age). These systems differ substantially, not only from those of Europe and the United States, but also from those used in developing countries. In this context, the worker protection aspect of Japanese *kaizen* cannot be directly applied in a foreign context.

To understand this, it is necessary to understand the relationship between employment and productivity. An increase in productivity will naturally lead to a reduction in the number of workers necessary. This is the cause of the concerns expressed by some that productivity advances arising from “labor-replacing technologies” such as AI will result in shrinking employment. *Kaizen* initiatives are aimed at increasing productivity. Therefore, these initiatives will result in fewer workers: those who engage in *kaizen* will effectively be putting themselves out of a job. As stated at the beginning of the chapter, *kaizen* refers to “operational improvements through a bottom-up, hands-on, participatory approach.” Why, then, would workers be motivated to engage in this bottom-up, hands-on, participatory approach, if it will only lead to unemployment?

Japanese workers’ proactive engagement in productivity improvement is substantially attributable to Japanese systems such as lifetime employment (workers are guaranteed a job) and company-based—rather than industry-based—labor unions (it is not assumed that workers will change employers). The nature of relations between employers and workers varies widely in the developing countries where international cooperation projects are implemented. While some countries (such as South Africa and many countries in Latin America) have strong, organized labor unions, some do not. In some countries, workers are in a position to oppose management. In others, workers are at the mercy of overwhelmingly powerful employers.

When considering the introduction of *kaizen* in developing countries where the nature of labor relations is unlike Japan, its nature as a universal technique is easily understood, but foreigners’ perceptions of its other aspects differ substantially from those of Japanese workers. (Japanese people’s description of the *kaizen* approach is often premised on company-based labor unions, seniority systems, and lifetime employment.) This is the reason why the topic of *kaizen*, although it may appear simple to comprehend, is often difficult to understand.

**4.3 Opposing Japanese assessments of *kaizen***

Lastly, I would like to mention the existence of opposing opinions, even within Japan, regarding the assessment of *kaizen*’s value. Despite its simple appearance, *kaizen* has given rise to conflicting perceptions of its social role within Japan. Of course, the same is true overseas. Moreover, where there is a difference in perceptions between the Japanese people and foreigners, this leaves an even stronger impression of mutual “incomprehension.” The reason why I have chosen to discuss these differences here is that in order to overcome this feeling of “incomprehension,” it is first necessary to understand (from both the Japanese and foreign perspectives) that conflicting perceptions exist.

Conflicting perceptions specifically refer to the following. *Kaizen* has been lauded as an example of the success of the “Toyota Way.” *Kaizen* has also been the target of criticism, however. This criticism is centered on two points: the intensification of labor and the bullying of subcontractors (Kamata 1973, Aoki 1978).[[5]](#endnote-5) The shifting of the burden onto subcontractors in the context of Toyota-style management, in particular, has become a social issue, with Prime Minister Takeo Fukuda even questioned about the matter at a meeting of the Committee on the Budget in Japan’s House of Representatives (Ihara 2017). Moreover, discussion of the “bottom-up, hands-on, participatory approach” generally adopts the perspective of workers. This perspective is quite different from the paternalistic tone of employers’ characterization of the issue of worker motivation.

This situation is further complicated by the fact that labor unions themselves have assumed different approaches. In some cases, conflicting standpoints are the result of two competing labor unions established at the same company, one of which is dominated by company management—thence the Japanese term “subservient union (*goyo kumiai*).” These “subservient” labor unions prioritize adherence to the interests of corporate management. (In many companies, it was vital for employees to join these unions to gain promotion. In the past, those who chaired such unions—Ichiro Shioji at Nissan, for example—were able to acquire substantial power inside companies.) At the same time, some unions engaged in activities quite distinct from this cooperative approach to industrial relations, taking positions antagonistic to corporate management. Thus, even among labor unions, there was a difference of opinion on the assessment of *kaizen* in terms of how employees should be made to work.

In summary, even in the Japanese domestic context, two different perspectives on *kaizen* existed right from the start: the view of *kaizen* in terms of quality and productivity (the corporate perspective), and the perspective of workers. This duality is linked to the ambiguity of the term and the various meanings that it has taken on, even within Japan.

