

Individual City-centered Networks for Sustainable Vitalization of Cities in the Post-growth Society: Through a Case Study of Japanese Regional Hub Cities

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At the beginning of the 21st century, Japan was the first country in the world to transition to a depopulating society that could be conceptualized as a post-growth society. Many cities have already fallen into population decline since the 1990s. The difference in growth between cities has become noticeable after that. In four regional hub cities such as Sapporo, Sendai, Hiroshima, and Fukuoka, Fukuoka's centrality and vitality have greatly exceeded those of other cities. Fukuoka has positioned itself as an Asian gateway in response to globalization and formed a network with the Asian region, such as international airline routes. For revitalizing sustainably Japanese cities in the future, it is important to form intercity linkages centered on individual cities, recognizing the limits of growth owing to the hierarchical intercity bonds. Various actors gathering in the city in addition to the local government are involved in forming a network centered on their own city. It is expected the local government to create an environment for them to be able to form interrelationships inside and outside the city.

Keywords: individual city-centered network, post-growth society, depopulation, hierarchical city linkage, regional hub city, Japan

1. Introduction

The Japanese population reached its peak in 2008 and continued to decline thereafter. Since 2010, the number of people has decreased by around twenty thousand people annually. This decline in population is caused by a declining birthrate. The fertility rate of Japan declined from 2.13 in 1970 to 1.54 in 1990, and to 1.34 in 2019^[1]. Moreover, despite of the above demographic transition, the concentration of population in the Tokyo metropolitan area continues. For that reason, a large part of

provincial cities fell into shrinking cities in population in the 1990s^[2, 3].

Paralleling with the aforementioned demographic transition, the Japanese economy faced structural changes in the 1990s. The bubble economy which appeared in the latter half of the 1980s burst in 1991, and the Japanese economy fell in a long-term recession. In such circumstances, large enterprises restructured their organizations, including closing their domestic establishments. As a result, since many local cities had depended on investment from outside enterprises for their development before, they faced stagnation of investment by private capital. Thus, local cities have emphasized the concept of sustainability rather than growth in their comprehensive development plans. There

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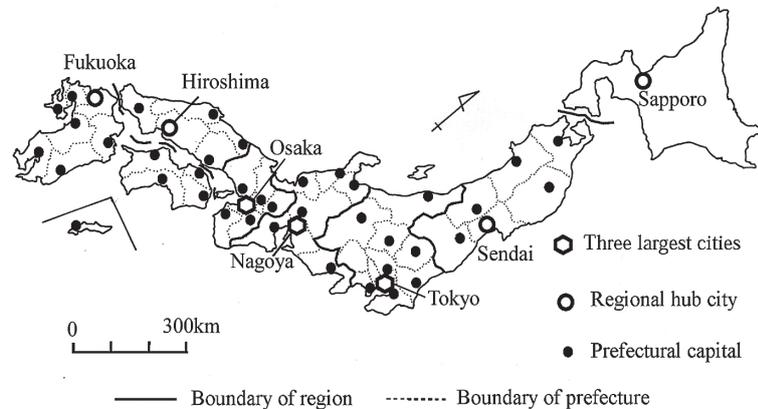


Figure 1: Main cities in Japan

was no exception to the four regional hub cities of Sapporo, Sendai, Hiroshima, and Fukuoka.

Regional hub cities have rapidly grown since the 1950s, which is one of the phenomena that characterize post-war urbanization in Japan, in addition to the concentration of people in the three largest metropolitan areas: Tokyo, Osaka, and Nagoya. This rapid growth was brought about not by industrialization but mainly by the agglomeration of branch offices of nationwide companies. Owing to this growth, they were called “*branch office economy city*.” However, the agglomeration of branch offices changed from stagnation to further decline in the mid-1990s.

Since four regional hub cities are expected to play the role of dams stopping the outflow of people from provinces to the Tokyo metropolitan area in the national spatial development plans, they are required to sustain the centrality and base for performing the expectation. For this reason, regional hub cities need to look for other ways that are different from the agglomeration of branch offices for sustainable vitalization of cities. This paper proposes the formation of individual city-centered networks as a measure for sustainable vitalization of regional hub cities.

