

Why Spatial Planning often Fails to Control the Spreading Locations of Large Scale Commercial Facilities with Regional wide Catchment.

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Abstract

The purpose of this paper is to clarify the mechanism of 'Planning Failure' on land use control in case of sprawl developments of large scale commercial facilities, which is often seen in many countries.

Firstly, the paper introduces two cases that are observed in local regions in Japan. The first case is a huge retail accumulation developed between two central cities in the region. The development site is just in the middle of rice field, but the paper demonstrates that there is the most optimum location for retail accumulation targeting automobile users who are the majority of the residents. The second case is two large retail accumulations developed in northern and southern fringes of urban area sandwiching the downtown. This case seems geographically opposite to the first case, but the paper also demonstrates that the location of these two developments is also optimum for customers who use automobile.

Secondly, the paper introduces the third case that happened just after a city government introduced the regulation that prohibits large store development in suburban area, many large shopping malls were established one by one in neighbouring municipalities. Given the case, the author points out that a municipal government with small territory is not an appropriate body to control land use of facilities with broad catchment area because neighbourhood municipalities are in competitive position with each other. Theoretically speaking, the scale of catchment area of the development and the scale of territory of a responsible planning authority should be consistent, even in the localism era.

Lastly, the author points out a serious problem of sprawl developments of large scale commercial facilities because it is often misunderstood. In highly motorized society, market is naturally led only by automobile users. However, even though automobile users are majority, people who do not use automobile are not minority. Thus, the most crucial problem caused by retail sprawl is exclusion of automobile-poor people. To avoid retail sprawl is one of the most significant issues for spatial planning in matured motorization era.

Keywords: Large scale retail store, Urban sprawl, Social inclusion, Catchment area

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1. Backgrounds and Purpose

Evolution of retail industry in recent decades largely influenced the form of urban land use and spatial structures in many cities in the world, especially regarding location of commercial accumulation districts which are places where large number of residents visit. The traditional land use pattern was a city has downtown as a prominent commercial centre with large department stores. It is already became an old tale, even in regional core cities. Instead of that, huge shopping mall developments in suburban areas, and even in outside of urban areas, are often seen.

In addition to location, size of retail establishments has increased tremendously. A single new retail development in the suburbs with almost the same scale of floor area as retails in the whole traditional downtown is not unusual today. Typical size of a suburban shopping mall (more than 10 thousand square meters) exceeds the normal size of supermarket (some thousands square meters), and far exceeds the size of a roadside shop (some hundreds square meters). Typical suburban-type commercial accumulation in these days is consisted of a huge indoor shopping mall and some surrounding large stores. They have huge amount of parking space for automobile comers with some thousands of parking lots in the districts.

Understandably, these retail developments with more than 10 thousand square meters forth changed their location from the traditional downtown to suburbs, or even sometimes to outside of a city. As a matter of course, the influence is not small. The most crucial problem caused by retail sprawl is alienation of people who do not use automobile. Even though automobile users are majority, people who do not use automobile are not minority.

The purpose of this paper is to clarify the necessity of a regional perspective of land use control in order to prevent the phenomenon of sprawl developments of large scale commercial facilities in matured motorization era. In order to clarify the mechanism of huge retail accumulations established in outskirts of a city, this paper introduces three simple but true cases observed in Japan. Further, given the cases, the author points out that a municipal government with small territory is not an appropriate body on land use of facilities with large catchment area such as large retail establishments because neighbourhood municipalities are in competitive position with each other.

2. Case 1: A New Retail Accumulation between Two Cities

2.1 Outline of the Case Cities

The first case is a new large retail accumulation developed in the midst of rice field area between two cities. Around the district where the new large retail stores were developed, there was nothing but rice field and an arterial road that connects two cities. However, soon after the large stores opened, sales power of two downtowns in the two cities was rapidly shrank and decreased.

The names of the two cities are Tsuruoka City and Sakata City. Both cities are in Yamagata prefecture, located in northern part of the main island of Japan. They have similar size of population. Tsuruoka City has approximately 130,000 people, where Sakata City has 110,000. The locations of two cities are both in Shonai Plane with approximately 53,000 hectares of flat fields combined by the sea and mountains. The two cities are functioning independently. Distance between the downtowns of the two cities is approximately 20 km.

