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"Side-Business" Development in Japanese Major Private Passenger Railways

— What can we learn from their experiences? —

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Abstract

Railway privatization continues to progress in Japan and overseas, but progress was not always smooth and there have been cases of management failure following privatization. Therefore, it is important to establish appropriate business management policies and strategies. Major railway companies in Japan have been operating railway businesses together with a collection of *side-businesses* in a unique way. The term *side-business* in the context of Japan's railway industry covers a wide range of businesses, including transportation, real estate, merchandise sales, tourism and leisure. These *side-businesses* are no longer on the side as they currently account for about 70 to 90% of Japan's major private railway companies' revenues, making them important sources of revenue. The process, factors and characteristics of diversification strategies used by Japanese major railways can offer useful background information and insights for the investigation of future railway privatization methods. This study examines the details and time periods of such *side- businesses* and provides a model for classifying them by era and according to their characteristics. The model developed highlights the variety of ways that companies diversified their business activities and historically maps the establishment of such *side-business*. Moreover, in recent years, six types of structures for operating revenue have emerged, which demonstrates that *side- businesses* are not incidental to the railway business in Japan, but are also a driving force that creates innovation and synergistic effects.

Keywords: Private Passenger Railway, Diversity, Management, Side-business, Visualization

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1. Introduction

As railway privatization proceeds in Japan and overseas, establishing appropriate business management practices and strategies is important for railways to maintain stable operations. Privately operated railways have found that engaging in the development of railway areas and the needs of residents near railway lines utilizing market based methods and private funds useful. Recently, more and more urban passenger railways and subways around the world have been trying to incorporate such private sector vitality into their operations, but very few passenger railway companies have the necessary private sector-management capabilities and management approaches. In this respect, some of Japan's private railway companies are unique in that they have been able to maintain private sector operating methods in a stable and sustainable manner. In fact, of Japan's 15 major private railway companies, most are private entities established in the early 20th century and have fully demonstrated their private sector management capabilities.

These companies have adopted private-sector management methods that include generating income using a variety of non-core *side-business* activities which center around the railway business, such as non-railway transportation businesses, such as busses, real estate businesses, such as housing , merchandise sales businesses, such as stores, and tourism and leisure businesses. The major private passenger railway companies have chosen a variety of *side-businesses* depending on related regional characteristics and their business environment. Currently, *side-businesses* account for 70 to 90% of their operating revenue.

A historical perspective is important to understand the value, business environment and diversity of a *side-business* in order to introduce appropriate private sector management methods and businesses in the future. This research focused on 15 private railway operators that are members of the Japan Private Railway Association and are engaged in sustainable corporate group management of a relatively large business scale. Table 1 shows the company profiles. In terms of corporate groups there are 14 companies instead of 15 companies, as the Hankyu Corporation and the Hanshin Electric Railway belong to the Hankyu Hanshin Holdings.

Table 1 Profile of 15 Major Private Railways in Japan.

NO.	Name of Railway	Established (year)	Area	Operation length (km)	Passengers Carried (Million passengers)	Total Operating revenue (¥ billions)	Total Operating profit (¥ billions)	Total assets (¥ billions)	Affiliated companies (companies)	Revenue From Side-busness (%)
1	TOBU RAILWAY CO.,LTD.	1897	Tokyo	463.3	908	568.8	68.3	1,597.7	85	71.8
2	Seibu Holdings Inc	1912	Tokyo	176.6	648	512.0	62.4	1,627.8	51	80.1
3	Keisei Electric Railway Co.,Ltd.	1909	Tokyo	152.3	280	245.8	30.0	795.4	55	73.8
4	Keio Corporation	1910	Tokyo	84.7	660	418.9	37.9	834.6	46	79.8
5	Odakyu Electric Railway Co.,Ltd.	1923	Tokyo	120.5	749	523.0	49.9	1,270.1	44	77.1
6	TOKYU CORPORATION	1922	Tokyo	104.9	1,163	1,117.3	77.9	2,148.6	129	86.3
7	Keikyu Corporation	1898	Tokyo	87.0	467	309.8	37.7	826.9	60	73.0
8	Sotetus Holdings,Inc.	1917	Tokyo	35.9	230	253.3	30.5	579.6	29	87.0
9	Nagoya Railroad Co.,Ltd.	1910	Nagoya	444.2	378	599.5	44.1	1,093.8	123	84.8
10	Kintetsu Group Holdings Co.,Ltd.	1910	Osaka	501.1	575	1,204.8	64.8	1,912.9	81	87.0
11	Nankai Electric Railway Co.,Ltd	1884	Osaka	154.8	236	221.6	31.8	890.7	58	73.0
12	Keihan Holdings Co.,Ltd.	1906	Osaka	91.1	291	302.9	32.3	679.6	39	81.9
13	Hankyu Hanshin Holdings, Inc. – HANSHIN ELECTRIC RAILWAY CO.,LTD.	1907	Osaka	48.9	647	736.7	104.0	2,349.8	93	81.4
14	Hankyu Hanshin Holdings, Inc. – Hankyu Corporation	1899	Osaka	143.6	236					
15	Nishi-Nippon Railroad Co., Ltd.	1908	Fukuoka	106.1	101	358.2	19.3	523.1	80	94.0

※ "Major private railway data book (as of March 2017)" published by the Japan Private Railway Association

This is a comprehensive study that provides an overview analysis of the evolution of the diverse *side-businesses* run by the major Japanese railway companies. As these railways have operated diversified businesses from the time of their establishment to the present this research examined their complete background covering two perspectives.

First, a comprehensive visualization of the business transitions of each company categorizing the diversity of their corporate activities by selected characteristics.

Second, an examination and analysis of the characteristics of and changes in the revenues from operations in each segment in recent years. This aims to quantitatively compare and evaluate the diversified business activities and scale of each major private railway company group.

This study's visualization of the history and evolution of the *side-businesses* of the major Japanese private railway companies will contribute basic information which can be utilized by overseas railway operators considering the implementation of private sector management methods in the future. This study also suggests private sector management methods based on the lessons learned from the diversified business strategies and transitions of domestic major railway companies that could be useful for railway operators in Japan and overseas in different, railway, business and social environments.

This paper is structured into six chapters. Chapter 1 provides the background research, purpose, methods, and structure of this paper. Chapter 2 describes the historical development of the private railway business in Japan. Chapter 3 discusses the development of the various private railway *side-businesses*. Chapter 4 classifies recent revenue streams by segment (displayed in a radar chart) and their characteristics. Chapter 5 discusses some of the implications the of this comprehensive analysis as it relates to various developments and issues with the wide variety of *side-businesses* run by the major private railway companies. Chapter 6 summarizes the results of the analysis, offers some conclusions and discussions based on the results and discusses future research issues.

2. Historical Overview of the Japanese Private Railway Business

2.1. Founding Period: (Late 19th century to middle 1940s)

Since the opening of the railway line between Shimbashi and Yokohama in 1872, Japan has expanded its rail network nationwide. At that time, the Japanese economy lacked the financial resources for railway construction. The development of trunk line networks was promoted as a system where both public and private railways could coexist, and the government and private sector worked together to implement policies. In 1906, the Railway Nationalization Law was promulgated, allowing the Japanese National Railway to operate the nationwide trunk lines and private companies to operate local railways.

There were two types of private railways. One type established in the 1880s was the private railway group. These large-scale private railways included Nippon Railway, Hokkaido Colliery and Railway, Kansai Railway, Sanyo Railway and Kyushu Railway. Among them, Sanyo Railway stood out as company that actively promoted business development and undertook efforts to diversify. These activities could be considered "side businesses" (service industry business related to the railway business) in that they contributed to the improvement of railway passenger transportation, (such as providing more passenger services and improving the service quality), and they focused on advancements taking place in the railway and railways-related businesses in Western countries at that time. . After the Russo-Japanese War, the Diet passed the Railway Nationalization Act (1906) which nationalized private railways in order to unify the nationwide railway networks into a single public railway network.. It was resolved that the 17 major private railway companies including the five large private railway companies as described above would be nationalized (acquired), to establish a trunk line network as the backbone of the nation.

The second type of privatized railway group was unaffected by the nationalization at the time. This group included private railways that remained private by promoting railway line expansion and business diversification. Moreover, several private companies/routes were established mainly in the Osaka and Tokyo Metropolitan areas to provide intercity transport. Taking advantage of the Light Railway Law enforced in 1910, which relaxed restrictions on concurrent business many business diversification attempts were made using the railroad network and the railroad environment. Many of these attempts were the beginnings of the current private railways and some operators expanded the tram business into a suburban train business. The expansion and development of urban-urban and urban-suburban routes were becoming more and more prominent in those days. With the development of national land and the improvement in living standards, a situation emerged in which *side-businesses* were created and developed according to a company's business management strategy, for example, railway line area development and department store businesses were undertaken in combination with a rail-laying project.

Although there are many small- and medium-sized local railways in Japan, some were excluded from this study because of their limited development of *side-businesses*. In terms of business scale, most of these excluded railways were relatively small-sized operators.