2. Sustainable vitalization of regional hub cities by individual city-centered networks

2.1. Regional hub cities depending on branch office economies

2.1.1 Rapid growth and its characteristics of regional hub cities

Figure 1 shows the main cities of Japan. The

four regional hub cities of Sapporo, Sendai, Hiroshima, and Fukuoka are located in the Hokkaido, Tohoku, Chugoku, and Kyushu regions, respectively. After the Second World War, the branch offices of national government bodies that had jurisdiction over the entire region were newly established in regional hub cities, corresponding with the democratization of the country. Following this, many nationwide companies established their branch offices. As a result, along with the agglomeration of company’s branch offices, regional hub cities have rapidly grown since the late 1950s, despite the concentration of population in the three largest metropolitan areas. As a result, in the 1960s, the four regional hub cities were distinguished from other prefectural capitals and recognized as the urban hierarchy following the former six major cities^[4]. At the same time, it became the city of branch office economy as cities whose urban economy depends heavily on branch office activities.

Figure 2 shows the increase in branch office employees in each of the four regional hub cities since 1981. Branch office employees in regional hub cities increased significantly during the bubble economy in the late 1980s and stagnated in the early 1990s after the collapse of the bubble economy. Subsequently, it decreased remarkably in the late 1990s. The decline in branch office employees was a first-time phenomenon for regional hub cities. Although it could be understood as a phenomenon owing to the economic recession at first, it was not a temporal change but a structural change. The decline in

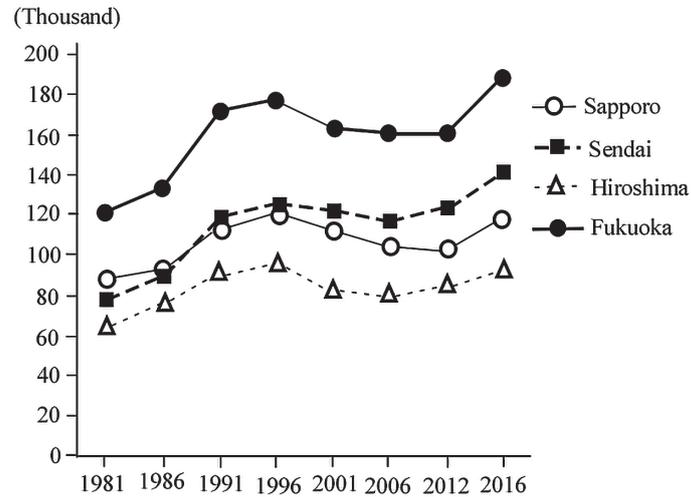


Figure 2: Changes in numbers of branch office employees in four regional hub cities

Source: Japanese Establishment and Enterprise Census, 1981–2006, Economic Census, 2012–2016; ^[6]

branch office employees continued until 2012 ^[5], ^[6].

After 2012, the number of employees in branch offices of regional hub cities turned to increase at last. This recovery of branch office employees, however, does not mean the return to the situation before the 1990s. The increase in branch office employees since 2012 was mainly due to the increase in branch office employees belonging to the business service industry, such as temporary personnel business and security services. Branch office employees in old industries such as wholesale, construction, finance/insurance, and transportation/communication did not return to the level in the mid-1990s.

2.1.2 Implication of shrinkage in the agglomeration of branch offices in regional hub cities

In Japan, the concentration of large companies in Tokyo is remarkable. According to a report on listed companies in 1999, 51% of the 2497 listed companies nationwide were headquartered in the Tokyo metropolitan area. In addition, 24% of them were headquartered in the Osaka metropolitan area. As a result, a large number of branch offices in regional hub cities were headquartered in Tokyo or Osaka. According to a survey conducted in Sendai in 1990, approximately 62% of branch offices in Sendai were headquartered in Tokyo ^[7]. The cases of other regional hub cities were

similar to those of Sendai. Therefore, from the viewpoint of national spatial structure, the increase in agglomeration of branch offices in regional hub cities can be understood to strengthen the hierarchical linkages between Tokyo and regional hub cities.

