

Signage System of the Railway Station in Japan—from the View of Foreign Passengers

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Abstract: Recently, the foreign tourists to Japan are increasing since VJC. On the other hand, the railway stations in Japan are becoming complicated. It is important to make the station space more comfortable and convenient. This paper focus on the issues of the Signage Systems of the Stations in Japan and the purpose is to build a tool to identify “problem signs” which the foreign passengers feel hard to understand.

Keywords: Railways, Stations, Japan, Signage System

1. INTRODUCTION

1.1 Background

Japan, as an international country, attracts millions of international tourists every year. Since 「Visit JAPAN Campaign」 in 2003, the number of foreign tourists have been increasing every year. In 2015, about 20 million foreign tourists visited Japan. And it became 24 million in 2016. As we all know, the 2020 Olympic will be held in Tokyo, the increase of foreign tourists can be expected.

On the other hand, the railway station, as an important traffic facilitate of transport modes shift, the function of what is becoming diverse in Japan. And the structure of the railway is becoming complicate that there are many comment by the foreign passengers that it is hard to find the way in the stations in Japan(such as Shinjuku Station).

With the background that the increase of the foreign passengers and the complication of the railway stations in Japan, it is important to provide more comfortable and convenient facilitates and environments for the foreign passengers in the railway stations in Japan. According to that, this paper is focus on the Signage Systems in the railway station in Japan which is designed to lead the users to find the way in the complicated station space.

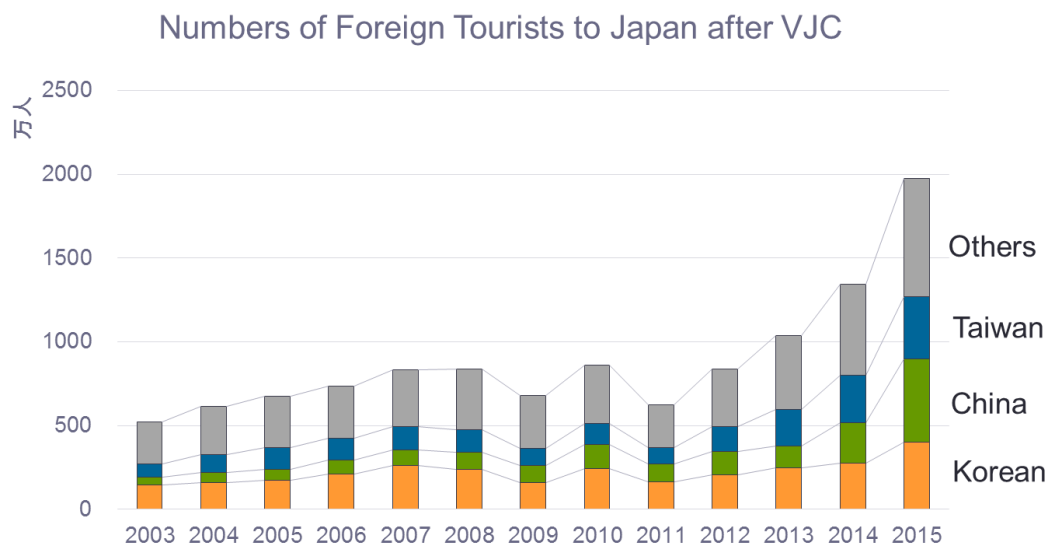


Figure 1. Increase of Foreign Tourists to Japan after VJC

1.2 Issue of the Signage Systems of the Stations in Japan

The railway stations in Japan is deferent from which is in other country, the station spaces are managed by different organizations (different companies and public organizations) and there is no group that can integrate those organizations. The signs in the station are designed and set by different organizations with different standards and rules. Those signs with different styles become one reason that makes the station space more confusing and complicated.

Recently, researchers as Ieda, Akase, organizations like The Foundation for Promoting Personal Mobility and Ecological Transportation (abbreviated as "Eco-Mo Foundation") are focus on this issue and some policy and plans have been introduced and applied. Researchers as Ieda, Akase summary the factors of the signage systems according to the actual condition survey in the stations, and those conclusions are put together in the guideline issued by "Eco-Mo Foundation" as the standard which can be followed when sign design and setting. Such projects have been proceeding in the recent years, but still there are many comments from the foreign passengers on the net that they have lost their way in the stations. There are still issues need to advance in the Signage Systems of the Stations in Japan.