Subsequently, Japan entered an interwar recession period for a number of reasons including the end of the booming World War I economy, the 1927 financial crisis, and the 1929 Showa crisis. Japan's economic activities became brisk mainly due to military demand caused by a shift to a military expansionist policy. However, consolidation progressed in a variety of industries under the controlled economy through the control and rationalization policies, including the Strategic Industries Control Act. As for railway and automobile (bus and taxi) businesses, regional integration was promoted by the Land Transportation Project Coordination Act enacted in 1938. Many of the major railway companies absorbed small- and medium-sized railway companies along the railway lines, expanding their sales area nearly to the present scope.

2.2. Developing period: Postwar to High Economic Growth Period (Mainly from the 1950s to 1960s)

In Japan, after World War II ended, private railway companies focussed on their main job of securing transportation capabilities and restored facilities rather than proceeding with business diversification efforts. Even after the restoration of the railway network, they actively invested in the main railway business, putting energy into projects such as double-track railway development and length organization. Eventually the Japanese economy shifted to a high economic growth period. Industries related to the improvement of leisure activities, such as tourism, benefitted significantly. As demand for transportation in the railway business continued to increase with people commuting to their place of study or work, and for leisure and other activities, railway companies aggressively made investments aimed at enhancing the transportation capacity to meet the demand.

During this high economic growth period, private railway companies actively promoted business diversification. The concentration of the population in urban areas as mentioned above gave rise to new demand for housing in the suburbs. All companies developed and sold residential lots along its lines mainly for commuters to cities. Also, because car ownership rates were low at that time, entry into the transportation industry, such as bus routes connecting residential areas and their nearest stations, and network construction, such as long-distance buses was common.

2.3. 1970s – Present

In the 1970s, the Japanese economy suffered a major blow due to "oil shocks" and entered a low growth period. The major private railway companies responded to the low growth economy with measures such as organizational restructuring and the formulation of long-term business plans.

During the bubble economy of the 1980s, speculative fever increased, making it difficult to acquire new land due to skyrocketing land prices. Assuming land prices would continuously rise, many private railway companies developed resorts, such as golf courses and ski resorts. Companies such as Seibu Group's Prince Hotels also advanced overseas. With the collapse of the bubble economy and the sharp inflation of the yen, the growth of Japanese companies slowed dramatically and rate of return for many companies declined. In response, corporations started to restructure their corporate management and implement rationalization measures in all phases of their business.

For the major private railway companies, there were times when they integrated business operations or sold unprofitable businesses to return to their main business. Today, the numbers of foreign tourists are increasing in Japan, however, Japan's falling birthrate and the aging population is causing a decline in population , leading to changes in business performance and strategies for the main businesses and other businesses of railway operators. Specifically, while sales have been sluggish in department stores and other store businesses due to changes in consumer behavior, the major private railway companies have continued with business development, leveraging their convenient locations, such as participating in the *ekinaka* (in-station) business in which commercial facilities are located inside the station's premises, and considering and advancing into new business areas based on an awareness of the needs and social environment, such as the credit card business.

3. Time series analysis of Side-business

3.1. Classification of business

Because the business areas developed by the major private railway companies (including group companies) are so diverse, this research focused on eight specific *side-business* activities (transportation, electricity, selling and leasing of real estate, merchandise sales, hotel, leisure, characteristic businesses, and others) and visualized them using an area model as shown in Figure 1.

NO.	Classification	Main business contents
1	Transportation	Bus (autobus business), Taxi, Truck (Carriage of goods)
2	Electricity	Power supply, Electricity retail
3	Real Estate	Terminal development (lease), Residential land sale in lots (residential land development, villa place), Apartment, Office building
4	Merchandise Sales	Department store, Store business, Shopping center business, Restaurant business
5	Hotel	Travel agency, Hotel business (urban model, resort model)
6	Leisure	Amusement park, Zoo,Athletic ground,Baseball team management, Sporting houses (golf course, skiing area, gym)
7	Characteristic	Culture business (theatrical company, theater), School invitation
8	Other	Construction, Manufacturing industry (vehicle, food), Design business, Oil dealership, Landscape gardening business, Car dealership, Air cargo business

Model image

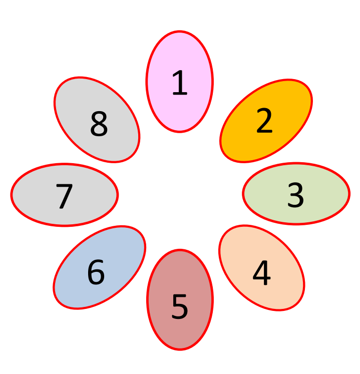


Fig.1.Selected *side-businesses* segments

3.2. Introduction of side-businesses *and time-series changes*

This research created a business area model for every 10-year period starting from the time that the major private railway companies were established (circa 1910), and visualized them in 10 steps to comprehensively analyze the historical progression of their new business introduction and diversification. Seven companies in the Tokyo Metropolitan area are shown in Figure 2.1, and eight companies in the Nagoya, Osaka and Fukuoka Metropolitan areas are shown in Figure 2.2. Although Figure 2.1 and 2.2 do not attempt to explain the scale of each business, such as revenue generation, after the 1980s the visualizations of most railways start to look very similar It is also clear that both the type of business activity introduced by the companies and the time of introduction are very diverse for the periods up to the 1970s, as well as the periods following initial establishment of the railway to the pre-war period.

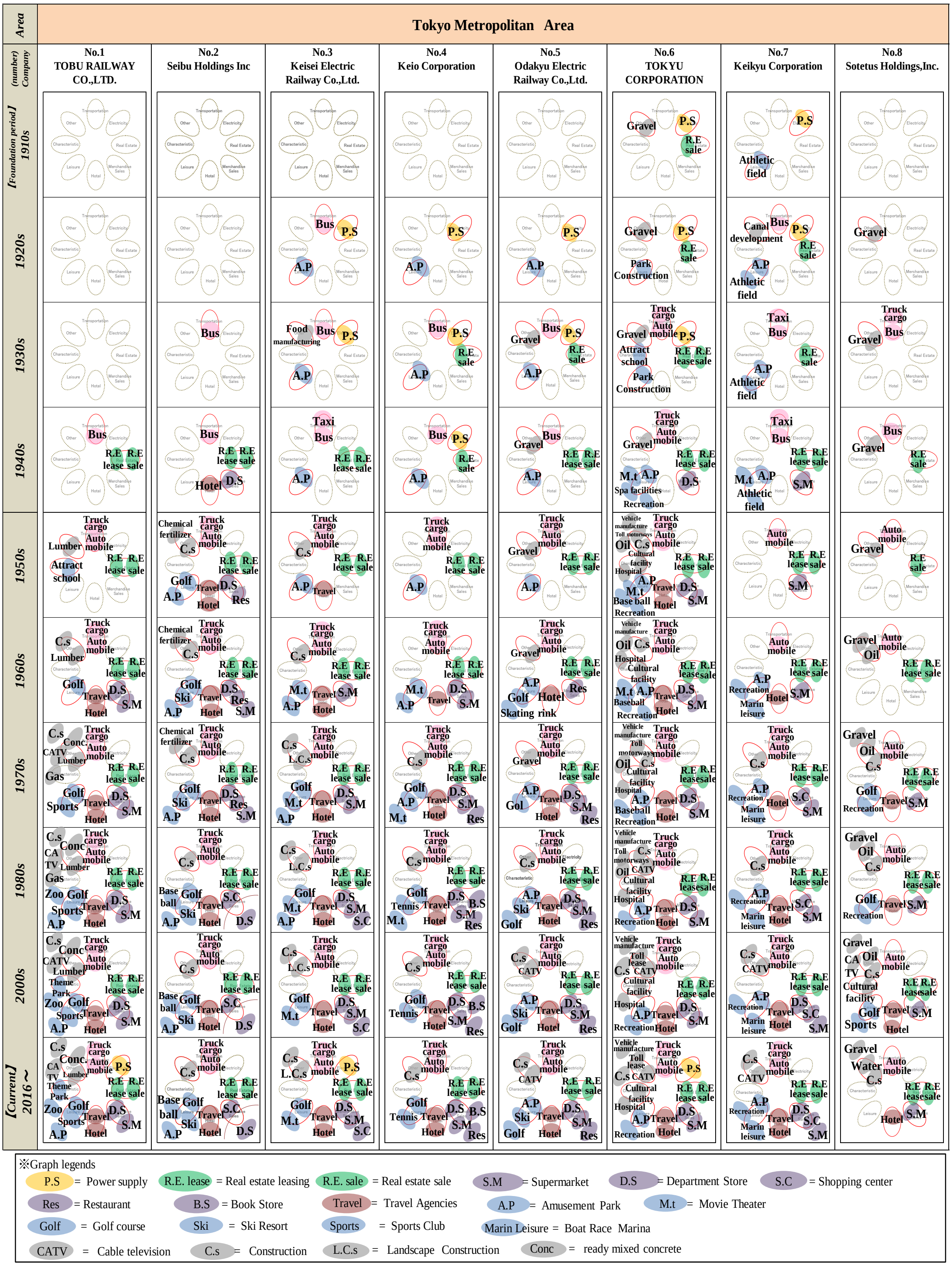


Fig.2.1 Introduction of *side-businesses* and time-series changes (Tokyo Metropolitan area)