2.2 What happened?

Figure 1 and Table 1 show the comparison between before and after the new large retail stores were between the two cities. Figure in the left side describes the retail situation in the region in 1997 which is "Before". The largest retail accumulations in the region were seen in two downtowns of the two cities; downtown Tsuruoka with 38,648 m² of total retail floor and downtown Sakata with 39,497 m² (both in 1997). Seeing the aspect of total annual retail sales in 1997, downtown Tsuruoka's sales were 24,814 million yen whereas downtown Sakata's were 24,781 million yen. In the "Before" period, the two downtowns were definitely in the position of the retail centres of the region.

Figure in the right shows the situation in 2007 after the large retail accumulation was developed. The new commercial development was located in the territory of Mikawa Town just in the middle of the two downtowns, approximately 10 km away from the both downtowns. Mikawa Town is a different municipality from the both two cities.

The total retail floor area of the newly developed retail district reached to 51,299 m² and the annual retail sales reached 15,340 million yen (both in 2007). As comparing it with the two downtowns by data of after it was developed, both of two downtowns have shrunk and decreased, 27,712 m² of floor and 13,204 million yen of sales in downtown Tsuruoka, and 25,967 m² and 11,979 million yen in downtown Sakata (both in 2007). According to these data, the newly developed retail district definitely affected the old two downtowns, and moreover, it got the position of the largest retail centre in the region in terms of both floor area accumulation and amount of sales. On the contrary, the positions of the two downtowns as regional retail centres largely fell and declined.

2.3 Considerations for Case 1

This case looks very simple, but presents a real picture of local regions of Japan. From a geographical point of view, the traditional downtowns are located in the centre of each urbanized area, which is supposed to be optimum location for customer catchment because they are centres of urban areas where most of the people live. Besides, the train terminals as the gate of the city are located nearby and are close to the public transportation network hubs including bus services.

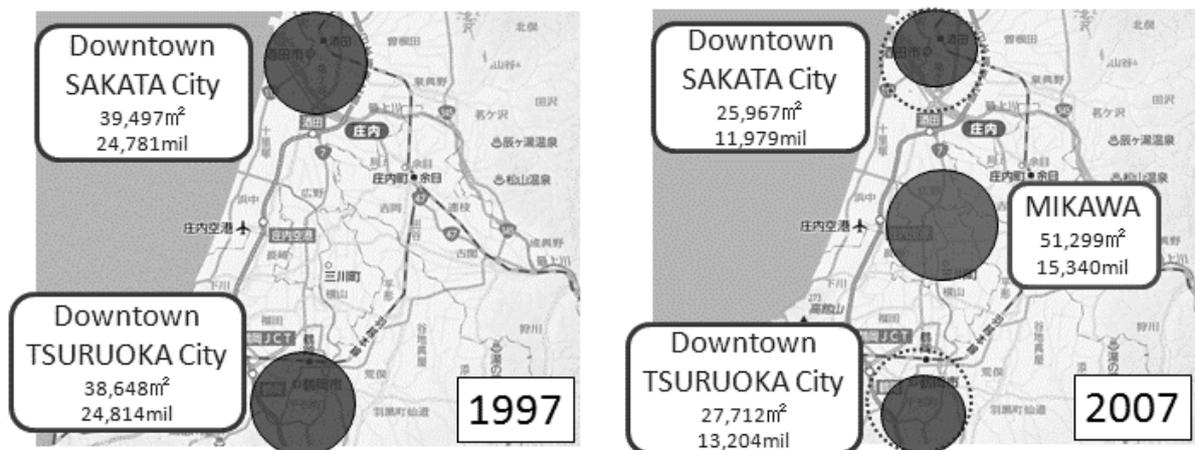


Figure 1: Change of Retail Accumulation (1997, 2007)

Table 1: Change of Floor and Sales of Retail Accumulation (1997 to 2007)

| | | 1997 | 2002 | 2007 |
|-------|-----------------------------|----------------------|----------------------|----------------------|
| Floor | Downtown Tsuruoka City | 38,648m ² | 40,469m ² | 27,712m ² |
| | Downtown Sakata City | 39,497 | 28,502 | 25,967 |
| | Large Stores in Mikawa Town | - | 23,817 | 51,299 |
| | Mikawa / Both Downtown | 0% | 35% | 96% |
| Sales | Downtown Tsuruoka City | 24,814mil | 19,159mil | 13,204mil |
| | Downtown Sakata City | 24,781 | 14,738 | 11,979 |
| | Large Stores in Mikawa Town | - | 6,166 | 15,340 |
| | Mikawa / Both Downtown | 0% | 18% | 61% |

On the contrary, the newly developed retail district is located far from residential accumulations, which are both urban areas of the two cities. It has is no convenient transport access but automobile. However, regarding the accessibility for automobile, 10 km from urban areas without traffic congestion means less than 15 minutes drive. In addition, large number of free parking spaces provided by the new commercial facilities attracts automobile users.