Therefore, regional hub cities could grow rapidly by strengthening hierarchical linkages with Tokyo. Moreover, branch offices located in regional hub cities were assigned territories, and their activities were limited to their own regions, such as Hokkaido, Tohoku, Chugoku, and Kyushu. Some branch offices have sub-branches in other prefectural capitals in their own region; thus, the hierarchical relationship between regional hub cities and prefectural capital was also strengthened. Therefore, the decline of the agglomeration of branch offices in regional hub cities implies that the urban growth depending on hierarchical inter-cities linkages is not to be expected in the future as it had been thus far. Regional hub cities are needed to explore alternative ways to achieve sustainable vitalization instead of hierarchical intercity linkages.

2.2 Type of intercity linkages and actors forming an individual city-centered network

2.2.1 Three types of intercity linkage

Figure 3 shows three types of potential intercity linkages drawn by focusing on

the regional hub city [5], [6]. Type A displays the intercity linkage through branch offices established in regional hub cities by the national government and nationwide companies. The characteristics of this linkage consisted first of the hierarchical connection with an upper-tier city (Tokyo), and second, of a regional hub city's activities sphere being limited within a territory assigned by an upper-tier city. The latter means that the activities of the regional hub city do not extend beyond their own region. Therefore, in this linkage, a regional hub city is not able to absorb direct spillover effects of economic development from other regions and abroad, but only indirectly through Tokyo.

Type B comprises a pattern in which the regional hub city is a gateway for other cities in the region. For example, when local companies expand their selling activities across the country or abroad, they are thought to establish their branch offices in the regional hub city to utilize the external economies of regional hub cities, such as transportation and telecommunication infrastructure. In such cases, this type of linkage occurs. Type B intercity linkages have not grown sufficiently in Japan, as local companies tend to jump over regional hub cities and set up bases in Tokyo when they grow into nationwide companies. However, in Fukuoka only, there are some local companies and Korean companies based in Fukuoka to expand their business [8], [9].

Type C is significantly different from types A and B. In type C linkages, a regional hub city occupies the center of intercity linkages. There are no boundaries that limit the activities of actors

in a regional hub city. A regional hub city connects directly and horizontally to cities of various sizes around the country and abroad. Since this type of intercity linkage is characterized by locating its own city in the geographic center and connecting horizontally with other cities, it can be called an individual city-centered network. Linkages between cities created by a local company forming a direct relationship with a business operator in another city for the purpose of trading or business alliances can be classified into this type. Like a sister-city relationship, connections with other cities that local governments form for various purposes is also this type of city linkage. In addition, the academic exchanges of universities are also a component of this type of urban linkage.

Moreover, there has been an upsurge in festivals organized by civic-volunteer groups and professional sports clubs that have been supported by citizens in regional hub cities since the 1990s. They are also the impetus for forming type C intercity linkages. In Sendai, the *Jyozenji Street Jazz Festival* is held every second weekend in September. This festival was first initiated by a small group of local merchants operating on the Jyozenji street. However, in a short period of time, the festival evolved into a festival run by an executive committee of citizen volunteers. At present, the executive committee is working in cooperation with various organizations such as local government agencies, companies, news media, commercial and industrial organizations, etc., to set up and operate the venue and gather finance. According to the announcement of the executive committee in 2012, 769 amateur music bands took

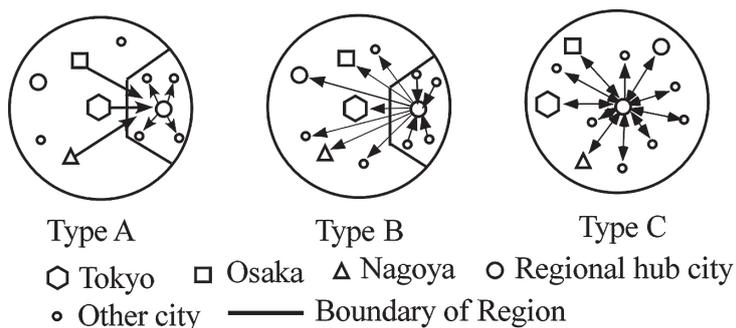


Figure 3: Three types of inter-city linkages in regional hub city
Source: [5], [6]

part in the festival from around the country, and famous overseas jazz bands were invited. About 840,000 visitors enjoyed this music festival^[5]. This kind of interaction between people also forms the basis for creating a connection between Sendai and other cities, despite indirection.

