

RESEARCH ON COMPOSITION OF SHOPS IN UNDERGROUND MALL

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Abstract: Underground mall located in central areas such as stations are made up of many stores. However, the actual situation is not clear. In addition, the store composition differs between underground malls located in metropolitan areas and other areas, and it is thought that there are regional characteristics. In recent years, renovation work due to the aging of underground malls has been completed. Therefore, in order to comprehensively understand the changes in store composition before and after the renovation, it is necessary to clarify the current store composition.

Therefore, this study targeted 60 underground malls with sites and collected data from April 2023 to September 2023. We will organize the types of stores that were identified based on the Ministry of Internal Affairs and Communications' standard industrial classification. We will compare the differences in store composition and among cities based on the total number of underground malls in each city. Finally, we will list the characteristic store usage.

As a result, the store composition in Tokyo Wards, Nagoya City, Osaka City, Sapporo City, Yokohama City, Fukuoka City, and underground malls across the country includes “textiles, clothing, and personal goods retailers”, “restaurants”, “other retail” and “food and beverage retails” are in the top four categories. The proportion of “textile, clothing, and personal goods retailers” is high in Tokyo Wards, Sapporo City, Yokohama City, and Fukuoka City, while the proportion of restaurants is high in Nagoya City and Osaka City. Within Tokyo 23 Wards, the proportion of “textile, clothing, and personal goods retailers” is high in Shinjuku Ward, Toshima Ward, and Shibuya Ward, while the proportion of “restaurants” is high in Chuo Ward and Minato Ward. As a characteristic store usage, is that stores allow vehicle delivery and stores where they can play table tennis.

Keywords: underground mall, shop, number of stores, city comparison

1. INTRODUCTION

In Japan, there is an underground mall that has been in operation for 70 years, and half of all underground malls have been open for over 50 years. Among them, some underground malls have retained their original interior appearance to the present day (*Figure 1.*), while others have been renovated resulting in changes to their interior landscapes. (*Figure 2.*) In metropolitan areas, government designated cities and regional cities, underground malls exist as a means of efficient land use near stations and are composed of a wide variety of stores. Underground networks of underground malls exist at Nagoya Station and Shinjuku Station. (*Figure 3.*) However, the composition of stores in underground malls is not clear. In addition, when comparing underground malls located in metropolitan areas and government designated cities with those located in other areas, it is possible that the composition of stores differs, and that there are regional characteristics in the composition of stores that make up underground malls. In addition, in recent years, there are several underground malls that have been renovated work due to aging. Therefore, it is important to clarify the current store composition in order to comprehensively understand the changes in the store composition before and after the renovation.

The purpose of this study is to investigate and discuss the actual situation of the composition of stores in underground malls throughout Japan, targeting underground malls with homepages.

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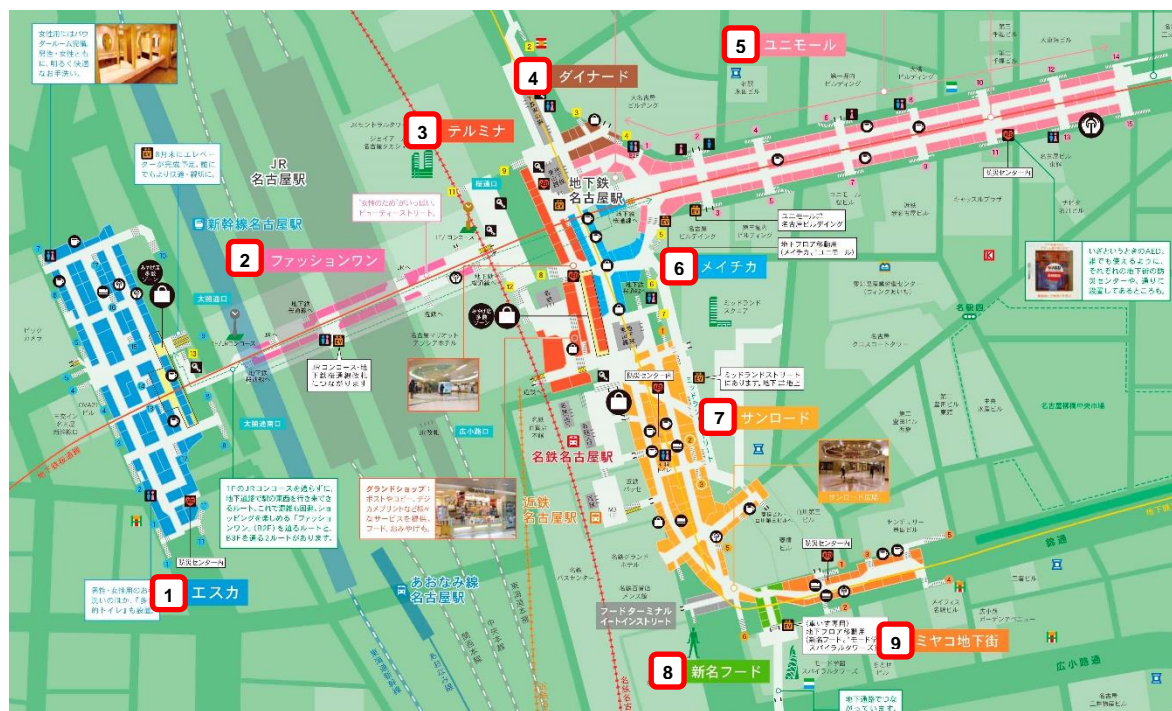
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Figure 1. Photo of Asakusa Underground Mall