At the same time, there is a pervasive attitude within the basic *kaizen* approach that “important on-site (*genba*) matters must be considered on-site (*genba*).” This *genba-shugi* (a belief in the hands-on or on-site approach) has the effect of further obfuscating the meaning of *kaizen*. As discussed in the previous section, *kaizen* refers to efforts to find appropriate “on-site” solutions to improve productivity, in contrast to production improvements based on a Fordist, top-down approach or formal solutions prescribed by experts. The direction of *kaizen* improvements is therefore completely unpredictable. This makes it a very challenging method from an organizational management perspective. At the same time, however, *kaizen* does not seek a “definition” or “formula” for its solutions, but rather seeks to find “solutions adapted to the specific situation (*genba*).” Solutions will differ depending on the company and the specific situation (*genba*). For this reason, in any discussion of *kaizen*, it is necessary to understand the “context” to comprehend the meaning of the term. In other words, kaizen is not the “application of a predefined methodology” but rather “the discovery of solutions in the context of each company or specific situation (*genba*)”—not “logic” but “context.” In Japan, it is often necessary to “read the room” or “read between the lines” according to TPO (time, place, and occasion). This is no doubt also linked to the emphasis on *genba* at Japanese companies.

However, this overemphasis of the search for *genba*-based solutions also has the effect of producing scattered effects rather than an overall logic. Despite its simple definition, the content indicated by the term *kaizen* defies clear description, and it has taken on extremely broad connotations. Consequently, *kaizen* has become an enigmatic term. This is not simply an issue of translation: the substance of *kaizen* itself is also difficult to grasp.

**5. Conclusion**

As described in this chapter, *kaizen* refers to a management method to achieve continual operational improvement through a bottom-up, hands-on, participatory approach. In Japan, it draws on the two derivations: the initiatives focused on quality improvement introduced by Dr. Deming from the United States, and “productivity improvement including support for workers’ unions,” likewise from the United States, implemented as part of U.S. aid for Japan. As a management method, it represents the adaption and improvement of the method introduced to Japan from the United States. It can therefore be transferred to other countries. There is much existing research demonstrating the effectiveness of introducing *kaizen* to developing countries. This type of cooperation is likely to be effective in the future as well.

There are a few points that must be considered, however, regarding the transfer of *kaizen* through international cooperation. As discussed in this chapter, Japan is home to a characteristically Japanese style of business management centered on company-based labor unions, seniority systems, and lifetime employment. This differs substantially from business management in other countries. Naturally, the implementation of worker protection in Japan has been premised on Japanese-style business management. Therefore, the worker protection aspect of *kaizen* cannot be transferred directly to other countries, where conditions are different. Neither should *kaizen* in other countries be characterized in terms of the way it is implemented in Japan. This is because of the inevitable difference in the level of commitment to the company between lifetime employees and other workers.

When introducing the *kaizen* method in a foreign country, it is vital for those on both the Japanese and foreign sides to comprehend it based on an understanding of national differences in labor conditions and other factors. Cooperation based on a recognition of these differences will aid in mutual understanding. Moreover, the introduction of *kaizen* overseas may not lead to an increase in workers’ pay, as it has in Japan. It is also uncertain whether employment will grow as a result. However, given the improvement in the standard of living for many people in developing countries that can be achieved from a successful private sector in these countries, it is to be hoped that the introduction of *kaizen* is complemented by some form of additional support in areas such as worker protection.

**References**

References in English

Bruhn, Miriam, Dean Karlan, and Antoinette Schoar. (2010) “What Capital is Missing in Developing Countries?” *American Economic Review* 100(2): 629–633.

https://doi.org/10.1257/aer.100.2.629.

Bruhn, Miriam, and Bilal Zia. (2011) “Stimulating Managerial Capital in Emerging Markets.” *The Impact of Business and Financial Literacy for Young Entrepreneurs* (5642).

Chang, Ha-Joon. (2002) *Kicking away the ladder: development strategy in historical perspective*. Anthem Press.

Dinh, Hinh T, Vincent Palmade, Vandana Chandra, and Frances Cossar. (2012) *Light manufacturing in Africa: Targeted policies to enhance private investment and create jobs*. World Bank Publications.

Higuchi, Yuki, Edwin P. Mhede, and Tetsushi Sonobe. (2019) “Short- and medium-run impacts of management training: An experiment in Tanzania.” *World Development* 114: 220–236. <https://doi.org/https://doi.org/10.1016/j.worlddev.2018.10.002>.

Hosono, Akio, John Page, and Go Shimada, eds. (2020) *Workers, Managers, Productivity - Kaizen in Developing Countries*. Singapore: Palgrave Macmillan.

Imai, Masaaki. (1986) *Kaizen:* The *key to Japan's competitive success*. McGraw-Hill/Irwin.

---. (2005) *Gemba kaizen*. Computer Press.

Lemma, Alberto F. (2018) “The role of Kaizen in economic transformation.” *ODI Working Paper* (533).

Lin, Justin. (2014) *The quest for prosperity*. Princeton University Press.