Since this type of intercity linkage is formed by a large number of actors as seen above, it is sustainable as a whole, even though individual intercity linkages may be thin and fragile. Moreover, since this type of linkage has been underdeveloped, further development is expected in the future. From these aspects, type C of intercity linkage can be evaluated as another way with high potential to maintain the sustainable vitality of the city in addition to hierarchical linkages.

2.2.2 Actors that Form Individual City-Centered Networks

Figure 4 shows conceptually actors forming the above type C linkages and the pattern of their networks^{[5], [6]}. Various organizations and individuals gathering in regional hub cities have the potential to become the actors that form this type of intercity linkages: citizens, civil society, local government, other administration bodies, educational institutions,

local enterprises, trade associations, and cultural organizations. Even travelers become potential actors forming this type linkages.

These actors have relationships with similar actors outside the cities for their own purposes. Simultaneously, these actors form relationships with other organizations/individuals through various opportunities in the city. Like the *Jozenji Street Jazz Festival*, individual city-centered networks develop through the mutual relationships that various actors have with actors inside and outside the city.

Moreover, intercity linkages formed for one purpose may create cooperation for other purposes. For instance, a sister-city relationship, which aims to build friendships between citizens of two cities, often relates to historical and cultural ties. Even in this case, the inter-relationships may develop into an economic interchange in addition to friendship activities. Furthermore, it is quite conceivable that urban events will enhance the attractiveness of the city, attract human resources to start businesses in the city or promote the retention of students who start businesses that create intercity linkages.

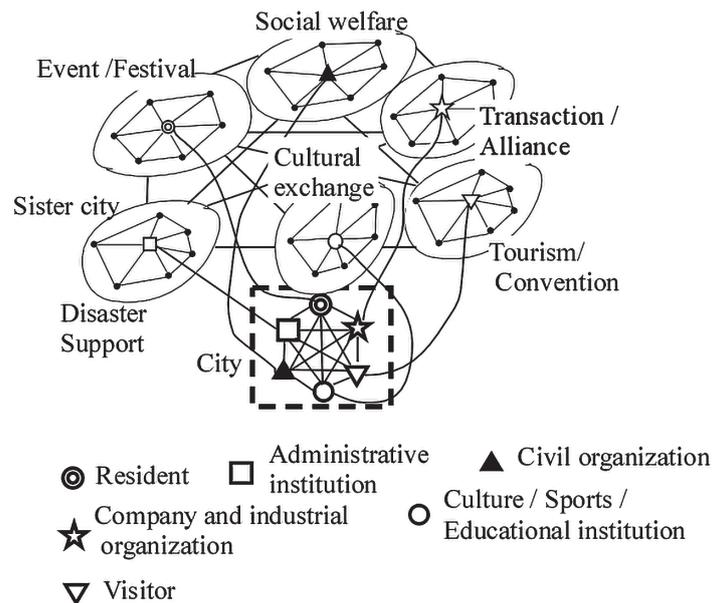


Figure 4: Conceptual diagram of actors forming inter-city linkages
Source: [5], [6]

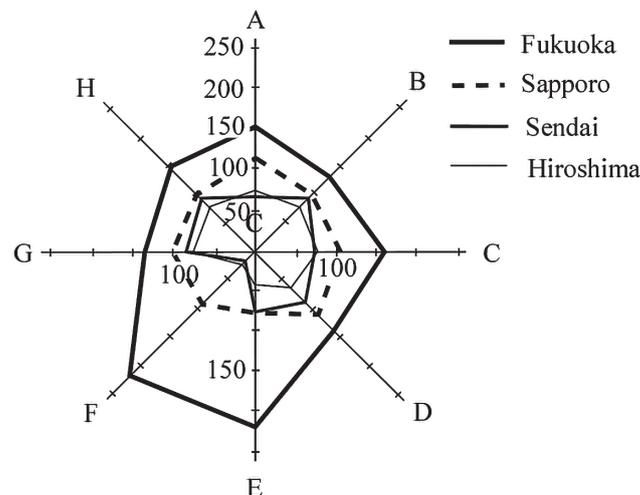
2.3 Challenge for the formation of individual city-centered network

2.3.1 Fukuoka's orientation toward the Asian gateway through linkages with Asian cities

In the 1990s, among the four regional hub cities, Fukuoka began to show a remarkable difference in various indicators of population growth and central functions from the other three cities (Figure 5). One of the reasons is that Fukuoka City succeeded in forming an exchange-based city in Asia. The above strategy was presented as a future Fukuoka City image in the comprehensive plan formulated in 1988. Behind Fukuoka's drawing this city image, she has been the door of Japan to the Asian continent since ancient times, and in the internationalization, there was a history and cultural background which primarily prioritized the exchange with the Asia

region. In 1989, the Asia-Pacific Exposition was held to commemorate the 100th anniversary of the municipal system, and its successful attracted 8.2 million visitors.

