Geographical Studies on Retail Chain Development and Restructuring of Retail Systems in Japan

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Abstract This study reviews geographical studies on Japan's retailing systems. Retail system studies encompass several topics: 1) economic growth and retail development in the 1960s, 2) retail format diversification beginning in the 1980s, 3) informatization in Japan's distribution systems, 4) suburban retailing development in the 1990s, and 5) Japan's distribution system internationalization. To explain these themes comprehensively, this study sets up two domains, "retail store location" and "retail chain management," both of which are related to each other. For example, information and delivery networks have influenced store locations, because chain stores try to reduce total delivery costs as far as possible by store location strategies, for instance, high density store networks for convenience store chains. This study aims to explain how retail chains developed their own networks in Japanese consumer markets and impacted and restructured Japanese retailing systems.

Key words retail store location, retail chain management, Japanese retailer internationalization, retail system restructuring, geographical studies

Introduction

Retail systems are one of the most popular research fields in Japanese geographical studies. Retail system research has largely covered urban and economic geographies to explain geographical changes in urban and economic circulation systems. Japanese retail systems changed dramatically during the second half of the 20th century. In particular, chain store development is crucial to understanding geographical changes of the retail system, such as suburbanization of retail locations, development of multiple retail channels, and retail system informatization (for example, Arai and Hashimoto 2004).

We must ask how geographers can address the issue of retail chain development. First, retail store location studies are the most crucial and the most classic geographical studies. Central place theory is a highly useful framework for explaining the spatial and geographical retail store distribution.

Recently, retail store locations have changed dramatically. Store size has been increased. Chain stores occupy most retail store locations. After the 1960s, Japanese retail chain development caused changes in retail geographies not explained by the central place theory. Walter Christaller had studied central place theory mainly in first quarter of the 20th century (Christaller 1933), and central place theory could no longer explain the mechanism of chain stores, for instance, location strategies and delivery management, because chain stores have been developed aggressively from the second half of the 20th century in the developed countries. Therefore, we need other frameworks to analyze retail chain development.

Generally, local market potential and chain store management costs determine chain store locations. Retail chain management issues also strongly influence spatial networks of retail chain and the spatial restructuring of retail systems (Tsuchiya 2000; Morikawa 1993). Many Japanese geographers concentrated on several aspects of retail chain management, including information systems and logistic systems.

To explain the key issues in existing geographical studies on retail chain store development and retail system spatial restructuring in Japan, this study focuses on two points: chain store location and retail chain management. Retail chain management, for instance, information and delivery networks, has influenced store locations. Chain stores have constructed chain management systems to rationalize their businesses by developing their own store networks. In particular, chain stores try to systemize commodity deliveries from distribution centers to their own stores as smoothly and cheaply as possible.

Factors that determine chain store location are crucial to understand how those locations changed after the 1960s, when several types of chain stores, such as
supermarkets and convenience stores, evolved. Factors that determine retail chain management are also keys to understanding retail chain development after the 1980s. Information technologies such as points of sales (POS) systems have changed retail chain management. Physical distribution management for retail chains evolved because of POS systems, which enabled reduction of transport and inventory costs.

Geographical Studies on Retail Store Location

This section explains location strategies of retail chains. Retail store location is a main study area in geographical research. Leading retail chains developed several types of retail stores to expand their market share after the Second World War.

First, this section explains the trend of retail systems after the Second World War in order to understand transition of retail formats in each decade. Second, this section picks up several retail formats in order to clarify the difference between retail formats with regard to location strategies and impacts to consumer markets: supermarkets, convenience stores, specialized retail chains and shopping centers.

The trends of Japanese retail systems after the Second World War

The second half of the 20th century is a crucial period to understand the dramatic changes of retail systems in Japan. In particular, development of chain stores, for example, supermarkets and convenience stores, is the most important factor that modified geographical structures of retailing systems in Japan.