1.3 Research Purpose and Procedure

This paper focus on the issues of the Signage Systems of the Stations in Japan and the purpose is to build a tool to identify "problem signs" which the foreign passengers feel hard to understand. For this purpose, the research methods and procedure are as follows.

- 1) On-site inspection in the stations in Tokyo to have a grasp of the factual situation about the Signage Systems.
- 2) Interview and brainstorming with foreigners to know what kinds of signs in what situations the foreigners feel confusing when being in the stations as the view of foreign passengers.
- 3) The Signage Systems guidelines review to find out the criterions which can be used to judge the "problem signs".
- 4) Collection of the patterns of "problem signs" according to the view by the procedure

- 1)2)3).
- 5) Identify “problem signs” and aggregate the number in three sample stations according to the patterns collected by the procedure 4) to have a grasp of the factual situation about the signs in the three sample stations.

2. RESEARCH METHODS

2.1 On-site Inspection

Three sample stations of different scale are chosen as the subjects of research and other five stations are chosen to increase the sample of the signs. The photo of the signs and the location of the signs are recorded as the main research material. In addition, maps of the three sample stations on the homepage of the railway companies are collected.

Three sample stations: Tsukuba Station, Takatanobaba Station, Ikebukuro Station.

Other five stations: Kitasenju Station, Akihabara Station, Ohtemachi Station, Nishinipori Station, Tokyo Station.