Lin, Justin, and Ha‐Joon Chang. (2009) “Should Industrial Policy in developing countries conform to comparative advantage or defy it? A debate between Justin Lin and Ha‐Joon Chang.” *Development policy review* 27(5): 483–502.

Mano, Yukichi, Alhassan Iddrisu, Yutaka Yoshino, and Tetsushi Sonobe. (2012) “How Can Micro and Small Enterprises in Sub-Saharan Africa Become More Productive? The Impacts of Experimental Basic Managerial Training.” *World Development* 40(3): 458–468. https://doi.org/10.1016/j.worlddev.2011.09.013.

McKenzie, David, and Christopher Woodruff. (2014) “What are we learning from business training and entrepreneurship evaluations around the developing world?” *The World Bank Research Observer* 29 (1): 48–82.

Noman, Akbar, and Joseph Stiglitz, eds. (2017) *Efficiency, Finance, and Varieties of Industrial Policy*. New York: Columbia University.

Noman, Akbar, and Joseph E Stiglitz, eds. (2015) *Industrial policy and economic transformation in Africa*: Columbia University Press New York.

Noman, Akbar, Joseph E Stiglitz, and Ravi Kanbur, eds. (2019) *The Quality of Growth in Africa*: Columbia University Press.

Ohno, Taiichi. (1982) “How the Toyota production system was created.” *Japanese Economic Studies* 10(4): 83–101.

Ohno, Taiichi, and Norman Bodek. (2019) *Toyota production system: beyond large-scale production*. Productivity Press.

Otsuka, Keijiro, Tetushi Sonobe, Mieno Fumiharu, Takashi Kurosaki, Go Shimada, Naohiro Kitano, Ken Odajima, and Suguru Miyazaki. (2017) *Training-Infrastructure-Finance (TIF) Strategy for Industrial Development in Sub-Saharan Africa.* JICA Research Institute (Tokyo).

Shimada, Go. (2015) “The Economic Implications of a Comprehensive Approach to Learning on Industrial Policy - the Case of Ethiopia.” In *Industrial Policy and Economic Transformation in Africa*, edited by Akbar Noman and Joseph E. Stiglitz, 102–122. Columbia University Press.

---. (2017) “Inside the Black Box of Japan’s Institution for Industrial PolicyーAn Institutional Analysis of the Development Band, Private Sector, and Labor.” In *Efficiency, Finance, and Varieties of Industrial Policy*, edited by Akbar Noman and Joseph E. Stiglitz, In Guiding Resources, Learning, and Technology for Sustained Growth, 156–190. Columbia University Press.

---. (2019) “Does Environmental Policy Make African Industry Less Competitive? - The Possibilities in Green Industrial Policy.” In *The Quality of Growth in Africa*, edited by Ravi Kanbur, Akbar Noman and Joseph E. Stiglitz, 350–372. New York: Columbia University Press.

Shimada, Go, Toru Homma, and Hiromichi Murakami. (2013) “Industrial development of Africa.” *For Inclusive and Dynamic Development in Sub-Saharan Africa*: 173–194.

Shimada, Go, and Tetsushi Sonobe. (2021) “Impacts of management training on workers: Evidence from Central America and the Caribbean region.” *Review of Development Economics* 25(4): 1492–1514. https://doi.org/10.1111/rode.12773.

Solow, Robert M. (1956) “A contribution to the theory of economic growth.” *The Quarterly Journal of Economics* 70(1): 65–94.

Sonobe, Tetsushi, and Keijiro Otsuka. (2014) *Cluster-Based Industrial Development: Kaizen Management for MSE Growth in Developing Countries*. Springer.

Suzuki, Aya, Hoang Nam Vu, and Tetsushi Sonobe. (2014) “Willingness to pay for managerial training: A case from the knitwear industry in Northern Vietnam.” *Journal of Comparative Economics* 42(3): 693–707. https://doi.org/10.1016/j.jce.2013.07.001.

Womack, James P, Daniel T Jones, Daniel Roos, and DS Carpenter. (1991) *The Machine that Changed the World*. Rawson Associates.

References in Japanese

Araki, Satoshi. (1978) *The Real Toyota (Toyota Sono Jitsuzo)*. Choubunsha.

Fujimoto, Takahiro. (2001) *Introduction to Production Management I-II (Seisan Manejimento Nyumon I-II Kan)*. Nikkei.

Ihara, Ryoji. (2016) *The Power of Place: Toyota and Nissan: A Comparative Analysis of Workplaces (‘Ba’ ni Ikiru Chikara: Toyota to Nissan ni Miru: Rodo Genba no Hikaku Bunseki)*. Sakurai Shoten.