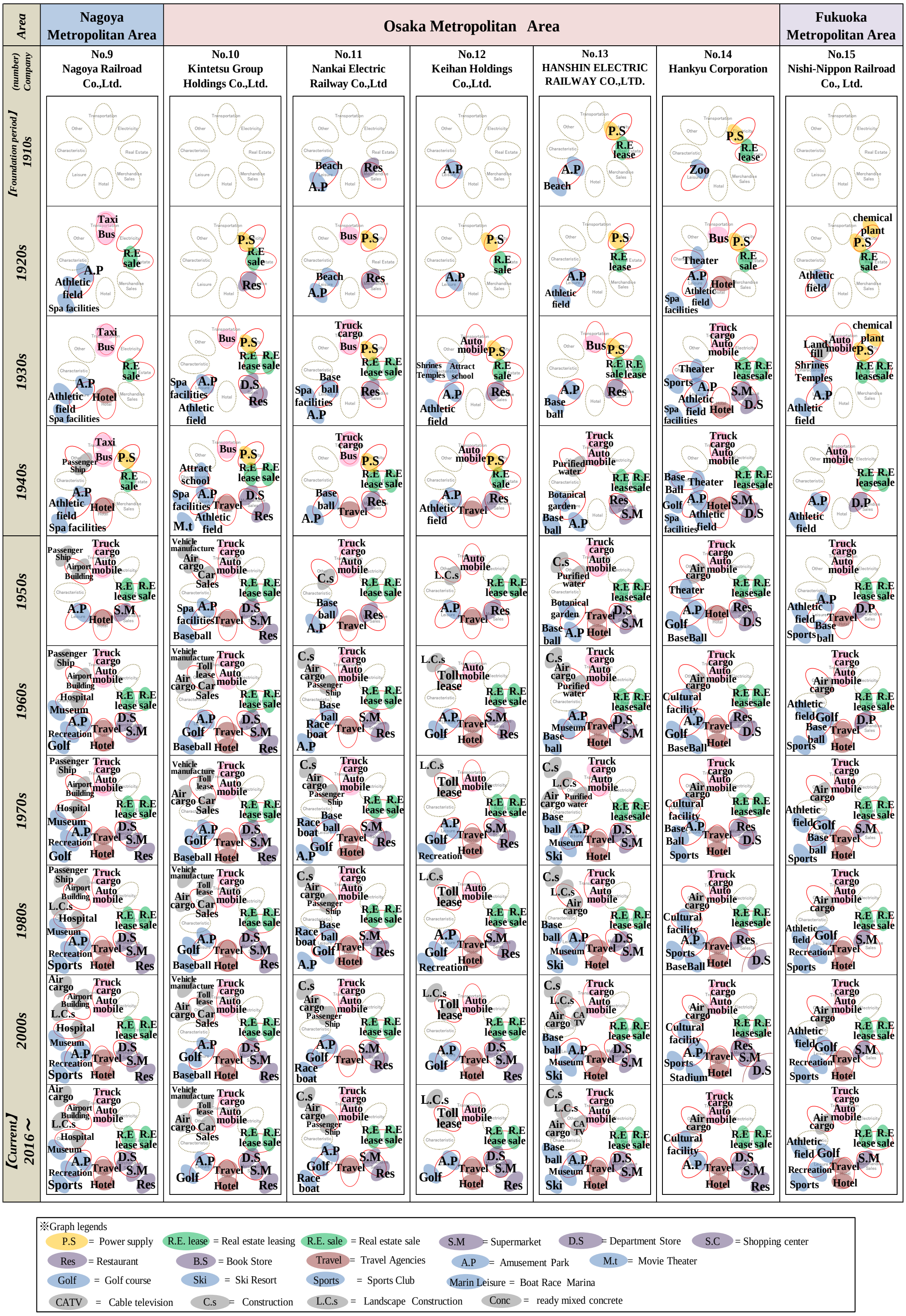


Fig.2.2 Introduction of *side-businesses* and time-series changes (Nagoya, Osaka, and Fukuoka Metropolitan areas)

3.3. A few specific side business and Historical backgrounds

3.3.1. Electric light power supply (before World War II)

The electric power supply business was one of the distinctive businesses of Japanese domestic private railway operators. Of those electric railway companies (electric railway), until the 1920s, many engaged in urban area and residential land developments had promoted business engagement/development for a variety of reasons.

As electric power became abundant and inexpensive due to the development of a large-scale hydroelectric power business, there were cases where electric power companies such as Odawara Express Railway (currently Odakyu Electric Railway) newly established electric railway businesses, and the electrification of existing railways was promoted. Table 2 summarizes the development of the power supply business by the major private railway companies including the year that their railway operations began. From its inception, the electric power business has been part of the electric-railway business infrastructure as it is the raw material used for providing transportation services. Electric powers' entry into the railway business was a diverse process.

Specific examples include cases where (1) surplus electricity generated by train operations is supplied to areas along the railway line, (2) railway/electric power supply businesses are launched prior to railway operations to support railway businesses that become the main business, (3) electric companies enter the railway business, and (4) infrastructures, including railway and electric power, are developed as part of community development. In any case, the electric railway business and electric power business are closely related. In the late 1930s, management of the electric power supply business developed centering on railway lines that had declined rapidly under the wartime regime of World War II. This is because the nationwide power generation and power transmission business were integrated with Japan Electric Generation and Transmission Company under the National Mobilization Law /the Government Control of Power Act enforced in 1938, and the power transmission and distribution business were integrated into nine blocks of distribution companies nationwide under the power distribution control law in 1942.

Table 2. The development and time period of electric lighting business by major private railway companies

Power supply started	Railway operation started	Company	Railway company	Remarks
1901	1899	Daishi Electric Tramway (Direct management)	Daishi Electric Railway (currently Keikyu Corporation)	Used surplus power from power plant. With electric light and electricity supply business
1908	1905	Hanshin Electric Railway (Direct management)	Hanshin Electric Railway	Used surplus power from power plant. With electric light and electricity supply business
1910	1910	Minoo-Arima Electric Tram (Direct management)	Minoo-Arima Electric Tramway (currently Hankyu Corporation)	Used surplus power from power plant. With electric light and electricity supply business
1911	1910	Keihan Electric Railway (Direct management)	Keihan Electric Railway (currently Keihan Electric Railway)	Used surplus power from power plant. With electric light and electricity supply business
1911	1912	Keisei Electric Tramway (Direct management)	Keisei Electric Tramway (currently Keisei Electric Railway	Preceded by electric power business. ⇨ Business expansion
1911	1911	Kyushu Electric Tramway (Direct management)	Kyushu Electric Tramway (currently West Japan Railway)	Used surplus power from power plant. With electric light and electricity supply business
1912	1885	Nankai Railway (Direct management)	Nankai Railway (currently Nankai Electric Railway	Hankai Tramway started railway operation. With electricity supply business using surplus power from power plant
1913	1913	Keio Electric Tramway (Direct management)	Keio Electric Tramway (currently Keio Corporation)	Used surplus power from power plant. With electric light and electricity supply business
1913	1914	Osaka Electric Tramway (Direct management)	Osaka Electric Tramway (currently Kintetsu Railway)	Proceeded by electric power business.
1913	1927	Kinugawa Hydropower (Parent company)	Odawara Express Railway (currently Odakyu Electric Railway)	Power company entered railway business.
1922	1922	Denentoshi (Parent company)	Meguro-Kamata Electric Railway (currently Tokyu Corporation)	Started the improvement of the railway and power supply infrastructure as part of community development.
1942	Power Distribution Control Law (contribution in kind by company and withdrawal from business)			

3.3.2. Merchandise Sales Business (Department Stores)

Regarding major private railway's entry into the retail and merchandise sales industry, the Mino-Arima Electric Railway Company was the first railway company among the major private railway companies to enter the retail and merchandise sales industry when it opened the Hankyu Department Store in 1929 and , and eventually became the Hankyu Corporation . Table 3 summarizes the major private railway groups' entry into the department store business following the opening of the Hankyu Department Store. Although other major private railway companies also entered the department store business, as Japan entered World War II, these companies entered the industry in the post-war reconstruction period or opened department stores taking advantage of railway terminal station development in the 1980s.

Company collateral commonly considers entry into the department store business as a noteworthy event. One possible reason for this is that the entry into the department store business offers positive contributions to a railway's profitability as a railway line with a terminal department store and to the positive image of a railway line on the outskirts, because the implementation of the project improved the value of its railway line and the entire group as well as its terminal station as a hub. However, not all major private railway companies chose to enter the retail/merchandise sales industry, including the department store business, because it is generally a business with less technical relevance to a railway's core business, and its other diversified businesses as compared, for example, to the transportation industry,, As stated earlier, in choosing business areas the railway lines found it important to consider its ripple effects such as being able to attract customers and increase the line's usage as well as improve the image of the railway lines. In some cases (including Sotetsu) the railway chose to tie-ups with aa department store and establish a joint venture company with existing department store. Entry into the department store business area, therefore has shown distinctive characteristics in terms of its development and methods.