Figure 2. Photo of the Sign in Akihabara Station

池袋駅

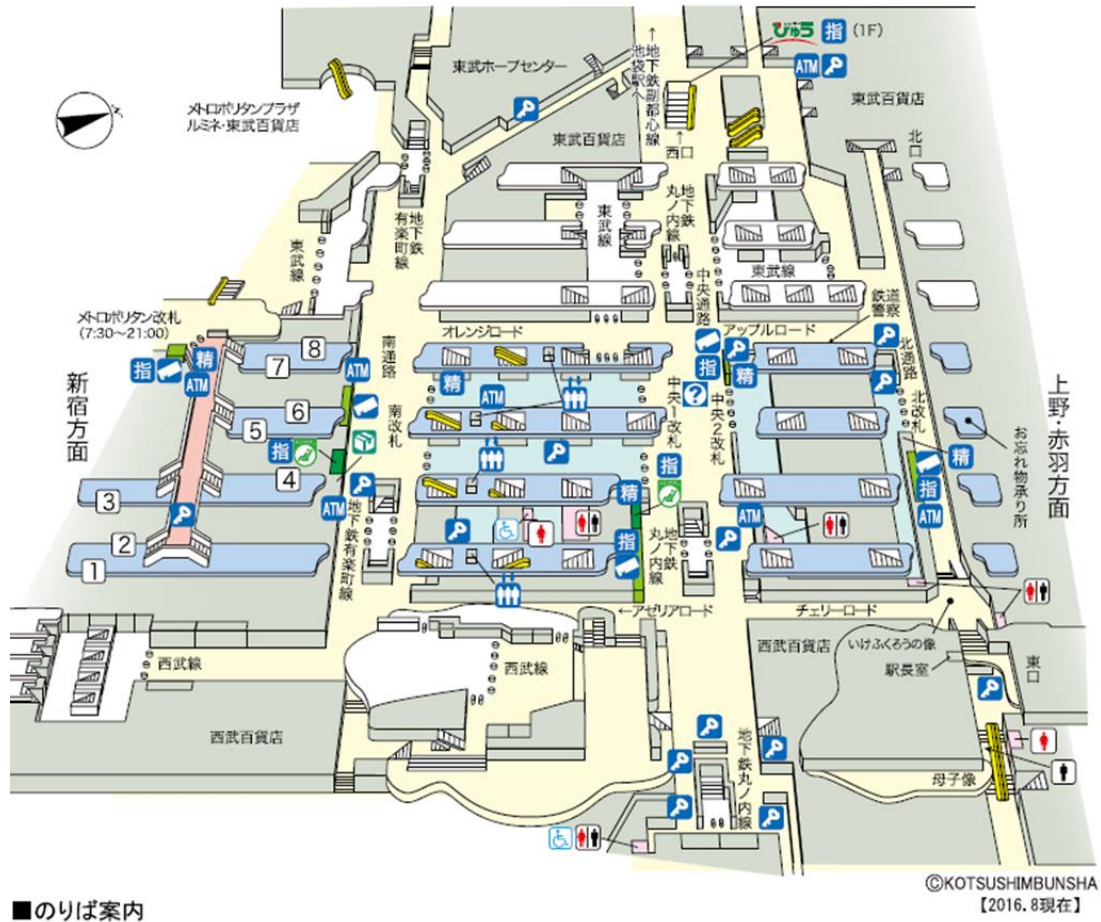


Figure 3. Map of Ikebukuro Station on JR Homepage

Table 1. Number of the sign collected in three sample station

	Tsukuba Station	Takatanobaba Staion	Ikebukuro Station
The number of the signs collected / The number of the leading signs	94/57	281/194	984/782

2.2 Interview and brainstorming

The interview is taken with four Japanese students and five foreign students at Tsukuba University to know the detailed situation and the difference between Japanese and foreign passengers when they used the signs in the stations. The brainstorming is taken with nine foreign students at Tsukuba University to discuss the keywords of the issues of the Signage Systems.

According to the research above, three key problems are summarized as follow:

- 1) “Arrow problem”(Arrows on the signs are hard to understand)
- 2) “Foreign language display problem”(There’s no foreign language display on the signs or the foreign language displays are hard to see)
- 3) “The lack of cooperation”(Lacks of signs setting in the public spaces such as shopping

streets in the station or station squares because of The lack of cooperation between different management organizations)

2.3 Guidelines review

According to the guidelines ^{[12][13][15][16]} published by "Eco-Mo Foundation", the most important criterions of sign design and setting is "Five principles of the Signage Systems" which is based on "Seven principles of universal design".

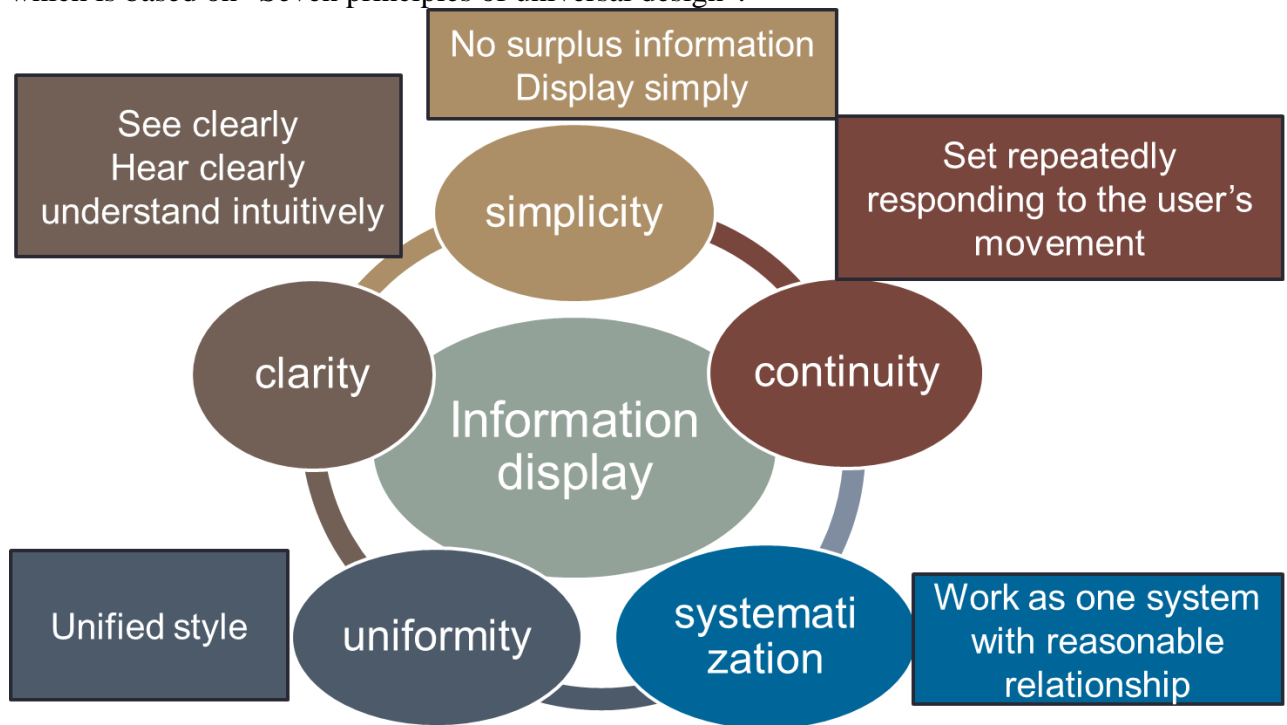






Figure 4. Image of "Five principles of the Signage Systems"