It sounds different from common sense, but the above facts indicate that places outside urban area are more convenient and more accessible for automobile users rather than places inside urban area so long as along there are arterial roads. Therefore, it can be said that in case of automobile users are majority of residents in the region, the positional reverse between inside and outside of the urban area will be occurred inevitably. Thus, in a matured motorized society, the optimum location of regional retail accumulation shifts from a central district of urban area to outside of urban area, especially between urban areas. This two cities' case eloquently demonstrates the truth of the geographical upset caused by motorization.

3. Case 2: Two New Retail Accumulations that sandwich a Traditional Town Centre

3.1 Outline of the Case City

The second case is two new large retail accumulations located in northern and southern sides of urban fringe area. Each accumulation is about 5 km away from the central station of the city, which is the centre of the traditional downtown of the city. Both new retail accumulations consist of some large-scale commercial facilities including a suburban large-scale shopping mall with more than 10,000 m² of retail floor (Table 2). The two new retail accumulations sandwich the urban area of Yamagata City, the downtown where there is traditional retail accumulation. The distance from the central station to the two new retail districts are approximately 5km each.

Yamagata City is a capital city of Yamagata prefecture, thw same prefecture as the case 1 but in a different region. The place is called Yamagata Basin with approximately 40,000 hectares of plane fields surrounded by mountains. Yamagata City is bigger than the two cities of the case 1 in terms of population which is approximately 250,000 and size of urbanized area which is approximately 3,000 hectare (as Densely Inhabitant District (DID) defined by the National Statistic Survey of Japan) whereas Tsuruoka and Sakata have 1,340 hectares and 1,620 hectares of land respectively.

3.2 What happened?

The two new retail accumulations were developed rapidly in a short time. Table 2 shows the floor of major large retail stores and opening year in northern and southern accumulation districts. Most of the retail stores were established in 1997 in the northern district and in 2000 in the southern district. Now Yamagata City has three districts that have more than 10,000 m² of retail floor; the downtown, the northern district and the southern district.

Figure 2 and Table 3 are comparison between before and after the new retail accumulations were established. Figure in the left side describes the former size of retail accumulation in the downtown in 1994 before the new retail accumulations were established. It had 92,957 m² of total retail floor with 85,267 million yen of annual retail sales. Those shares were 30.0% and 24.6% of the whole city respectively.

Figure in the right side shows the changed situation in 2007 after the two new retail accumulations were established in northern and southern urban fringe areas. Total amount of annual retail sales of the two newly developed districts exceeds a bit that of the traditional downtown. Total amount of retail floor in the downtown severely decreased. It fell to lower amount than total of the two new districts.

Table 2: Major Large Stores in North & South Retail Accumulation District

| Northern District (Mamigasaki) | | | Southern District (Wakamiya) | | |
|--------------------------------|---------------|------|------------------------------|---------------|------|
| Large Stores | Ret. Floor | Year | Large Stores | Ret. Floor | Year |
| Mega Shopping Mall | 21,822 | 1997 | Mega Shopping Mall | 28,782 | 2000 |
| Furniture Store | 6,674 | 1997 | Furniture Store | 5,635 | 2000 |
| DIY Store | 5,363 | 1996 | Electronics Store | 4,959 | 2000 |
| Sports Goods | 3,142 | 2005 | Sports Goods | 2,452 | 2002 |
| Others | 4,280 | - | Drug Store | 3,060 | 2000 |
| District Total | 41,281 | | District Total | 44,888 | |