Beginning in the 1960s, when supermarkets’ locations expanded very aggressively because of the Japanese consumer market’s rapid growth, many Japanese geographers studied how supermarket locations changed the spatial structures of urban spaces and lifestyles.

After the 1970s, Japan’s consumer society increasingly stabilized as the 1960s’ rapid economic growth slowed. Therefore, aggressive supermarket chain network expansion also stopped, and store location strategies required revisions. Beginning in this period, supermarket chains began expanding convenience stores instead of supermarkets.

Muramatsu (1987, 1989) revealed the model of arranging retail formats in supermarket chains. To adapt to the consumption market’s diversity, large retailers tended to develop multi-format retail stores such as supermarkets, discount stores, and convenience stores. Large supermarket chains such as Daiei, Ito-Yokado, and Seiyu created subsidiaries to expand new retail formats, especially convenience stores, from the 1970s.

In the 1990s, the number of large stores such as supermarkets, specialized stores, and shopping centers grew rapidly because of deregulation of locating large stores in suburban areas. The development of suburban retailing reduced the use of central shopping streets in mid-size cities. Therefore, many geographers studied the suburbanization of urban retailing and its impact on central shopping streets.

To understand the trends of the 1990s, Arai and Hashimoto (2004) is one of the important academic works. In this book, there are several studies discussing geographical outcomes of structural changes of retail systems in the 1990s, for instance, informatization, deregulations and motorization.

After the 2000s, Japan’s domestic markets were influenced by conditions of deflation, severe competition and social diversification. The trend of restructuring of Japan’s distribution systems in the 2000s is clearly explained by the outstanding research of Arai and Hashimoto (2007). There are several topics, (1) the polarization of the rich and the poor in Japan’s consumption markets, (2) the emergence of new retail channels, for instance, internet shopping and non-store retailing, and (3) Japan’s distribution systems becoming part of global economies. This book discussed how the mass selling systems were restructured and how small retail systems revived in the stage of internet societies.

In addition, Tsuchiya and Kaneko (2013) discussed “the re-rising of small retail formats.” From the end of the 2000s, Japan’s society entered into the era of population decrease and aging. The size of household will become smaller and the numbers of people who cannot drive or walk will increase. To support the living of such people, more accessible and more available retail formats will be needed in Japan’s aging society.

Supermarkets

In this section, this study focuses on developments of supermarkets. After the Second World War, supermarkets emerged as the greatest trend in retail stores in Japan. Supermarkets were the first retail stores to expand mass consumption and to restructure retail systems in Japan.

In the 1960s, Japan’s economic growth markedly increased Japanese consumption, creating ideal conditions for mass selling systems such as supermarkets. In 1953, the first supermarket opened at Aoyama in Tokyo. This
supermarket was the first retail store adopting a self-service system. From the 1960s to the 1970s, supermarket chains such as Daiei, Seiyu, and Ito-Yokado developed rapidly to serve the mass consumption society.

Shuji Hayashi, a famous management studies scholar, stated in several studies (for instance, Hayashi 1962) that the retail revolution occurred in the 1960s. Hayashi suggested that, before the 1960s, many small retail stores of several types dominated Japan's retail systems, with many distribution stages from production to consumption. To overcome their low productivity, Japanese distribution systems had to reduce the distribution stages. Hayashi (1962) found that supermarket development was one of the most effective factors in overcoming Japanese distribution systems' low productivity.

Morikawa (1993) revealed how supermarkets had been spread within metropolitan areas. Supermarket locations began in metropolitan areas such as Metropolitan Tokyo and Metropolitan Keihanshin. After the 1960s, supermarkets spread from three large cities to mid-size cities such as prefectural capitals. Rural areas also developed small supermarkets gradually, such as those opened by agricultural cooperatives. Thus, mass-selling systems evolved throughout Japan.