Figure 2. Photo of Tenjin Underground Mall



Underground Shopping Mall

1 ESCA	1 Gate Walk (TERMINA)	4 Unimall	7 SUNROAD	9 MIYAKO ave.
2 FASHION ONE	2 Dainard	5 MEICHIKA	8 Shinmei food	

Figure 3. Underground mall network around Nagoya Station

2. MATERIAL AND METHODS

2.1. The underground mall examined in this study

The following two conditions are used to define the underground malls in this study. An underground mall is defined as an underground facility that integrates an underground walkway for public use and facilities such as stores facing the walkway, as specified in the “Outline of Underground Malls” by the Ministry of Land, Infrastructure, Transport and Tourism. (**Figure 4.**) The list of underground malls is based on the “List of Underground Malls” published by the Ministry of Land, Infrastructure, Transport and Tourism in March 2013, and 60 underground malls with homepages for underground malls are included from 78 underground malls.

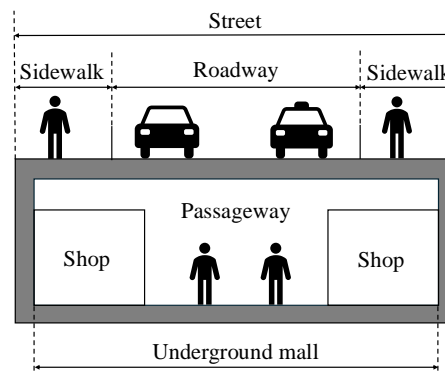


Figure 4. Overview plan of the underground mall

2.2. Research methods

The data for underground malls were collected from April 2023 to September 2023, from “Aurora Town” to “Tenjin Underground Mall”. Based on these data, we will investigate what type of store use is most common according to the medium classification of the Standard Industrial Classification by the Ministry of Internal Affairs and Communications.

We will also investigate the characteristics of the composition of stores in underground malls throughout Japan using all the aggregated data. Based on the total number of underground malls in a city, we compare the differences in store composition among 6 metropolitan areas (Tokyo Wards, Yokohama, Nagoya, Osaka, Sapporo, and Fukuoka). Finally, we identify the characteristic uses of underground malls that were identified during the survey of underground malls.

3. RESULTS

3.1. Japan-wide composition of store in underground malls

The total number of underground malls surveyed in this study was 60, and the total number of stores identified was 3,504. The number of cities with underground malls is 22, as shown in **Figure 5.** through **Figure 8.**