Table 3. Entry into department store business by major private railway group

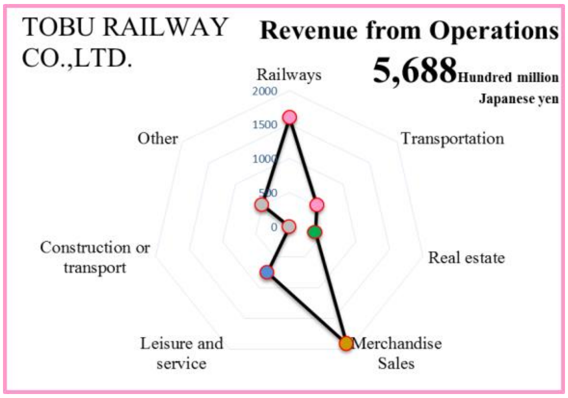
Era	Started	Name	Scheme	Railway company	Remarks	
Founding Period to World War II	1929	Hankyu Department Store	Direct management	Hanshin Express Electric Railway (currently Hankyu Corporation)	1920 Shirokiya, Umeda store (lease contract) Direct management ⇨ Affiliated company established	
	1931	Matsuya	Leased building	Tobu Railway	1959 Tobu Department Store (affiliated company established)	
	1932	Nankai Takashimaya (Takashimaya Osaka Nankai Store)	Leased building	Nankai Electric Railway	Capital and business partnership with Takashimaya (*No directly operated business involved)	
	1932	Kyuki Department Store, Kyuki Market (Hakata)	Direct management	Kyushu Electric Railway (currently West Japan Railway)	Business affiliation	* Currently, no department store business is operated by West Japan Railway Company.
	1933	Hanshin Mart	Direct management	Hanshin Electric Railway	1926 Shirokiya Hanshin, branch store (lease contract)	
	1933	Keihin Department Store (currently Keikyu Department Store)		Keihin Electric Railway (currently Keikyu Corporation)	Business affiliation	
	1933	Keihan Department Stores	Keihan Department Store established (co-financed with Shirokiya)	Keihan Electric Railway	Dissolved in 1945 (management difficulty caused by war)	
	1934	Toyoko Department Store (currently Tokyu Department Store)	Direct management	Tokyo - Yokohama Electric Railway (currently Tokyu Corporation))	Directly managed ⇨ Established affiliated company	
	1936	Daiki Department Store	Affiliated	Osaka Electric Tramway (currently Kintetsu Railway)	Daiki Building in 1926 (Mikasaya Department Store: lease contract)	* Currently, no department store business is operated by West Japan Railway Company.
	1936	Izutsuya Department Store (Kokura)	Financed	Kyushu Electric Railway (currently West Japan Railway)	Business affiliation	
	1940	Musashino Department Store (currently Seibu)	Affiliated	Musashino Railway (currently Seibu Railway)	Acquired Kikuya Department Store, Ikebukuro (business affiliation)	As Seibu Distribution Group Independent as another company group
Post War to High Economic Growth Period	1954	Meitetsu Department Store	Affiliated	Nagoya Railroad	Established affiliate company	
	1958	Takashimaya Dept. Yokohama Store	Joint venture with Takashimaya	Sagami Railway	Not directly operated	Currently, no department store business is operated.
	1962	Tobu Department Store	Affiliated	Tobu Railway	Established affiliate company	
	1962	Odakyu Department Store	Affiliated	Odakyu Electric Railway	Established affiliate company	
	1963	Keisei Department Store	Affiliated	Keisei Electric Railway	Established affiliate company	
	1964	Keio Department Store	Affiliated	Keio Teito Electric Railway (currently Keio Corporation)	Established affiliate company	
	1985	Keihan Department Stores	Affiliated	Keihan Electric Railway	Established affiliate company	
	1989	Keikyu Department Store	Affiliated	Keikyu Corporation	Established affiliate company	

4. Analysis and Classification of Recent Revenue Structure

4.1. Analytical Methods

To visualize the major private railway companies' quantitative information related to their business areas , this research created a revenue model by segment as of the end of March 2016. Based on the revenue from operations disclosed in securities reports (amounts recorded in consolidated financial statements) for each segment. This is a revenue model by multidimensional segment and it is visualized in a radar chart, the shape of which allows for easy visual comparison, of not only the business line-up but also the scale of business for each segment.

Operating revenue information (FY 2016)	
TOBU RAILWAY CO.,LTD.	
Segment classification	Revenue from Operations
Railway business	1606.67
Transportation	514.41
Merchandise sales	387.35
Real Estate	1914.86
Leisure and Services	751.2
Logistics /Construction	0
Other	514.35
total	5688.87



※Unit in the radar chart : Hundred million Japanese yen

※Source: 2017.3 Annual Report

Fig.3.Revenue model by multidimensional segment

Because of the different disclosure conditions of the companies surveyed, this research standardized business segment classifications for the model. In addition, because business segment classifications depend on the subjectivity of a company, (some make detailed classifications whereas others make broad disclosures), this research comprehensively explained the time series changes in the three fiscal years ended in March 2007, March 2011 and March 2017. Table 4 shows the relationship between the segment classifications of the major private railway companies as of the fiscal year ended in March 2017 and the model's set division of segment profit diagrams. This research classified the revenue structure based on eight categories: railway business, transportation, real estate, merchandise sales, leisure and services, logistics, construction and other comparable industries.

Table 4. Segment classification list of major private railway companies and classification for comparison

NO.	Metropolitan Area	Company Group	Number of segments	Segment classification							
				1	2	3	4	5	6	7	Main business of segment "Other"
1	Tokyo	TOBU RAILWAY CO.,LTD.	5	Trans portation	Merchandise Sales	Real Estate	Leisure	Others	–	–	Construction
2	Tokyo	Seibu Holdings Inc	6	Urban Transportation and Regional	Hotel and Leisure	Real Estate	Hawaii Business	Construction	Other	–	Izuhakone Business、Ohmi Business、Seibu Lions Business
3	Tokyo	Keisei Electric Railway Co.,Ltd.	6	Trans portation	Merchandise sales	Real Estate	Leisure Services	Construction	Other	–	Railway car maintenance, Car body manufacturing, Insurance, Driving school, Solar power generation
4	Tokyo	Keio Corporation	5	Trans portation	Merchandise sales	Real Estate	Leisure	Other businesses	–	–	Building maintenance、Railway car maintenance、Construction, Information system, Accounting agent / Finance, Human Resources business agency, Social education, Cleaning, Child care support, Elderly housing, Funerary funeral
5	Tokyo	Odakyu Electric Railway Co.,Ltd.	4	Trans portation	Merchandise sales	Real Estate	Other	–	–	–	Hotel, Restaurant Food and drink, Travel, Golf course, Railway maintenance, Building management · Maintenance, Advertising agency, Horticulture · Landscaping, Accounting agent, Insurance agent
6	Tokyo	TOKYU CORPORATION	5	Trans portation	Life Service (※)	Real Estate	Hotel and Resort	Business Support	–	–	(※) Life Service : department store, chain store, shopping center, cable TV, advertisement, video
7	Tokyo	Keikyu Corporation	5	Trans portation	Retailing	Real Estate	Leisure Services	Other	–	–	Construction · Civil engineering · Landscaping, Transport equipment repair, Electrical equipment construction, Building management, Information processing, Driving school
8	Tokyo	Sotetus Holdings,Inc.	5	Trans portation	Merchandise sales	Real Estate	Hotel	Other	–	–	Building Maintenance, Heat Supply, Construction, Other Services
9	Nagoya	Nagoya Railroad Co.,Ltd.	6	Trans portation	Merchandise sales	Real Estate	Hotel and Leisure	Construction	Other	–	Maintenance and maintenance of facilities, aviation business, building management maintenance, Insurance agent
10	Osaka	Kintetsu Group Holdings Co.,Ltd.	5	Trans portation	Merchandise sales	Real Estate	Hotel and Leisure	Other	–	–	information processing, insurance agent
11	Osaka	Nankai Electric Railway Co.,Ltd	6	Urban Trans portation	Merchandising (Retail)	Real Estate	Leisure and Services	Construction	Other	–	Accounting / information processing business agency
12	Osaka	Keihan Holdings Co.,Ltd.	5	Trans portation	Retail Distribution	Real Estate	Leisure and Services	Other	–	–	Card business
13 14	Osaka	Hankyu Hanshin Holdings, Inc.	7	Urban Trans portation	Real Estate	Entertainment and Communications	Travel	International Transportation	Hotels	Other	Construction · Environmental business, personnel · accounting agent, group card business, finance
15	Fuku oka	Nishi-Nippon Railroad Co., Ltd.	6	Trans portation	Merchandise sales	Real Estate	Hotel and Leisure	Logistics	Other	–	IC card, vehicle maintenance related, construction related, metal recycling
Classification on revenue model by multidimensional segment			**7**	**Railway business**	**Trans portation**	**Merchandise sales**	**Real Estate**	**Leisure and Services**	**Logistics ／ Construction**	**Other**	–

Describe the segment classification described in the consolidated financial statement data of 2017.3

4.2. Classification and Analysis of Revenue Structure

Figure 4 shows the major private railway companies' classification of revenue by segment displayed in radar charts. For verification, this research made the classification using cluster analysis and the results are provided in Figure 5 for comparison. In the radar chart method, revenue is classified into six types: "Railway – Merchandise sales type," "Railway – Traffic type," "Merchandise sales type," "Leisure and Services type," "Real Estate type," and "Palm type" and the shape illustrates any combination of segments with relatively large revenues.