Consumer cooperatives and agricultural cooperatives also began locating their branch supermarkets to support their union members. Ikuta (1991) and Tsuchiya (1995) examined how Japanese consumer cooperatives developed and spread their activities across Japan. Metropolitan suburban areas were the most active for consumer cooperatives because they contained many households with children who wanted to buy safer fresh and dry food. Japan's consumer cooperatives were among the most active growers and suppliers of safe foods, such as those grown organically with no agricultural chemicals, additives, and pesticides.

Metropolitan suburban residential areas grew dramatically in the 1960s and 1970s, because large population shifts from Japan's rural areas to city suburbs occurred in the 1960s. The location of new retail formats thus advanced to suburban areas with increase of the suburban population, primarily during the 1960s and 1970s.

Arai (1981, 1983) revealed how supermarkets had been located in satellite cities on metropolis outskirts. Arai selected Machida city as a case study area, a satellite city of the Tokyo metropolis that experienced rapid population growth in the 1970s. At the Machida rail station, a new department store and large supermarkets opened to serve suburban consumers. Arai also noted that supermarkets and mini-supermarkets expanded into residential neighborhoods.

Several studies have identified the characteristics of supermarket locations. For example, Ito (1978) and Ikuta (1991) analyzed the deployment of supermarkets in Keihanshin metropolitan areas, and Ito (1982) and Neda (1985, 1989) analyzed the locations of supermarkets in regional towns. These studies revealed that supermarket location points included not only suburban areas but also each city's central shopping streets and central business districts.

In the 1990s, retail activity deregulation occurred, such as the deregulation of Large-Scale Retail Store Law. These deregulations enabled large stores such as shopping centers or roadside shops to develop easily in suburban areas, especially the outskirts of cities.

Yasukura (1999) examined changing store location strategies by big supermarket chains in the Chukyo region during the deregulation period. AEON, Uny, and SATY, three large supermarket chains, began adopting certain location strategies: (1) more large-scale stores in suburbs far from central shopping streets, (2) shopping centers at developing urban areas to obtain wide spaces for large shopping buildings and ample parking lots. Such shopping centers have wide trading areas beyond the territories of the city or town in which they are located.

### Convenience stores

The convenience store is a common retail store format in Japan's markets. This study considers convenience stores as typical retail stores suitable for the diversified consumption market from the 1980s, because convenience store can sell commodities in small lots to meet different demands of various local markets.

Convenience stores are very important for single-person households, selling various goods such as groceries, fast food, magazines and books within a small shopping space of roughly 100 to 300 m². Convenience stores also supply diverse services such as processing payments for household utilities, for instance, electric power and water supply.

Convenience store chains developed their networks rapidly by franchising. When convenience stores emerged in Japan's markets in the 1970s, many local people owned existing retail stores. Convenience store chains, such as Seven-Eleven Japan, converted such existing small stores into franchise stores, utilizing and restructuring existent retail resources.

Convenience stores began to appear in metropolitan areas from the 1970s, and there were some patterns in the spread of convenience stores within metropolitan areas.
Araki (1994) studied convenience store locations in Kyoto city, one of the metropolises in Keihanshin metropolitan region. Beginning in the second half of the 1970s, convenience stores began opening in residential areas near the core area of Kyoto city. Suburban roadsides were the second location targets for convenience chains in the 1980s. Finally, convenience stores opened in the core of Kyoto, which was the last space where convenience chains could locate their stores.

Tsuchiya (2000) analyzed the nationwide spread of convenience stores in Japan. The spreading pattern reflects the chain management practice that is unique to convenience store chains. Generally, a convenience store sells diverse goods and services in a small shopping space from 100 to 300 m². Thus, the convenience chains must deliver small-lot goods to their shops frequently. Creating a dominant area to serve a high-density store network reduces delivery costs. In the first half of the 1980s, convenience chains mainly formed dominant areas in metropolitan areas such as Tokyo, Keihanshin, and Nagoya. Such densely populated areas made it easy to form dominant areas. In the second half of the 1980s, competition within metropolitan areas heated up, after which several store chains developed nationwide networks.