Ihara, Ryoji. (2017) *The Kaizen of Waste, the Waste of Kaizen: the <Penetration> of Toyota Production Systems and the <Transformation> of Modern Society (Muda no Kaizen, Kaizen no Muda: Toyota Seisan Shisutemu no <Shinto> to Genda Shakai no <Henyo>)*. Kobushi Shobo.

Kamada, Satoshi. (1973) *Automobile Despair Factory: The Diary of a Seasonal Worker (Jidosha Zetsubo Kojo: Aru Kisetsuko no Nikki)*. Gendaishi Shuppankai.

Ohno, Taiichi. (1978) *Toyota Production System: Beyond Large-Scale Production (Toyota Seisan Hoshiki: Datsukibo no Keiei wo Mezashite)*. Diamond.

Shimada, Go. 2018a. “Achievements and Further Issues in Kaizen Research for International Development: Deriving Policy Implications from Interdisciplinary Approach” *Journal of International Development Studies* 27(2):1-11.

Shimada, Go. (2018b) “The US Aid Strategy for Productivity Improvement in Japan after World War II with a Focus on Labor Unions: Japan's Experience as a Recipient Country” *Journal of International Development Studies* 27(2):69–84.

Shimada, Go. (2018c) “Postwar US Productivity Improvement: What Was Japan’s Experience as the Recipient of US Aid? (*Sengo Amerika no Seisansei Kojo, Tainichi Enjo ni okeru Nihon no Hienjokoku to shite no Keiken ha Nanika*)” *JICA Research Institute Background Papers of the Research Project ‘Japan’s Development Cooperation: A Historical Perspective’* 2:1–48.

Shimada, Go.( 2021) “Boosting Productivity and Personnel Capabilities in Developing Countries—Human Resources Development Inside and Outside Companies (*Tojokoku no Seisansei to Jinzai no Noryoku Kojo—Kigyonai to Kigyogai de no Jinzai Ikusei*)” Izumi Ono ed. *Industrial Personnel Development in Developing Countries: Knowledge and Technology in the Era of SDGs (Tojokoku no Sangyo Jinzai Ikusei: SDGs Jidai no Chishiki to Gijutsu)*. Nippon Hyoronsha.

Tatezawa, Koji. (1985) *The Tragedy of the Toyota Production System—The Lament of Employees and Subcontractors: the ‘Kanban’ People (Toyota Seisan Hoshiki no Higeki—‘Kanban’ Ningen ni Sareta Shain, Shitauke no Dokoku)*. Apple Publishing.

1. Stiglitz and Greenwald (2015), for example, lauded the role of*kaizen* (which they referred to as “just in time”) in creating a “learning society.” Otsuka et al. (2017) provided a new perspective on new theories of industrial policy through progressive empirical research on micro-economic factors such as *kaizen*, advocating the Training-Infrastructure-Finance (TIF) strategy. The TIF strategy emphasizes a specific sequence (order) of implementation, with sequential support provided to develop human capital, then build infrastructure, then support finance. [↑](#endnote-ref-1)
2. This ability was traditionally treated by economists such as Solow (1956) as a residual (not an important factor) in the production function. Now, however, management capital was reassessed as an “important factor in economic growth.” [↑](#endnote-ref-2)
3. The Toyota Production System (TPS) is a well-known example of *kaizen*. TPS has been defined by Taiichi Ohno, who codified it, as follows (Ohno 1982). 1) TPS is aimed at thoroughly eliminating waste though *kaizen*; 2) TPS promotes “just-in-time” and the automation of all processes (Toyota uses a unique way of writing automation—*jidoka*—in Japanese, which includes the character for “human”); 3) In this way, TPS enables the visualization of the entire production line, and the identification of weak sections; 4) TPS involves the workers in running the workplace and resolving issues on the factory floor (*genba*). In other works, it is clear that TPS, like *kaizen*, refers to “operational improvements through a bottom-up, hands-on, participatory approach.” [↑](#endnote-ref-3)
4. The *kanban* system is a method adopted by Toyota to manage production using blackboards and whiteboards (*kanban*). It is used to control the flow of products between processes to ensure just-in-time manufacturing. [↑](#endnote-ref-4)
5. Examples of the former include the reportage-style *Automobile Despair Factory (Jidosha Zetsubo Kojo)* by Satoshi Kamada (1973), who actually worked at a Toyota factory, and *The Real Toyota (Toyota Sono Jitsuzo)* by Satoshi Araki (1978). Examples of the latter include *The Tragedy of the Toyota Production System—The Lament of Employees and Subcontractors: the ‘Kanban’ People (Toyota Seisan Hoshiki no Higeki—‘Kanban’ Ningen ni Sareta Shain, Shitauke no Dokoku)* by Koji Tatezawa (1985). [↑](#endnote-ref-5)