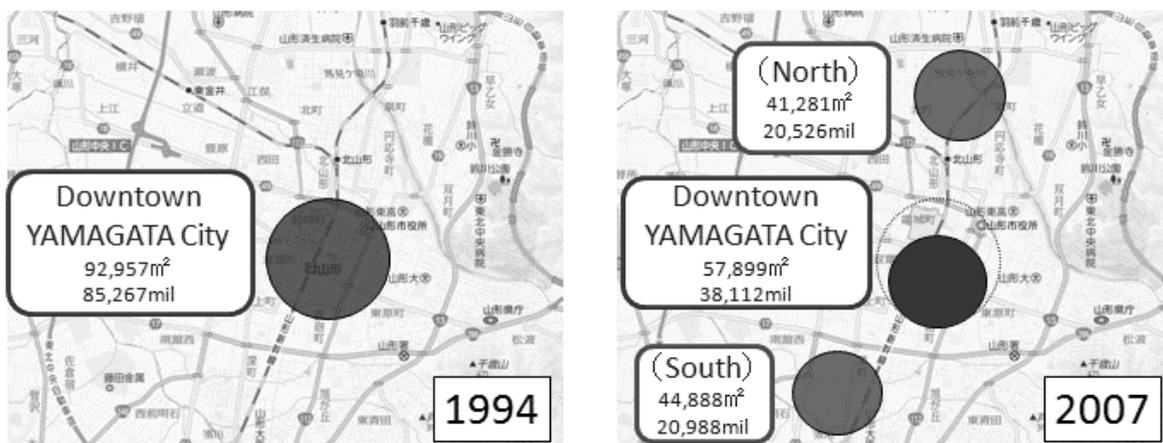


Figure 2: Change of Retail Accumulation in Yamagata City (1994, 2007)

Table 3: Change of Retail Accumulation in Yamagata City (1994, 2007)

| Retail Accumulation | | 1994 | | 2007 | |
|---------------------|-------------|----------------------|-------|----------------------|-------|
| | | quantity | share | quantity | Share |
| Floor | Downtown | 92,957m ² | 30.0% | 57,899m ² | 14.4% |
| | North Dist. | - | - | 41,281 | 10.3 |
| | South Dist. | - | - | 44,888 | 11.2 |
| Sales | Downtown | 85,267mil | 24.6% | 38,112mil | 11.9% |
| | North Dist. | - | - | 20,526 | 6.4 |
| | South Dist. | - | - | 20,988 | 6.5 |

3.3 Considerations for Case 2

According to these data, the new retail developments in the urban fringe areas definitely affected the old central downtown. More precisely, each northern and southern new retail accumulation, located in fringe of the urban area, does not exceed amount of the downtown. But the total of the two new accumulations remarkably exceeds the downtown.

This case tells us that only two huge-scal suburban retail developments with large amount of parking lots are able to dominate the whole city as the position of commercial centres, instead of the traditional downtown. They are located the opposite sides of urban fringe, which is advantageous location because not only the half of residents in the urban area but also residents living outside the urban area can easily access the places by automobile.

Therefore, it also sounds different from common sense, but the above fact indicates that the urban fringe is possible to be more accessible location for automobile users rather than the centre of the urban area so long as it is located along the arterial ring road and so forth.

4. Compare above two cases

Comparing above two cases, they look like opposite. That is, the first case is a new retail accumulation established between two old cities, whereas the second case is two new retail accumulations sandwiching the urban area. Therefore, we can easily notice that the two cases are in opposite geographical phases. In other words, the first case means the new one in the middle destroys the old two in both sides, whereas the second case means the new two in both fringes destroy the old one in between. Then, what is the essential difference between the two cases?

Figure 3 and Figure 4 abstracts the difference of the two cases. Seeing the figures in comparison with the two cases, we can notice two major differences; one is positional relation between the locations of new retail accumulations and the DIDs (Densely Inhabitant District defined by the National Statistic Survey in Japan which approximately corresponds to the urban built-up areas), and the other is the distance between the old and the new.

Considering the distance regarding the necessary access time for the automobile users to the new retail accumulations, it can be found that each average access time of the two cases are almost exactly the same. In the first two-city case the distance from the centres of two urban areas to the new retail districts is both approximately 10 km, and the both access routes are high speed arterial roads in rice fields between the cities. So, it can be estimated that the average access time would be around 15 minutes. On the other hand, the second sandwich case is that the distance from the centre of the urban area to the two new retail districts are both approximately 5 km, and both the alongside of the access routes are densely urbanized building sites. So, it can be estimated that the average access time would be also around 15 minutes.