Thus, beginning in the 1990s, convenience stores spread to the peripheral regions of Japan. Araki (2001, 2005) described the spatial pattern of convenience store locations in low population density areas such as Okayama and Kagawa Prefectures. In rural areas, spatial patterns of convenience store location were mainly linear along main roads so that the delivery from a distribution hub to each store can be conducted smoothly.

Specialized retail chains

The 1990s is one of the most noteworthy decades in Japanese retail systems. Since the 1990s, suburbanization of retail location has been promoted by the deregulation of large store location. In particular, specialized retail chains located their branch stores to enlarge their sales in suburban markets.

Beginning in the 1990s, specialized retail store chains began to dominate in suburban areas: mass home electronics retailers such as Yamada Denki; mass cloth retailers such as UNIQLO; and mass home improvement retailers such as Komeri. In the 1990s, the Japanese economy suffered from the collapse of the bubble economy. Japanese consumers bought less and tended to demand cheaper goods. In this situation, specialized retail stores increased their sales.

Kaneko (2000, 2005) examined the spatial structure of branch store locations and delivery systems of the specialized retail chains. Specialized retail chains have powerful price competitiveness and can sell products more cheaply than other retail stores because of bulk purchase from manufacturers. Such specialized retail chains located their branch stores in both suburban and rural areas, making access to the store more convenient for local residents.

Hata (2005) examined the expansion of bookstore chains in the Kyushu district. Like mass home electronics retailers and mass cloth retailers, bookstore chains are roadside retailers that were developed during the 1980s. To expand their store networks, bookstore chains created vertical connections with large wholesalers. The combination of store location and delivery management is crucial for specialized retailer development (Hata 2007).

Tsuchiya et al. (2002) analyzed bookstore chain location patterns and the time-space change of a large store's market area in Aichi Prefecture. The number of bookstores decreased in the 1990s because many small stores were closed, but the average store size has increased because bookstore chains have aggressively developed large stores. Thus, competition among large bookstores heated up, particularly in suburban areas. In addition, evening to midnight businesses of bookstores became popular from the 1990s, because bookstore chains tried to find market potentials of such time zones to enlarge their sales.

Shopping centers

Japan's retail industries had, as noted, been dominated by small, independent retailers until the 1980s. To protect such small retailers, the Japanese government regulated the location of large stores consistently during the 20th century. In spite of the regulation, beginning in the 1980s, the number of retail stores in Japan has been decreasing dramatically because many small retailers have closed their businesses in response to severe competition from large retail chains.

Large store location deregulation began in the 1990s, enabling shopping centers to locate aggressively in suburban areas, which in turn caused the decline of central shopping streets in downtown districts. This has become a main issue in geographical studies concerning shopping centers.

Supermarket chains—especially the AEON group, which owns Jusco supermarkets—have opened shopping centers located in suburbs, including the MaxValue supercenter and AEON Mall shopping center. Thus, shopping centers in Japan have been developed as the multiple retail format strategy of large retail chains.

Hashimoto (1998a) studied shopping center operations
in the 1990s in the case study of Shinshu Jusco Co., Ltd., an AEON group subsidiary. Shinshu Jusco created new shopping center formats in the local market of Nagano Prefecture after having actively developed neighborhood and regional shopping centers during the second half of the 1990s. Neighborhood shopping centers in rural areas represent new competition for downtown and suburban retailers.

Several geographers examined the regional impacts of large shopping center locations. For example, Yamakawa (2004) focused on the impact of suburban retailers and commercial restructuring in urban spaces. Yamakawa investigated the retail changes in Fukushima city, a typical local city in Japan. To protect the central shopping streets, Yamakawa suggested that local governments should cooperate to enact inter-city restrictions to the locations of large stores in suburban areas.