Since then, Fukuoka City has actively promoted exchange projects with the Asian region and the corresponding infrastructure development: Fukuoka Asian Month Event and Fukuoka Prize in 1990, Asian-Pacific Festival in 1991, Fukuoka International Film Festival in 1994, Fukuoka Asian Art Museum in 1999, etc.^[10]. Twenty one international airline routes had been established in Fukuoka Airport as of 2018. Only six routes of them were opened before 1990, connecting Busan, Seoul, Beijing, Shanghai, Hong Kong, and Taipei^[11], and the opening of routes connecting Fukuoka to Beijing and Shanghai was as late as 1987. That is, most of the current international routes at Fukuoka Airport have been established since Fukuoka City



- A: Number of listed enterprises in 2018
 B: Annual wholesale sales in 2016
 C: Number of employees of information and communication industry in 2016
 D: Number of entertainment venues and groups in 2016
 E: Number of international conference in 2016
 F: Number of passengers on international airline routs in 2016
 G: Passengers of getting on and off at main railway station in 2016
 H: Number of students of universities and colleges in 2016

Figure 5: Comparison of higher-level central functions of regional hub cities
 Source: [6], [10]

Note: The numerical values in the figure indicate the relative evaluation values of each city when the average value of the four cities is set to 100.

started its efforts with the goal of establishing an exchange base in Asia. These routes directly connect Fukuoka and major cities in Asia, which corresponds to the type C inter-urban coupling described earlier.

At the end of the 1980s, other regional hub cities also envisioned airport development and the construction of convention facilities in their basic plans in response to the Fourth National Comprehensive Development Plan, which set the promotion of internationalization as an important measure. However, unlike Fukuoka, they could not envision a concrete goal, such as the formation of an exchange base in Asia as a measure for corresponding to globalization. Therefore, it can be considered that other regional hub cities could not set up sustainable projects corresponding to globalization.

As a result, the other three cities could not form a network connecting the Asian region with remarkable economic growth, such as Fukuoka. It can be considered that this led to the formation of a disparity between Fukuoka and other regional hub cities in terms of the number of passengers on overseas routes and the number of international conferences attracted (Figure 5). In addition, while both hardware and soft measures corresponding to Fukuoka's globalization since the 1990s have been developed, the expansion of Korean companies into Fukuoka has been seen; in this process, a relationship of trust has been established between Korean companies and local companies and administrative agencies^[9].

2.3.2 Citizenship development plan in Sendai City's comprehensive plan

Sendai City has set up the development of citizenship as a priority measure in the Fourth Comprehensive Development Plan^[12]. Citizenship here was explained as "the ability of various actors such as individuals, regional organizations, civil societies, and companies to voluntarily work to solve problems and create attractiveness in cities and regions. As a measure, the "Museum City" concept was set up. A museum city is defined as "a city where various resources, facilities, events, human resources, etc. in Sendai are organically connected, and the entire city

becomes one museum, where citizens and visitors can enjoy learning and spend a rich time."

To that end, the Sendai government plans to increase the dissemination of information on the city administration, improve the learning environment for citizens, and expand collaboration with citizens to encourage citizens to participate in the municipal administration. Figure 4 shows that, in the formation of a network centered on the city, various actors in the city cooperate with external individuals and organizations for their respective purposes, and also form relationships with various actors inside the city. It can be understood that the idea of the museum city of the Sendai Comprehensive Development Plan is expected to expand the network shown in Figure 4 through the development of the problem-solving ability of the citizens.

3. Conclusion

Regional hub cities in Japan rapidly developed in the late 20th century by strengthening the hierarchical linkages with Tokyo through the agglomeration of branch offices of nationwide companies. This agglomeration of branch offices and their hierarchical intercity linkages with Tokyo serves as the main base for supporting the economic activity of regional hub cities. It can be seen that this point will not basically change in the future.