In conclusion, it can be said that the two cases are seemingly in opposite phases from a geographical point of view, but from retail developers' point of view, we can find that the two cases are very similar. The sites of new retail accumulations are both located at places of about 15 minutes drive on average from residential accumulation areas, nearby arterial roads, large inexpensive sites available to prepare large amount of parking spaces. Therefore, it can be recognized that these are the optimum locations for retail developments in matured motorization era.

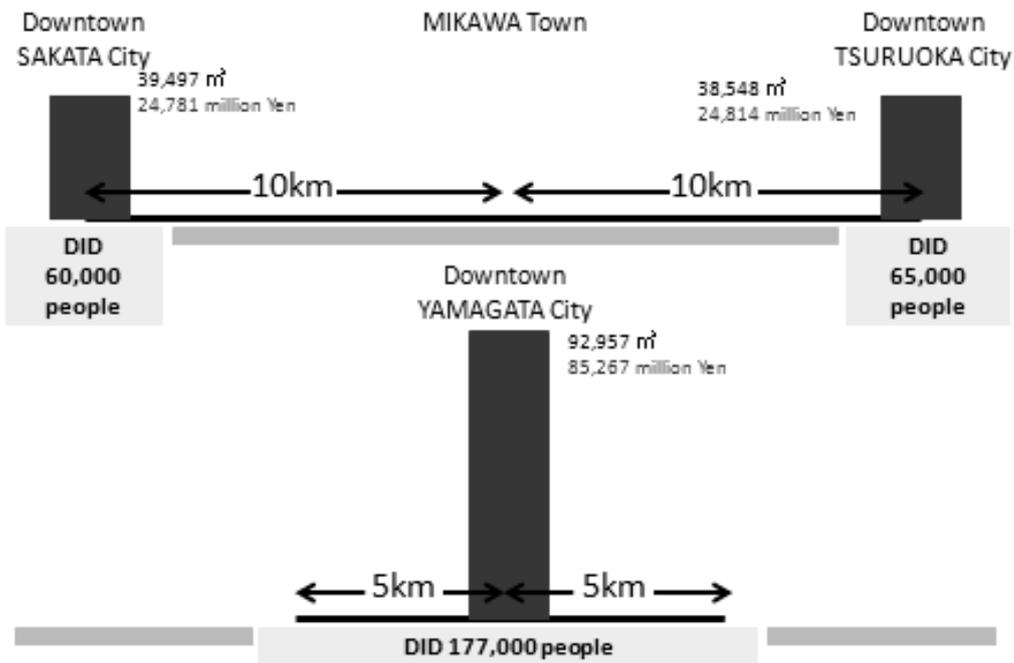


Figure 3: Situation of Retail Accumulation Districts (Before)