Tsubota (2001) examined the changes in regional commercial structure in the case study of Kashiwa AEON shopping center in Aomori Prefecture. In the 1990s, village governments tended to promote the locations of shopping centers in their territories as new sources of tax revenue. Such agreements between retail chains and local governments had changed the geographical structures of the retail system. Yasukura (2007) and Komaki (2010) studied social negotiation among retailing companies, the local government, local shopkeepers, and local consumers to solve problems resulting from the decline of downtown shopping streets.

Yukawa (2009) examined the social impact of crucial problems surrounding shopping center locations, such as noise and traffic jams. Yukawa explained how such problems would occur as “external effects,” and performed economic, social, and environmental assessments of shopping center locations using an original questionnaire survey.

Geographical Studies on Retail Chain Management

This section focuses on geographical studies about retail chain management. As discussed in the previous chapter, retail chains have become an important player in the Japanese retail market. Retail chains construct store networks to maximize their sales as well as to lower their operation costs. To realize such aims, retail chains have adopted information technologies in their chain management. Spatial and geographical analysis is very useful to understand how retail chains manage information networks and deliveries to their own stores in urban and rural markets.

First, this section explains the revolution of Japanese distribution systems to understand how it occurred, and how it changed retail chain management. Second, this section focuses on three aspects of retail chain management to understand spatial and geographical outcomes; retail chain physical distribution systems, retail chain informatization and Japanese retail chain internationalization. I would argue that these aspects are key to understanding location strategies discussed in the previous section.

Revolution of Japanese distribution systems

Retail systems have changed in response to economic and social changes. However, dramatic changes sometimes occur because of developments in retail chain management, such as new business formats and information technologies. After the 1980s, retail chain management changed dramatically. Specifically, retail chains adopted information technologies for retail chain management, such as POS systems and automated ordering systems to improve chain store management.

Arai and Hashimoto (2004) indicated that the revolution of distribution systems occurred twice, in the 1960s and 1990s. Table 1 summarizes characteristics of the two revolutions in Japan (Arai and Hashimoto 2004).

The 1960s revolution occurred when Japan’s economy experienced rapid growth and the consumption boom. The geographical population movement from rural to urban areas continued aggressively during this decade. These factors dramatically changed Japan’s distribution systems; specifically, supermarkets became a leading retailer, supplying more and cheaper food and products to consumers (Hayashi 1962).

The second revolution began in the second half of the 1980s, with the evolution of information technology in Japanese distribution systems, such as POS systems and automated ordering systems. Emerging information technologies changed distribution systems; specifically, large retail chains adopted these technologies in their operating systems. In addition, deregulation of large-scale store locations made retail chain development faster in the 1990s. Thanks to such economic environments, high-ranked retail chains, for instance, AEON group and Seven Eleven Japan, had oligopolistic power in Japanese consumer’s markets after the 1990s.

Retail chain physical distribution systems

As stated, chain stores became the main retail outlets in Japan’s distribution systems after the second revolution in
distribution systems. Chain stores had to rationalize their delivery systems to sell products at lower costs, which in turn forced manufacturers and wholesalers to restructure themselves. Japan’s economic geographers studied chain store delivery systems to analyze how chain stores restructured their relationships with manufacturers and wholesalers. Leading retail chains gradually gained initiative power to restructure distribution systems by their big buying power (Hashimoto 2003).

Chain store delivery systems vary among retail formats. More specifically, store size determines the type of delivery systems a retail chain adopts. Tsuchiya (1998) described the spatial patterns of chain store delivery systems. Figure 1 depicts two types of delivery systems, “bulk delivery” and “route delivery.” Bulk delivery is suitable for large store chains, such as supermarkets and home electronics retailers, because each delivery amount is larger and the delivery schedules are more punctual. Route delivery is appropriate for small store chains such as convenience stores because it can deliver goods with fewer trucks. In this way, chain stores try to systemize commodity deliveries from distribution centers to individual stores as smoothly and cheaply as possible.

Kaneko (2000) examined the spatial structure of delivery systems in home center retailers. Home center merchandising comprises three important factors: (1) great variety of items, (2) long product shelf-life, and (3) wide range of product prices. Thus, home center chains need frequent delivery of many types of goods in small quantities.