However, with the transition of Japanese society to a post-growth society after the 1990s, it can no longer be expected that hierarchical intercity connections will continue to expand as they did before. Therefore, for Japanese cities to continue to revitalize in the future, it is necessary to foster a type of intercity linkage that differs from the hierarchical intercity linkages. In relation to this problem, by identifying the three types of intercity linkages, the formation of individual city-centered networks was proposed to be necessary for sustainable urban revitalization in the future.

As a precedent example of such network formation efforts, Fukuoka City, which was working on the formation of a base city in Asia in the 1990s, could be introduced. It opened air

routes that directly connect to each region of Asia centered on Fukuoka and the holding of various events on the theme of Asia. The case of Fukuoka City is one where the local government took the initiative to form a network centered on its own city.

However, various actors, such as citizens, civil societies, local companies, commercial and industrial organizations, and educational institutions that gather in the city are involved in forming a network centered on their own city. Therefore, it is necessary to know what kind of organizations and people outside the city these actors are working with, and investigate what kind of environment they are looking for in forming and expanding such relationships. It is expected that the knowledge obtained in this way will be reflected in sustainable development planning in cities. Moreover, it is expected that the possibility of network formation by citizens will increase by enhancing the learning environment of citizens, as shown in the comprehensive development plan of Sendai City. At the same time, linkages among various actors within the city are indispensable for the development and success of business, as seen in the citizen-centered event in Sendai. In that respect, it is also necessary to develop a mechanism to encourage cooperation between actors in the city. These interrelations that are formed inside and outside the city by various actors are expected to work synergistically to increase the external population and organizations associated with the city, resulting in stimulus, information, and ideas for revitalization of the city.

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References

- [1] Ministry of Health, Employment and Welfare. *Annual Health, Labour and Welfare Report 2020*.
- [2] Morikawa H. *Jinkougenshojidai no Toshishisutemu to Chiikiseisaku* (Urban system and regional policy in the population decline era). Kokonshoin, Tokyo; 2017. 239p.
- [3] Yahagi H. *Toshishukusho no Jidai* (Era of urban shrinking). Kadokawashoten, Tokyo; 2009. 201p.
- [4] Kitagawa K. Nihon niokeru kouikichushintoshi no hattatsu to igi (Development of the city as the center of large region in Japan). *Jpn J Hum Geogr*, 1962; 14:242-262.
- [5] Hino M. Image of the post-growth city: recent transformation of Japanese regional central cities. In: Hino M. and Tsutsumi J. eds. *Urban Geography of Post-Growth Society*. Sendai: Tohoku Univ Press; 2015. p. 179- 195.
- [6] Hino M. Individual city-centered networks for sustainable vitalization of regional hub cities. *Ann Jpn Assoc Econ Geogr*, 2018; 64: 335-345.
- [7] Hino M. *Toshi Hatten to Shiten Richi* (Development of City and Location of Branch Offices). Kokonshoin, Tokyo; 1996. 220p.
- [8] Noma S. *Gurohbaru-jidai no Chiiki-senryaku* (Regional Strategies in the Global Era). Minerubashobo, Kyoto; 2000. 241p.
- [9] Pak C. *Higashi-Ajia no Kigyo/Toshi no Nettowahku* (Networks of City/Enterprise in East Asia), Kokonshoin, Tokyo; 2001. 275p.
- [10] Fukuoka Asian Urban Research Center. *Fukuokashi niokeru Ajiaseisaku no Kako/Genzai/Mirai 1* (Past, Present, and Future of Policies to Asia in Fukuoka City, No.1). Fukuoka Asian Urban Research Center; 2009. 95p.
- [11] Fukuoka Airport Building Co., Ltd.. *Fukuoka Kukou no Gojyunen no Ayumi* (50 Years of History at Fukuoka Airport). Fukuoka Airport Building, Fukuoka; 2017. 235p.
- [12] Sendai Municipality. (2011): *Sendai-shi Kihonkousou/Kihonkeikaku Toshin* (Report on Master Plan of Sendai City). Sendai Municipality, 2011. 114p. (http://www.city.sendai.jp/machizukuri-kakuka/shise/zaise/kekaku/sogo/sogo/documents/kihonkousou_kihonkeikaku.pdf).

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