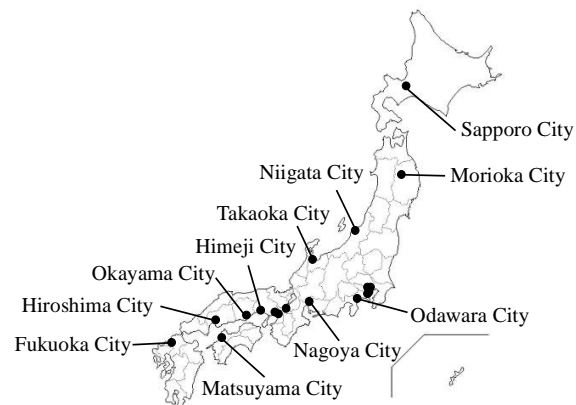


Figure 5. Cities with underground malls Japan-wide

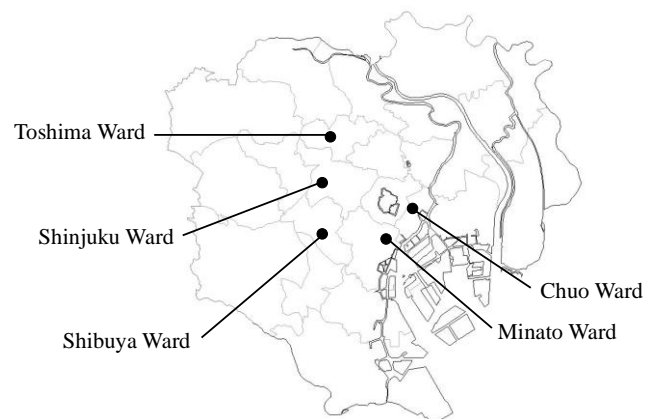


Figure 6. Cities with underground malls in Tokyo wards

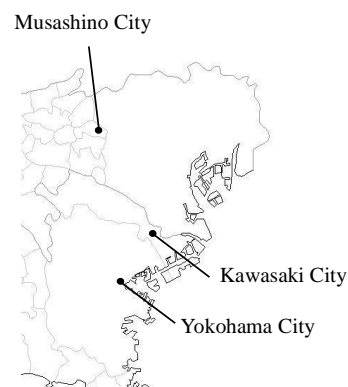


Figure 7. Cities with underground malls in Tokyo-Yokohama Area

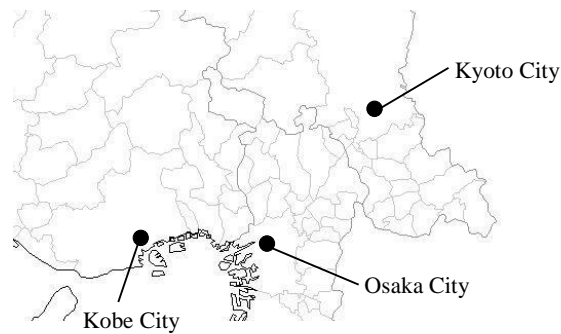


Figure 8. Cities with underground malls in Kyoto-Osaka-Kobe Area

The mean number of stores in the underground malls was 58, and the median was 45. **Table 1** shows the composition of underground malls Japan-wide. Other retailers are engaged in the sale of products such as pharmaceuticals, cosmetics, and books. Other lifestyle-related services include businesses such as clothing repair and travel agencies. The data for the middle category below the banking industry is summarized in “Others” due to the large number of data items.

“Textile, clothing, and personal effects retailers” accounted for the largest share, followed by “restaurants”, “other retailers”, and “food and beverage retailers”. 26 underground malls had the highest percentage of “textile, clothing, and personal effects retailers”, and 23 underground malls had the highest percentage of “restaurants”. Three underground malls had the highest percentage of other retailers, and four underground malls had the highest percentage of “food and beverage retailers”. 15 underground malls had the second highest percentage of other retailers, and nine underground malls had the second highest percentage of “food and beverage retailers”.

Table 1. *The composition of underground malls Japan-wide*

Standard Industrial Classification - Medium Classification	%
Textile, clothing, and personal effects retailers	28
Restaurants	27
Other retailers	14
Food and beverage retailers	13
Laundry, barber, beauty, bathhouse business	4
Other lifestyle-related services	3
Machinery and equipment retailers	2
Banking industry	2
Others	7

3.2. Composition of stores in Tokyo Wards, Nagoya City, Osaka City, Sapporo City, Yokohama City, and Fukuoka City

Table 2 shows a composition the number of underground malls and the total number of stores in Tokyo Wards, Nagoya, Osaka, Sapporo, Yokohama and Fukuoka cities. In Osaka City, the total number of underground malls is 8 and the total number of stores is 697, indicating that the average number of stores per underground mall is high. In Fukuoka City, the Tenjin Underground Mall is large in scale with 148 stores. **Table 3** shows the composition of underground malls in Tokyo Wards, Nagoya, Osaka, Sapporo, Yokohama and Fukuoka cities. The middle category, which has fewer stores than the number of stores in the machinery and equipment retailing industry, is summarized in the “Others” category due to the large number of industry categories.