Convenience store chains require sophisticated information and logistics systems. Generally, a convenience store sells roughly 3,000 commodity items, and so convenience store chains must supply each item in a small quantity to each store with frequent deliveries. Therefore, they consolidate the delivery channel using both information systems and several types of outsourcing functions, such as joint delivery systems.

Arai (1989) investigated the route delivery systems of a convenience store chain in Nagano and Ibaraki Prefectures. In his study, Arai focused on two points: delivery systems’ rationalization and network patterns to connect stores for delivery. First, rationalizing convenience stores’ delivery systems requires the integration of product distribution channels. Indeed, convenience store chains had been bundling distribution channels by temperature zones, such as normal, 20°C, 5°C, and −20°C. For example, distribution channels of groceries, dry food, stationery and magazines, that used to be managed separately in Japanese distribution businesses, could be integrated by normal temperature zone in convenience store chains. With this system, convenience store chains reduced the number of delivery trucks.

Second, convenience store chains need to construct high-density store networks to manage total chain operations. To supply products to each store, convenience chains must make frequent deliveries. For example, because lunch boxes, a major product, must be delivered...
three times per day, the distance from the delivery center to each store must be within three hours’ drive-time. This requirement necessitates a high-density store network to supply the local markets and reduce the total distance for deliveries.

**Retail chain informatization**

Information technologies, such as POS systems and automated ordering systems, have been in use since the second half of the 1980s. It was the convenience chains that adopted information technologies first in Japan. Such information technologies deeply changed Japan’s retailing systems. First, the information technologies had made physical distribution systems more efficient, reducing distribution center inventories as well as those of retail stores. Second, they changed spatial structures of distribution system. Leading retail chains, for example AEON group, integrated several types of delivery centers to automated large ones from the 1980s. Many Japanese economic geographers have explained how the spatial structure of distribution systems changed because of the information technologies from the 1980s to the 1990s (for example, Hashimoto 1998a; Tsuchiya 1998).

During the second revolution of distribution system, informatization was the most crucial and powerful factor to achieve revolution. Several studies on distribution system informatization described the geographical as well as non-geographical effects.

Hashimoto (2001, 2003) studied stocking and delivery system rationalization by information technologies such as POS and automated ordering systems. Retailers, wholesalers, and manufacturers each use information technologies differently. Wholesalers and manufacturers use information technologies predominantly to reduce inventory costs. Retailers, in contrast, adopt information technologies to reduce various costs and to identify consumption trends. The POS system is the most important tool for detailed representation of local consumption trends. Based on the trend they identify, retailers can increase their sales by adjusting their orders to accommodate changing demand in the market.

Hashimoto (1998b) and Hashimoto and Komaki (2009) analyzed convenience store merchandising through POS data. In these studies, convenience stores in Metropolitan Tokyo were categorized into several types, for instance, multipurpose neighborhood stores, stores in business districts, and roadside stores. Each type of convenience store performs distinctive merchandising to adapt to the local market by using POS data.

Informatization also induced structural changes in distribution systems. Hashimoto (2001, 2003) described the power shift from manufacturers to retailers resulting from distribution system informatization. Before the informatization, manufacturers largely took the initiative in retail chains because they had merchandizing power to the consumer market through managing advertisement agreements. However, large retailers acquired merchandising power through the rich consumer information collected by POS systems during daily transactions, detailed information on current local and national consumption trends.

**Japanese retail chain internationalization**

In this way, Japanese retail chains tried to rationalize their chain management by modifying distribution systems and adopting information technologies. These changes are reflected in the location strategies by different types of chain operation, as discussed in the previous section. However, consumer markets’ growth in Japan had been slowing down gradually. So Japanese retail chains tried to go abroad to get new markets. To adopt their business styles to foreign country markets, retail chains have to improve their own retail chain management. I would say this is a turning point for Japanese retail chains, as the importance of foreign markets will probably increase, and I conclude this section with a brief review of this issue.