Although Figure 5 shows a comparison of the classification results of cluster analysis and radar chart analysis, this research has demonstrated that most have similar types.

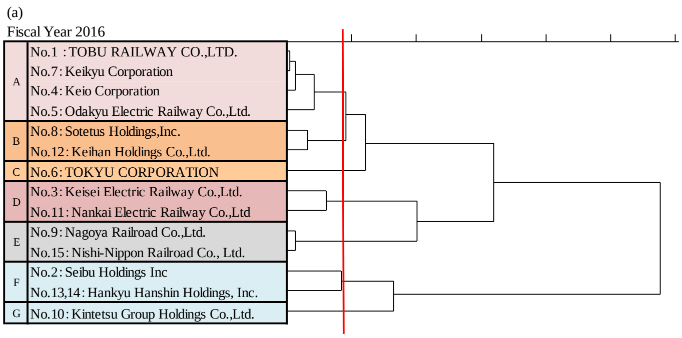
Note that Tokyu has become an equity-method affiliate of real estate companies with large revenues. Regarding community development and urban development both inside and outside of areas along their railway lines, there are many projects jointly developed by Tokyu and real estate companies. Therefore the corporate image and classified group are different. Equity-method affiliates do not add financial statements unlike consolidated subsidiaries in the process of consolidated financial statements, and the figures have been modified to reflect the profit and loss of the companies with no voting rights in accounts of investment securities in accordance with the shareholding ratio of companies with voting rights.

Similarly, the department store business by Hanshin Hankyu HD constitutes another HD, so it is excluded from the amount recorded and may be a future opportunity to be addressed that attempts to visualize the entire group of companies.

Fig.4 Revenue structure by segment and classified groups

Figure 5, shows the characteristic of those group companies that shifted to a holding company structure and belong to either the “leisure service type” or “real estate type”. The shift to a holding company structure has a number of advantages including; group management policy decisions, enhancement of group management functions, and independent management of each operating company and can be considered as a form of corporate strategy and organizational management. On the other hand, there are also many private railway groups in which a railway company is the core of the group. Advantage of this structure includes the expansion of group business management through a cooperative system, speedy management decisions, and creation of synergistic effects that can be maximized and integrated through the core company’s leadership. This form can also be regarded as strategic in that it can strengthen corporate group capacity and promote the selection and integration of businesses as a corporate group.

Many business areas in the transportation and railway industry have been developed through feeder functions and others of areas along railway lines and have developed regional aspects. On the other hand, the merchandise sales business and leisure industry have leveraged service-providing approaches acquired through the railway business, and there are many industries whose bases are not restricted to their railway lines. Therefore, it can be inferred that the benefits of a holding company have been considered when planning and implementing business strategies on a business company basis.



(b)

NO.	Company	Analysis method	
		Radar chart analysis	Cluster analysis
1	TOBU RAILWAY CO.,LTD.	Railway -Merchandise Sales type	A
2	Seibu Holdings Inc	Leisure and Service type	F
3	Keisei Electric Railway Co.,Ltd.	Raiway - Traffic type	D
4	Keio Corporation	Railway -Merchandise Sales type	A
5	Odakyu Electric Railway Co.,Ltd.	Railway -Merchandise Sales type	A
6	TOKYU CORPORATION	Merchandise Sales type	C
7	Keikyu Corporation	Railway -Merchandise Sales type	A
8	Sotetus Holdings,Inc.	Real estate type	B
9	Nagoya Railroad Co.,Ltd.	Palm type	E
10	Kintetsu Group Holdings Co.,Ltd.	Leisure and Service type / Merchandise Sales type	G
11	Nankai Electric Railway Co.,Ltd	Raiway - Traffic type	D
12	Keihan Holdings Co.,Ltd.	Real estate type	B
13 14	Hankyu Hanshin Holdings, Inc.	Leisure and Service type	F
15	Nishi-Nippon Railroad Co., Ltd.	Palm type	E
Remarks		Axis: Revenue Amount	Profit ratio Euclidean distance, Ward's method
		Common: 8 indicators (Railway, Transportation, Real Estate, Merchandise Sales, Leisure, Logistics, Construction, Others)	

Fig.5. (a) Cluster analytical result; (b) Classified groups by analytical method.

4.3. Time series change and factor of classified group

To identify the time series change for the classified groups of the major private railway companies, this research used a cluster analysis of the operating revenue ratio of the major private railway companies for FY 2006, FY 2010 and FY 2016, and the results are shown in Figure 6. There are five companies (Keihan HD, Kintetsu GHD, Tokyu, Nishi-Nippon Railroad, and Meitetsu) whose shifts in classified groups can be identified in the third term, with three factors. One factor is the change in the profit ratio, which is attributed to business activities such as the rise in the real estate ratio of Keihan HD (①in Figure 6) and the transfer of Kintetsu GHD's travel companies (②in Figure 6). The second factor is due to business withdrawal stemming from management’s selection and integration policies (③in Figure 6), such as the transfer of Tokyu's rolling stock manufacturing business. The third factor is due to changes to segment disclosure requirements, including Meitetsu and Nishi-Nippon Railroad adding new transportation businesses categorie(④and ⑤ in Figure 6), which cannot actually be considered as a shift in the classified group.

The major private railway companies’ business development diversifications and withdrawals is also shown quantitatively, suggesting that a variety of management measures have been taken as a corporate group.

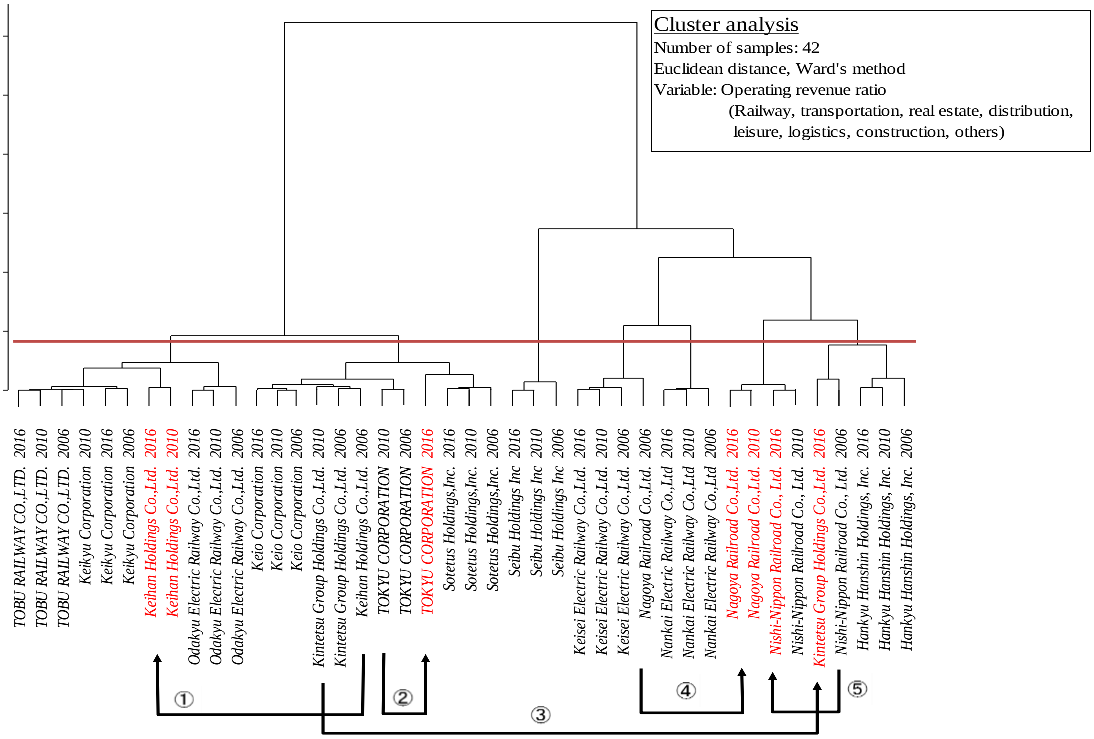


Fig.6. Classification results by cluster analysis and time series change

4.4. Diversification index (DI) analysis

To analyze the degree of diversification of major private railways in Japan, this chapter compared using the diversification index. The diversification index (DI) represents the quantitative aspect, and is a convenient indicator to directly determine whether diversification is progressing. In addition, it is an effective indicator to grasp the degree of diversification when the data are limited. This research analyzes the degree of diversification, focusing on the ratio of the operating revenue of related businesses to the operating revenue of all businesses.