Store use in Tokyo Wards and Yokohama City is led by textile and personal items retail, followed by restaurants. This is the same characteristic of underground malls Japan-wide. In Sapporo City, there are two more other retailers than restaurants, indicating that the percentage of other retailers is higher in Sapporo City than in the Japan-wide. Among Nagoya's underground malls, ESCA Underground Mall has 77 stores, with a high percentage of restaurants (43%). Fushimi Underground Mall have 39 stores, with a high percentage of “restaurants” (56%). In Osaka City, seven underground malls, excluding Diamor Osaka, have a high percentage of “restaurants”. In Fukuoka City, the Tenjin Underground Mall has the largest number of stores (148), with a high ratio of “textile, clothing and personal effects retailers” (50%), but a low ratio of “restaurants” (7%). On the other hand, the Hakata Station Underground Mall has fewer stores (35) than the Tenjin Underground Mall, and the percentages of textile, clothing and personal effects retailers” and “restaurants” are 31% and 26%, respectively.

Table 2. *Total number of underground malls and number of stores in Tokyo wards, Nagoya City, Osaka City, Sapporo City, Yokohama City, and Fukuoka City*

	Tokyo Wards	Nagoya City	Osaka City	Sapporo City	Yokohama City	Fukuoka City
Total number of underground malls	13	13	8	3	4	2
Number of stores	610	536	697	245	347	183

Table 3. The composition of underground malls in Tokyo Wards, Nagoya City, Osaka City, Sapporo City, Yokohama City, and Fukuoka City(%)

City	Tokyo Wards	Nagoya City	Osaka City	Sapporo City	Yokohama City	Fukuoka City
Standard Industrial Classification - Medium Classification						
Textile, clothing, and personal effects retailers	29	27	21	35	33	47
Restaurants	24	26	37	19	32	11
Other retailers	14	14	13	19	14	19
Food and beverage retailers	14	10	9	13	11	12
Laundry, barber, beauty, bathhouse business	5	5	4	4	2	3
Other lifestyle-related services	4	3	4	2	3	3
Machinery and equipment retailers	1	2	2	2	1	2
Others	9	13	10	6	4	3

3.3. Composition of stores in Tokyo wards (Chuo Ward, Minato Ward, Shibuya Ward, Shinjuku Ward, Toshima Ward)

Table 4 shows the total number of underground malls and stores in Chuo, Minato, Shibuya, Shinjuku and Toshima wards.

Table 4. Total number of underground malls and number of stores in Chuo Ward, Minato Ward, Shibuya Ward, Shinjuku Ward, and Toshima Ward

	Chuo Ward	Minato Ward	Shibuya Ward	Shinjuku Ward	Toshima Ward
Total number of underground malls	2	2	1	5	3
Number of stores	175	51	21	233	130

In Chuo Ward, the Yaesu Underground Mall is the largest, with 171 stores. In Shinjuku and Toshima wards, the number of stores per underground mall is close to the Japan-wide median and average of underground malls. On the other hand, the number of stores per underground mall in Minato and Shibuya wards is small compared to the national median and average of underground malls, indicating that they are small underground malls. **Table 5** shows the store composition of underground malls in Chuo, Minato, Shibuya, Shinjuku, and Toshima wards. In Chuo Ward, the Yaesu Underground Mall has a large number of stores (171) and a high percentage of restaurants (39%) compared to the national average. On the other hand, the number of stores in the “Echika Ginza” is four, which is lower than that of the Yaesu Underground Mall. Therefore, the percentage of restaurants is high in the data for Chuo Ward. In Minato Ward, “Wing Shimbashi” has 25 stores and 32% of restaurants, which is slightly higher than the national data. In addition, the number of stores in Echika Omotesando is 26, and the ratio of restaurants is 34%, which is slightly higher than the national data, thus the ratio of restaurants is slightly higher in the Minato Ward data. In Shibuya Ward, the only underground mall is the Shibuya Underground Mall, which is characterized by the lack of restaurant stores. In Shinjuku Ward, “LUMINE EST SHINJUKU” has 79 stores, and the percentage of textile, clothing, and personal effects retailers is 67%, which is higher than the national value, suggesting a high percentage of textile, clothing, and personal effects retailers in the Shinjuku Ward data. The largest number of stores in Toshima Ward are textile, clothing, and personal effects retailers, followed by restaurants, which is similar to the composition of the number of stores in underground malls Japan-wide. The reason for the highest percentage of textile, clothing and personal effects retailers in the data for Tokyo wards may be due to the high percentage of textile, clothing and personal effects retailers in Shinjuku, Toshima and Shibuya wards, and the second highest percentage in Chuo and Minato wards.