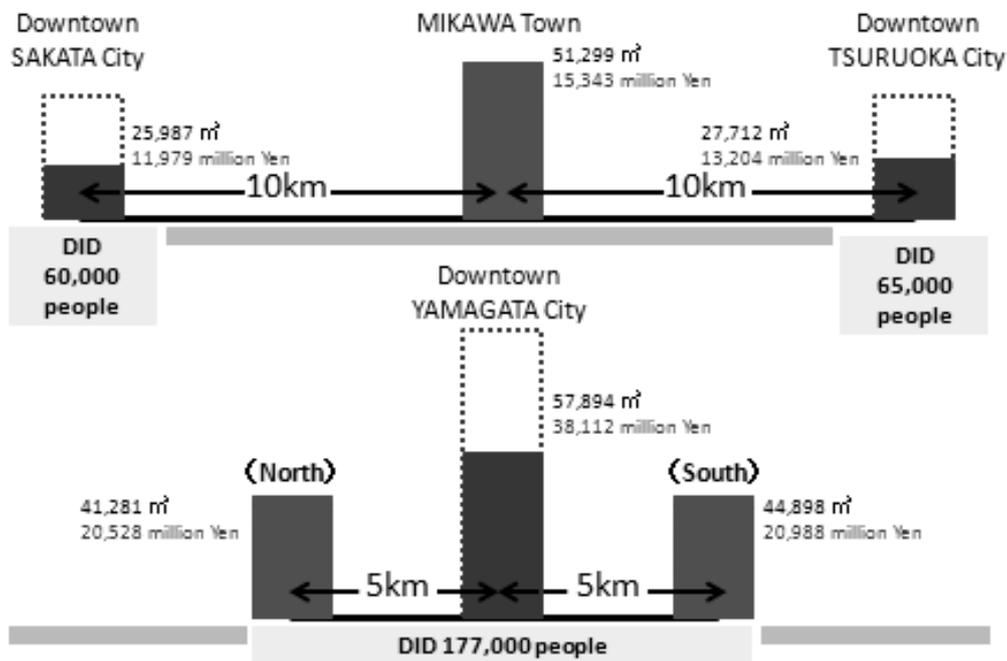


Figure 4: Situation of Retail Accumulation Districts (After)

5. Case 3; Large Retail Developments in Small Municipalities

5.1 What happened?

The third case is a story of Toyota City and the surrounding municipalities. Toyota City is well known as a home town of TOYOTA Automobile Company, with population of 409,000. It is located in the eastern end of large flat field of Nobi Plane. So, eastern neighbour municipalities have mixed landscape that consists of farmlands, residential settlements and factory sites, whereas western sides are non-urbanized mountain areas.

According to the municipal policy, land use regulation in Toyota City is relatively strict than the surrounding municipalities. Traditionally, large-scale retail store developments have been restricted in suburban areas of Toyota City. In addition to that, when a new land development project was carried out to establish new research facilities in suburban area within Toyota City, the municipal government of Toyota City introduced a new land use regulation to prohibit large retail development with more than 3,000 m² retail floor by a local ordinance and applied it to the new developments in the suburbs. It was the year of 1997.

Figure 5 describes the scene that large scale shopping malls with more than 10,000 m² of retail floor were established one by one in neighbour municipalities of Toyota City. It happened only within three years after 1997 when the municipal government of Toyota City introduced the ordinance to prohibit large retail development in the suburbs.

Actually, the ordinance of Toyota City is only valid within the territory of Toyota City. So, it was impossible to prohibit these large-scale shopping mall developments that are located outside Toyota City unless the neighbour municipalities introduce the same sort of ordinance as Toyota City. Consequently, so many huge-scale shopping malls were established one after another in neighbour municipalities. As the result, retail sales share of Toyota City in the region decreased (Table 4).

Table 3: Change of Retail Sales Share in Toyota & Neighbour Municipalities

| Municipality | Retail Floor (m ²) | | | Sales Share | |
|--------------|--------------------------------|-----------|------------|-------------|------------|
| | 1997 | 2002 | difference | 1997 | 2002 |
| TOYOTA | 369,797 | 338,409 | ▼31,482 | 27.9% | 26.2% |
| SETO | 105,824 | 126,303 | 20,469 | 7.9% | 7.3% |
| NAGAKUDE | 37,074 | 59,458 | 22,384 | 3.5% | 3.9% |
| KARIYA | 148,080 | 154,752 | 6,672 | 11.8% | 11.2% |
| MIYOSHI | 32,146 | 60,929 | 28,783 | 2.2% | 4.0% |
| CHIRYU | 89,141 | 92,821 | 3,680 | 5.2% | 5.3% |
| ANJO | 179,929 | 193,587 | 13,658 | 12.5% | 13.7% |
| OKAZAKI | 417,211 | 460,500 | 43,289 | 29.0% | 28.5% |
| TOTAL | 1,379,206 | 1,486,759 | 107,553 | 1,448(mil) | 1,370(mil) |