The diversification index (DI) is calculated by (a). The sales composition ratio of the i-th business of a company having n businesses is represented by Pi . In this formula, DI takes values from "0" to "100", and the closer the value is to 100, the more advanced the diversification is. The business units in this research are classified as shown in Table 5.

In the case of major private railway companies, the lower DI, the higher the concentration on related businesses. This can be said that the weight of the main railway business and transportation business is small.

$$DI = \left(1 - \sqrt{\sum_{i=1}^{n} Pi^2}\right) \times 100 \qquad \text{(a)}$$

Table 5. Relationship between classified major private railway companies and main business policies / long-term plans

	Main business 1	Main business 2	Related business	Unrelated business
Segment classification	Railway business	Trans portation	Real Estate, Merchandise,Leisureand Service	Logistics,Construction, other
Relevance to segment classification (number) in Table 4	1	2	3,4,5	6,7

※The businesses included in "Others" are as shown in Figure 4.

Table 6 shows DI based on the relationship between the operating income in the segment classification shown in Table 5 for the major private railway companies in fiscal 2006, 2010 and 2016. Fig.7 shows the relationship between the trends in DI of major private railway companies and the amount of operating revenue. It can be understood from Fig.7 that the operating revenue amount and DI are plotted at similar positions for each of the groups categorized in Fig.4.

Focusing on the time series of DI, Kintetsu is mentioned as a characteristic company. The plot position of Kintetsu has moved to the lower right side, and it can be said that the expansion of profit scale and diversification of business are achieved. This factor is attributable to business activities such as the transfer of travel companies.

In addition, the four companies (Sotetsu, Keihan, Nankai, Nishi-Nippon Railroad) with operating income of around 200 billion Japanese yen have maintained the same level of profit compared to fiscal 2006. The time series trend of DI of these 4 companies is a decreasing trend, and it is shown that these 4 companies are promoting the side business.

The plot position of Seibu HD has moved to the upper left side with a large width from fiscal 2006 to fiscal 2010. The move factor of the plot is that Seibu HD has promoted selection and concentration in the side business as an effort to rebuild its business from fiscal 2005.

Thus, through the relationship between DI and the operating revenue scale, the diverse management activities and characteristics of the major private railways were shown in an overview.

Table 6. Trends in Diversification Index of Major Private Railways Companies

NO.	Name of Railway	Diversification Index (DI)			Revenue from Opreations (billons JPY)		
		fiscal 2006	fiscal 2010	fiscal 2016	fiscal 2006	fiscal 2010	fiscal 2016
1	TOBU RAILWAY CO.,LTD.	31.3	33.1	34.0	652	579	569
2	Seibu Holdings Inc	35.8	39.8	39.1	691	459	512
3	Keisei Electric Railway Co.,Ltd.	33.5	32.2	31.4	237	238	246
4	Keio Corporation	28.5	29.3	30.0	430	391	419
5	Odakyu Electric Railway Co.,Ltd.	38.0	35.6	35.8	623	515	523
6	TOKYU CORPORATION	22.3	22.8	16.4	1,382	1,152	1,117
7	Keikyu Corporation	33.2	32.7	32.9	325	300	310
8	Sotetus Holdings,Inc.	19.5	26.9	18.6	303	263	253
9	Nagoya Railroad Co.,Ltd.	33.5	34.2	34.9	697	610	600
10	Kintetsu Group Holdings Co.,Ltd.	22.5	20.3	17.5	917	961	1,204
11	Nankai Electric Railway Co.,Ltd	40.3	38.5	37.4	193	186	222
12	Keihan Holdings Co.,Ltd.	27.4	26.6	24.4	267	260	303
13 14	Hankyu Hanshin Holdings, Inc.	30.5	32.2	31.6	743	639	736
15	Nishi-Nippon Railroad Co., Ltd.	29.7	33.8	33.8	355	324	358
Remarks		The lower the DI value, the higher the concentration in related businesses					

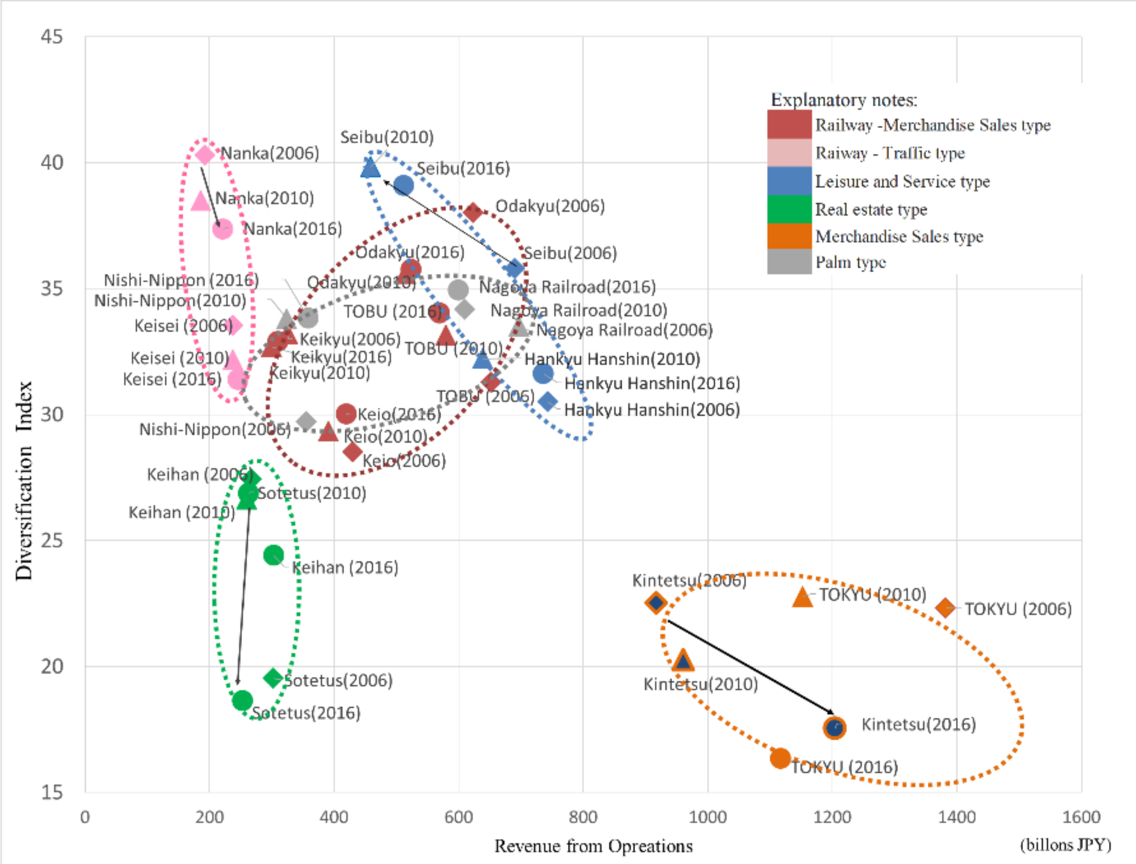


Fig.7. Relationship between the diversification index of major private railways companies and the amount of operating revenue

4.5. Classified Groups and Their Relationship with Long-term Plans and Management Strategies

Table 7 shows the most recent management activities of the major private railway groups, organized from the perspectives of new business, business transfer, business area. Looking at each business, group transfers relating to the travel industry and hotel business have been identified for several companies. Eyeing new businesses possibilities for future revenue bases include entry into solar power generation, entry into businesses related to the needs of the elderly, and developing agricultural businesses. Major private railway companies have increased their momentum in developing business overseas twice in their long history. The first time was during World War II when they developed railway businesses in Southeast Asian countries, and the second was during Japan’s postwar high-growth period when they developed merchandise sales and leisure services business overseas.

In recent years the main overseas business trend is in real estate and urban development. Many corporate groups are taking multiple approaches to advance their overseas activities. Moreover, one of the distinctive features of the new trends involves companies with international logistics businesses, (starting from travel and airline segments), that have not only demonstrated their willingness to expand into the global market but are also assigning their human resources to these efforts. When it comes to long-term plans and management policies, Keisei aims to become a company that represents the regional economy by developing a solid integrated living industry that is closely tied to the region, and for medium- to long-term growth plans, Hankyu Hanshin HD is exploring new markets in metropolitan areas and new businesses overseas. Given such trends, this research shows the diversity of the long-term management strategies and also demonstrates the strategic investment frame and commercialization activities of these companies that are trying to develop new growth bases by developing new companies and tying-up with outside companies.