Table 5. The composition of underground malls in Chuo Ward, Minato Ward, Shibuya Ward, Shinjuku Ward, and Toshima Ward (%)

City	Chuo Ward	Minato Ward	Shibuya Ward	Shinjuku Ward	Toshima Ward
Standard Industrial Classification - Medium Classification					
Textile, clothing, and personal effects retailers	18	29	33	38	29
Restaurants	39	33	0	19	25
Other retailers	11	8	19	16	16
Food and beverage retailers	6	16	14	14	15
Laundry, barber, beauty, bathhouse business	6	4	0	3	5
Other lifestyle-related services	4	4	14	3	5
Others	16	6	20	7	5

3.4. Characteristic store use

There are 20 characteristic store uses, which are shown in **Table 6**. Tesla Delivery Center Nagoya is located in the “Central Park Underground Mall. This is the only place in the underground mall where cars can be delivered. Metro Table Tennis is located in Metro Kobe, and table tennis can be played by paying a fee. This is the only place where table tennis is available in the underground mall.

Table 6. Characteristic store use

Underground Mall	Characteristic store use
Takaoka Station Underground Mall	Study Cafe Takaoka
ESCA Underground Mall	Tour Bus Counter
ESCA Underground Mall	H ¹ T (Shared office)
Fushimi Underground Mall	Fushimi Underground Mall Cooperative Association
Fushimi Underground Mall	Chojamachi Satellite Studio
Fushimi Underground Mall	Small-scale workshop Dream
Central Park Underground Mall	Tesla Delivery Center Nagoya
Mori Underground Mall	Art Gallery Komori
Zest Oike	Kyoto City Certificate Issuance Corner
Dojima Underground Center	CAFÉ On the
NAMBA WALK	Minami Recruitment Office, Japan Self-Defense Forces, Ministry of Defense
AVETICA	Self-Defense Forces Recruitment Office
DIAMOR OSAKA	Osaka City Umeda Service Counter
DIAMOR OSAKA	cool MINT
DIAMOR OSAKA	Yamazawa Judicial Scrivener Corporation
DIAMOR OSAKA	DIAMOR LOBBY
Metro Kobe	Metro TT Studio
Metro Kobe	Metro Table Tennis
Shareo	Fureai Plaza
Shareo	Employment support counter IROHA

4. DISCUSSION

The store composition varied depending on the district, but since there are many restaurants in Osaka City, where has a relatively large number of stores, the store composition may differ depending on the number of stores.

In addition, since this study compared each district, no difference was found between before and after the renovation of the underground mall.

5. CONCLUSION

In this study, the composition of stores in underground malls Japan-wide was clarified, and the characteristics of the composition of underground malls were determined for the wards of Tokyo, Nagoya, Osaka, Sapporo, Yokohama, and Fukuoka cities. The top four categories in the composition of stores in underground malls are

textile, clothing and personal effects retailers, restaurants, other retailers, and food and beverage retailers. In the Sapporo City, Yokohama City, Fukuoka City, and Tokyo Wards, the majority of stores were textile, clothing, and personal effects retailers, while in the Nagoya and Osaka cities, the majority of stores were restaurants. In addition, the presence of stores that provide car delivery services and table tennis were identified as characteristic store uses.

In the future, we plan to compare the characteristics of the store composition in each underground mall, and at the same time, clarify the status of vacant stores and the transition of stores.

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