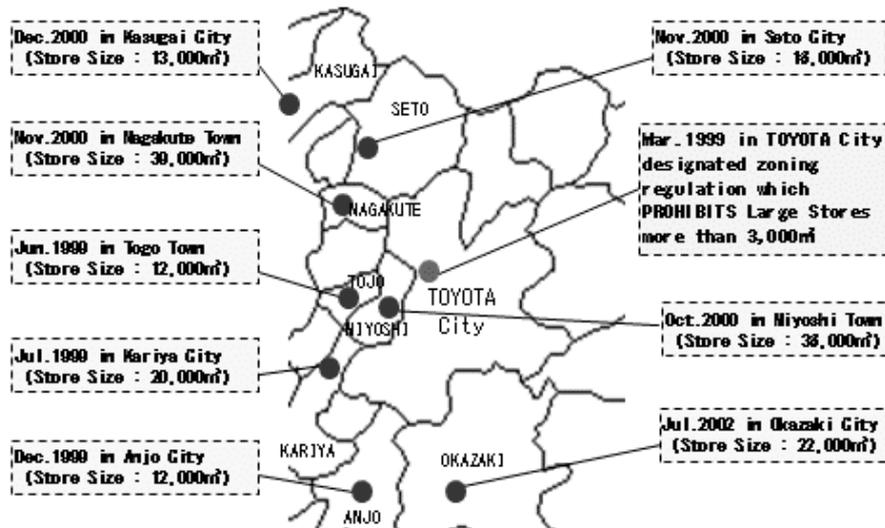


Figure 5: Large Store Establishment in Toyota & Neighbour Municipalities

5.2 Considerations for Case 3

Why did they happen? Why such huge malls can be developed even in small municipalities? Two reasons are easily thought; one is that the customer catchment areas of these large malls are so wide and broad that they can even reach the suburban residents of Toyota City beyond the boundaries of their municipalities. The other reason is that all the municipalities except Toyota City welcome large mall establishments within their territories because large malls would contribute to the local economy of the municipalities, especially tax income increase.

Considering further the two reasons above, it can be understood that a municipal government with small territory is not an adequate body in charge of development control on such facilities with wider catchment area than their municipal boundary as large scale commercial facilities.

As we can see, neighbouring municipalities are in competitive relationship with each other in terms of selecting location of facilities with large catchment area. Therefore, it is often seen that a small municipality invites large-scale retail establishment to their territory for their economic interests, or at least in order to avoid falling in disadvantageous position in the neighbourhood region by the case that large store would be located outside their territory. The above twin cities case (Case 1) also corresponds to this kind of pattern because the site of the new large retail development was located in a small town called Mikawa, not in either territory of twin cities.

Thus, as conclusion of this thought, it is not adequate that a municipal government with a limited territory takes responsibility for the specific planning on potential location of large scale commercial development with large catchment area, at least planning without checking and consent of its upper regional jurisdictional government. It must be said that the size of catchment area of the development and the size of territory of a responsible planning authority should be spatially consistent, even in the localism era.

6. Conclusion

Major findings from above three cases are as follows:

According to progress of motorization, optimum location for retail accumulation changed from the centre of urban area to fringe area and even outside of urban area so long as it is well accessible to arterial roads. This phenomenon corresponds to a local city region where majority of people use their own automobile for shopping.

By observing the actual cases, the location in the outskirts of urban area, in the middle of two cities as well as the locations that sandwiching the urban area were demonstrated as examples of optimum location for retail accumulation rather than central downtown in a motorized local city region. Both locations are approximately 15 minutes by automobile from the centre of urban area. These simple patterns occur naturally in the market with progressed large retail facilities. Therefore, they can be said as theoretical optimum patterns of location for large retail accumulation in highly motorized wealthy local cities, though it seems different from former common sense of spatial planning.

Regarding development control on location, Case 3 as well as Case 1 proved that a municipal government with small territory is not an appropriate body for land use planning with large catchment area such as large retail establishment, because neighbourhood municipalities are in competitive relationship with each other. Theoretically speaking, the scale of catchment area of the development and the scale of territory of a responsible planning authority should be consistent, even in the localism era.

Lastly, I would like to consider what the fundamental problem on retail sprawl is.

In a highly motorized society, most of the families have their own automobiles. Therefore, market is naturally led by automobile users who are the majority of people. Urban habitat space itself changed to automobile-friendly forms. Automobile has characteristics to equalizing everywhere so long as there are arterial roads, but also requires large amount of parking spaces as a result of that. Location of every facility including retail stores is driven to spread out.

However, even though the majority is people who use automobile, people who do not use automobile is not the minority. There are so many automobile-poor people who are not able to use their own cars for some reasons such as economy, age, physical disability or something lack of suitability. Thus, it is supposed that the most crucial problem caused by retail sprawl is alienation of automobile-poor people.

An urban form should not be automobile dependent, not only for greenhouse gas reduction but also more for social inclusiveness. Large scale commercial accumulation is a place for all the residents. Therefore, it should be accessible by all the means of transport, not only automobile. To avoid retail sprawl is one of the most significant issues for spatial planning in matured motorization era.

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