Beginning in the 1980s, Japan’s department stores, supermarkets and convenience chains tried to enter foreign markets, especially Asian markets. Kawabata (2000, 2005, 2006, 2010) described Japan’s retail companies’ globalization. To explain the process of entering foreign markets, Kawabata used ‘filter structures,’ a concept for studying retail internationalization dynamics. For Japan’s international retailers to enter foreign markets successfully, they must modify their domestic market business models. Filter structure is the retail companies’ modification process, through which Kawabata investigated how several companies conducted business successfully in foreign markets.

Kawabata also explained the process of withdrawing from foreign markets. Many Japanese department stores failed in entering foreign markets and withdrew. Beginning in the 1980s, Japan’s department stores developed large stores not only in Europe and North America metropolitan areas but also in Asian mega-cities. They could afford to develop new stores in the bubble economy. During the 1990s, though, department stores encountered severe situations, such as rising rents and new competitors like French companies’ hypermarkets. More Japanese
department stores thus withdrew from foreign markets during the late 1990s.

International procurement is another remarkable trend during the 2000s in Japan’s distribution systems. To survive in highly competitive domestic markets, retail chains must procure products more cheaply, making foreign product sources more important for surviving price competition.

Ikeda (2003) examined international product procurement in the apparel industry as a case study. Beginning in the 1980s, Japan’s apparel companies moved local production sites to foreign countries to manufacture clothes more cheaply. Specifically, SPA (a private label apparel specialty store retailer, such as UNIQLO brand) had outsourced production to foreign countries. To coordinate foreign production and domestic sales, the scheduling of production, import, and sales is very important. If the retailer cannot procure and stock sufficient products in each store, it loses sales opportunities. Recently, the integration system of production and sales across borders has evolved rapidly.

**Conclusion**

We have described how studies on Japan’s retailing systems have developed deeply and widely. In particular, Japan’s retailing systems studies thoroughly examined many topics to explain the rapid changes in the 1990s. Most studies accurately described the dynamics of Japan’s distribution systems by conducting empirical surveys.

Here we identify the remaining academic issues. Until now, geographers have estimated the efficiency of distribution systems based on economic rationality, for example, evaluation of spatial arrangements in terms of cost, but they must actually estimate with multiple perspectives in the future. On March 11, 2011, the Great East Japan Earthquake occurred in Tohoku region. Immediately following the earthquake, Japanese distribution systems failed from lack of energy, electronic power, and fuel, and so many victims lacked basic goods. This disaster highlights issues that geographers need to address. Geographers must assess Japan’s distribution systems as lifelines for local survival, and must examine the social as well as economic aspects of Japan’s distribution systems.

During the next few decades, Japan will experience a decreasing and aging population. In that context, we need sustainable distribution systems, and that, I believe, is the current crucial issue that economic geographers must study in order to suggest feasible sustainability measures for Japan’s distribution systems.

**Notes**

1. POS systems are useful tools to grasp trend of sales at retail chains. POS terminals provide traditional cash register functions as well as data collection capabilities. Several data from POS systems are managed by retail chains to rationalize inventory costs in delivery centers and retail stores.
2. Retail formats are types of store business defined by retail store floor size, merchandising, business times and price policies. Department stores, supermarket, convenience stores and drug stores are representative retail formats in Japan.
3. Large-Scale Retail Store Law aims to protect the opportunity of business activities of small and medium-sized retailers at the time of large-scale retail stores opening. Large-scale Retail Stores Law was enforced in 1973 and restricted large-scale store’s locations especially in the 1980’s.
4. Automated ordering systems are tools to maintain the amount of stocks in each store by computer systems. When inventory level in each store decreases, the systems automatically place an order to keep the inventory at a certain level.

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(J) written in Japanese

(JE) written in Japanese with English abstract

(G) written in German