Table 7. Relationship between classified major private railway companies and main business policies / long-term plans

No.	Metro politan area	Company group (abbreviation)		Type (fiscal 2016)	Major management measures in recent decades			Long-term management plan (excerpt of new project area)
					Entry/editing		Withdrawal (transfer of business to outside)	
1	Tokyo	TOBU RAILWAY CO.,LTD.	Tobu	Railway-Merchandise Sales	[New Project] [Acquisition]	Radio tower Travel company	Book industry, Car rental industry	New projects outside the railway area
2	Tokyo	Seibu Holdings Inc.	Seibu HD	Leisure and Service	[New Project] [Overseas] [Acquisition]	Solar power business, Nursing care business Business acquisition of hotel management company (Australia) Acquisition of event facilities (Yokohama Arena Co., Ltd.)	-	Establish a long-term business foundation (creating a new vision model)
3	Tokyo	Keisei Electric Railway Co., Ltd.	Keisei	Railway - Traffic	[Acquisition]	Acquired 100% ownership of Teito Jidosha Kotsu Co., Ltd.	-	Implementation of a solid integrated service business focused on the railway area
4	Tokyo	Keio Corporation	Keio	Railway - Merchandise Sales	[New Project]	Senior residence business, Private after-school day care business, Housekeeping agent service, Funerary business, Solar power business, Guest/vacation house business	-	Expansion of business to capture opportunities (implementation of strategic investments)
5	Tokyo	Odakyu Electric Railway Co.,Ltd.	Odakyu	Railway - Merchandise Sales	[New Project]	Private after-school day care business, Solar power business	-	Advancement of Existing Businesses Creation of new business
6	Tokyo	TOKYU CORPORATION	Tokyu	Merchandise Sales	[New Project] [Overseas]	Power service business, Smart life business utilizing IOT Airport management, Food sales (Halal food) Urban development joint venture established (Vietnam) Real estate business joint venture established (Thailand)	Rolling stock manufacturing industry	Implementation of projects outside the area Creation of new business
7	Tokyo	Keikyu Corporation	Keikyu	Railway - Merchandise Sales	[New Project] [Overseas]	Housing support service business Complex development project (Indonesia)	-	Strategic implementation of real estate (leasing and distribution business)
8	Tokyo	Sotetus Holdings, Inc.	Sotetsu HD	Real estate	[New Project] [Acquisition]	Renovation business, Second-hand apartment purchase, renovation and sales business Stock acquisition of a hotel business company (Sunroute Co., Ltd.)	Cable TV business, Bus-service/Taxicab industry, Construction material focused trading business/Oil distribution business, Construction industry, Child care business (all by group companies)	Expansion of business areas in Tokyo, Promotion of selection and concentration of business
9	Nagoya	Nagoya Railroad Co., Ltd.	Meitetsu	Palm	[New Project]	Solar power business	-	Expansion of business areas and entry into growth fields
10	Osaka	Kintetsu Group Holdings Co., Ltd.	Kintetsu GHD	Leisure and Service/ Merchandise Sales	[New Project] [Acquisition]	Agribusiness, Child-care business Tourism (Club Tourism Co., Ltd.)	Rolling stock manufacturing industry	Creation of new revenue sources by expanding business domains and areas
11	Osaka	Nankai Electric Railway Co., Ltd.	Nankai	Railway - Traffic type	[New Project]	Directly managed cleaning business, Senior business industry, Solar power business, Agriculture related business	Gravel industry (Nan-Jari Group)	Creation of attractions in the area
12	Osaka	Keihan Holdings Co., Ltd.	Keihan HD	Real estate	[Overseas]	Complex development project (two projects in Shenyang City, China)	Transfer of Nursing care business (group company)	New design along the railway line: Redevelopment of areas along the railway line
13 14	Osaka	Hankyu Hanshin Holdings, Inc.	Hankyu Hanshin HD	Leisure and Service	[New project] [Overseas]	Nursing care business (Hanshin), Budget hotel business, Metropolitan area custom-built detached housing business Complex development project（Indonesia）, Condominium business（Thailand: Hankyu Realty Co.,Ltd）	-	Develop new markets for medium- and long-term growth (Business expansion in the Tokyo metropolitan area and launch of new overseas business)
15	Fukuoka	Nishi-Nippon Railroad Co., Ltd.	Nishitetsu	Palm	[New project] [Overseas]	Solar power business, Lifestyle support business, Agribusiness Complex development project (Indonesia), Condominium business (Vietnam)	-	⊙ Priority Development Area - Asia · Development of group business utilizing international logistics bases and human resources in Asia · Development of Metropolitan Markets• ⊙International Logistics Business · Expansion of the global network

5. Macroscopic Time Series Change in *Side-Business* Developments by Major Private Railway Companies

Figure 8 clearly shows how the major private railway companies have entered, developed, and withdrawn from related businesses, and when business diversification had progressed at various points in the time series. The figure has been designed to display this research in order to better understand the business expansion points for the business areas of each corporate group of the major private railway companies and when it has taken a diversified form. Taking a big picture view for different periods, before the war, after the war, and then into the 1970s, the wide diversity becomes clear in terms of the types of businesses entered, the expansion of business areas, and the progression of diversification.

Figure 8 is not a revenue-based comparison, but is a qualitative comparison. Private railway companies that engaged in prewar diversification during their initial establishment periods include Nankai, and Keihan. Nankai focused on railway lines along established urban areas whereas Keihan focused on rail transport between Kyoto, Osaka and Kobe. Although neither company left a major impact on diversification efforts in the Osaka Metropolitan area, it is clear from their company history that some management decisions to enter into certain businesses took regional characteristics and trends of other companies into consideration.

One diversification trend during the initial establishment period at the end of the Meiji era and into the prewar period, included corporate groups such as the Meitetsu, Kintetsu and Nishi-Nippon Railroad groups expanding their company size and business areas by taking over and developing diverse businesses while consolidating with other railway operators with different origins to widen their area network. In addition to expanding their areas of coverage and promoting related business cooperation/transfers within those areas, these groups also embarked on expanding chosen diversified businesses nationwide. The expansion of diversified businesses can be considered aa significant development in the formation ng Japanese private railway company.

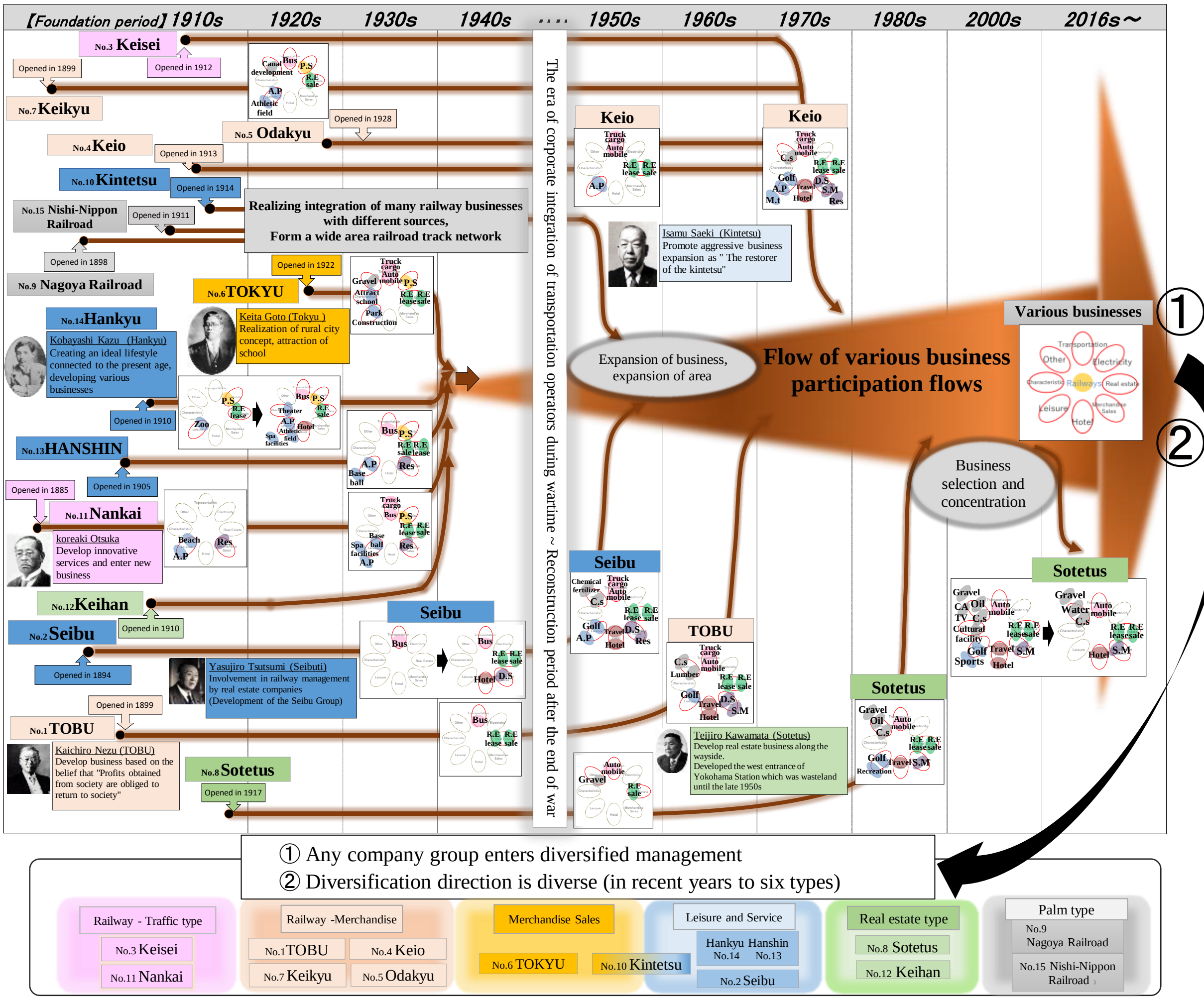


Fig.8. Time series comparison of the expansion of related businesses

Organizing each railway groups' entry into specific business categories by era, we found that Hankyu, Hanshin, Keihan, Nankai and Tokyu promoted multilateral development in the prewar period: Seibu, Nishi-Nippon Railroad, Meitetsu, and Kintetsu in the postwar reconstruction period of the 1950s; Tobu in the 1960s; Keisei, Keikyu, Keio, Odakyu in the 1970s; and Sotetsu company group in the 1980s. Following its high economic growth period, Japan has been in a period of economic stagnation since the 1980s, and the major railway companies have been selecting and integrating business areas for decades. The FY 2016 situation development chart shows that, in recent years, Sotetsu has reduced its business areas since that time.

This can be attributed to the fact Sotetsu has progressively changed its company structure to strengthen specific businesses such as its hotel business after successively transferring out of industries, such as the gravel industry (one of its main prewar businesses), the construction industry, and the leisure industry.

After the 1980s, the situation has progressed such that all corporate groups enter a wide variety of business areas. Recently, however, the wide variety of businesses can be categorized into six distinct types.

6. Conclusions and Discussion

The conclusions of this study and future research issues are as follows.

1) As clearly shown in the development status chart (Figure 7), Japanese major private railway companies have diversified into related businesses differently at different times in history and their method of progress has also varied. Given the changes in the railway's business environment as well as its external environment, it can be inferred that entry into related businesses and the expansion of business areas has been carried out in consideration of factors including the management's philosophy and viewpoints as well as the business trends of other companies. Also, one distinctive private sector management method has been to diversify into related businesses according to the characteristics of the areas along the railway lines' starting and terminal stations. Currently, many of Japan's major private railway companies, set concrete medium and long-term goals and visions for the business strategy of the starting stations. As for the future of railway lines, this research considers a possible shift to the promotion of studies that lead to the creation of business plans and visions based on the starting-mid–terminal station theory .

2) In terms of recent business development, the major business operators west of the Nagoya Metropolitan area, where the population along railway lines is already decreasing, are seeking to expand their non-core businesses to other locations including the Tokyo Metropolitan area and overseas, while being anchored to the railway business. With regards to private railway companies in the Tokyo Metropolitan area, some companies are strongly developing the areas along their railway lines, giving first priority to those areas. This indicates that there are two directions in terms of the expansion strategy: strengthening the area along railway lines and post-transportation and de-regional (characteristic business). The degree of emphasis varies with each major private railway company.

3) Operating revenue by segment can currently be clearly categorized into six groups based on revenue structure. One characteristic of this fact is that railways with real estate and leisure services companies are shifting to a holding company structure. Also, it has been found in the last 10 years five companies moved between different group classifications. Factors of the movements include transfer of and corporate transfer, revealing the progress of changes in the revenue structure and the variety of management activities taken by the major private railway companies. In terms of long-term visions and business strategies, some corporate groups clearly demonstrate enhanced efforts in specific projects and a proactive advancement in activities beyond the areas along their railway lines. Such corporate strategies suggest that the major private railway companies will further diversify and specialize.

4) To conduct further multilateral discussions, spatial distributions (along or outer areas of railway lines) of entry, area expansion and withdrawal from related businesses by the major private railway companies should be visualized and analysed. It is also necessary to identify the operating revenue, revenue structure and long-term trend, and to add a variety of quantitative indicators such as fixed assets. Furthermore, understanding and evaluating a corporate group through quantitative analysis should be considered.

Many private railway companies around the world are entering related businesses directly linked to railway transport. However, it has not reached the point that they carry out business development over a wide area including developing business areas with low relevance to the railway business, as done by the major private railway groups in Japan. For example, the current modern urban railways in Asia follow narrow business areas related to railway construction projects. For railways in emerging countries, the railway business, where capital investment is enormous, has been their main focus. Even though there is some entry into directly related businesses, there is not the wide range of business areas as engaged in by the major Japanese private railway companies.

This research focused on the diversification activities of the major Japanese railway companies at various time periods. Although the size of the capital investment varies, entering various business areas that developed into *side-businesses* was an effective means to expand the scale of business and secure a stable revenue base. The major private railway's operation of *side-businesses* has given rise to a business mindset of expanding business and revitalizing areas near the railway lines taking factors such as passenger expansion and demands from the areas along railway lines into consideration, and has led to efforts to achieve further creative ingenuity and synergistic effects. Moreover, the social background, business environment, and accumulation of distinctive management strategies and policies of Japanese private railways has created a unique railroad culture for each company and railway line. This serves as the foundation on which private railway operators have developed sound business activities for an extended period in

Japan. Naturally, not all Japanese-style private railway management utilizing *side-businesses* has progressed smoothly. There have been times of financial crisis, business withdrawals, downsizing and the rebuilding of management systems as a result of the rapid expansion of business and reactive approaches to changes in the social environment.

The environment along railway lines is changing due to Japan's declining population. Amid such circumstances, this research suggests that Japanese major private railway companies may continue to leverage a mindset of creative ingenuity that has allowed them to carry out business tie-ups while selecting profit-making businesses, introduce projects that contribute to the needs of the times and values along railway lines, and seek a departure from self-sufficient policies.

It can be said that the *side-businesses* of railway companies are not only incidental businesses, but are also a driving force that results in creative ingenuity and synergistic effects. *Side-businesses* are not ancillary businesses for railway operators, but are important pillars that play a central role to their sustainability.

From the long-term perspective of major small- and medium-sized private railway companies the lessons learned from this study are useful to understand the diversity of options available and to implement measures to improve their revenue base amid changing business and social environments. The overall picture provided and basic information explaining the wide variety of business diversification and expansion of business areas undertaken by major private railway companies can serve as examples when discussing railway privatization overseas and to realize business diversification and the development of related businesses.

References

Hankyu Hanshin Holdings, 2008 , 100 Year History / Department History Hankyu Hanshin Holdings Co., Ltd. Group Management Planning Department (Public Relations Officer)

Hanshin Electric Railway, 2005, Hanshin Electric Railway 100 Year History

KAMATA Hiromi, YAMAUCHI Hirotaka, An analysis of the diversification strategies of railway companies in Japan, 2010, The Japanese journal of transportation economics, Vol.54, pp.95～104

Keihan Holdings, 2011, Keihan 100 years of history

Keihanshin Express Railway, 1959 , 50 Year History of Kei Hanshin Electric Railway

Keikyu Corporation, 1999, Keihin Kyuko Hundred Year History

Keio Corporation, 1998, Keio Electric Railway Fifty Year History

Keisei Electric Railway, 1967, Keisei Electric Railway Fifty-Year History

Kintetsu Railway, 2010, History of the Kintetsu Railway 100 Years

Major private railway 15 companies in japan securities report: Consolidated financial statement data of 2017.3, 2011.3, 2007.3.

Nagoya Railroad, 1994 , Nagoya Railway 100 Year History

Nankai Electric Railway, 1985, Nankai Electric Railway 100 Year History

Nishi-Nippon Railroad, 2008 , One hundred year history of West Japan Railway

Odakyu Electric Railway, 1980, Odakyu 50th Year History

Odakyu Electric Railway, 2003, Odakyu Electric Railway 75 Year History

Seibu Holdings, 2016, Seibu Holdings 10th Anniversary Book

SHOJI Kenichi, Bruce J. KILLEEN, An Appraisal of Diversification Strategy as Utilized by Major Private Railways in Japan, 2001,The Japanese journal of transportation economics Kotsugaku kenkyu 2000 , pp185-194

SHOJI Kenichi, Bruce J. KILLEEN, A Sketch of Diversification Strategy of Japanese Urban Private Rails: Their Situation and Performance, 2010, Journal of economics & business administration, Vol.177 (2), pp.49～63

Sotetsu Holding , 1987, Sotetsu Seventy Year History

Tobu Railway, 1964, Tobu Railway History of 65 years

Tobu Railway, 1998 , Tobu Railway Hundred Years History (Main Edition, Reference)

Tokyu Corporation, 1973, Tokyu Corporation Electric Railway 50 Year History