3. PATTERNS OF "PROBLEM SIGNS"

3.1 Arrow Problem

Thirty-one patterns of eight kinds of arrows are collected about the "Arrow Problem" with "Arrow" "Meaning" "Photo" "Scene image of setting" "Five principles checks".

Table 2. Summary of "Arrow Problem"

	Bad setting position leading to misunderstanding.
	Bad setting position and display aspect lead to misunderstanding. The meaning of "go back" expressed by this arrow is hard to understand.
	Bad setting position and display aspect make the sign hard to find. Setting on the pillar makes the sign warped.
	Direction pointing become unclear set at where visibility is poor. Bad setting position and display aspect lead to misunderstanding. Bad setting position and display aspect make the meaning complicated.







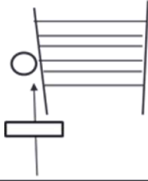
	The meaning of “go back” expressed by this arrow is hard to understand. Bad setting position and display aspect lead to misunderstanding. Bad setting position and display aspect make the meaning complicated.
	NA
	Bad setting position and display aspect make the meaning complicated.
	The meaning of this arrow is complicated. The meaning of this arrow foreigners take is different from which is expressed in Japan.

Table 3. Pattern of the signs of “Arrow Problem”

Example	Arrow	
	Scene	
	simplicity	✓
	clarity	× (“go straight ahead” or “go up the stairs”. The meaning the arrow express become unclear if the sign is set at such position. It is possible to be misunderstood if the foreign passenger doesn't know Japanese.)
	uniformity	× (The setting position is not uniformity)

3.2 Foreign Language Display Problem

Four patterns are collected about the “Foreign Language Display Problem” with “Pattern” “Photo” “Cause” “Five principles checks”.

Four patterns:

- 1) “Low visibility”: The size of the Foreign Language Display is too small that it is hard to see the information on the signs.
- 2) “Unfairness”: Some information (usually the information added after) is displayed only by Japanese without foreign language.
- 3) “Lack of unity”: The foreign language translations are not unified.
- 4) “Unnaturalness”: The foreign language translations are strange for the foreign users.

Table 4. “Low visibility” Pattern of the signs of “Foreign Language Display Problem”

simplicity	▲ (depend on the number of the languages)
clarity	× (The size is smaller and it is hard to see) according to the web research by Tokyo
uniformity	× (The size of the foreign language display should be three-fourth as the size of the Japanese one which is mentioned in guideline)
cause	<ul style="list-style-type: none"> ▪ The size of the foreign language display is smaller than the Japanese one which cause the display hard to see ▪ The number of the languages add to two or four kinds, but the size of the signs doesn't become larger.



3.3 The Lack of Cooperation

Four patterns are collected about the “The Lack of Cooperation” with “Pattern” “Photo” “Cause” “Five principles checks”.

Four patterns:

- 1) “Nora Signs”: The signs whose design styles are obviously different from the original Signage Systems.
- 2) “Maps of the station”: The maps of the station are designed by different organizations. The design styles of the maps and the area the maps covering are different even if they’re the maps of the same station.
- 3) “Lack of unity”: The design styles are different because of The lack of cooperation between different management organizations.
- 4) “Lacks of setting in public spaces”: Lacks of signs setting in the public spaces such as shopping streets in the station or station squares because of The lack of cooperation between different management organizations.

Table 5. “Nora Signs” Pattern of the signs of “The Lack of Cooperation”





























uniformity	× (This kind of signs are not designed and set according to the guidelines. It will cause incompatibility with the signs set by the public organizations.)
systematization	▲ (This kind of signs are designed and set without guidelines, it is doubt that this kind of signs can be one system with other signs)
continuity	× (As signs supplied, this kind of signs are not set enough and keep continuity)
cause	・ This kind of signs are the supplement for the Signage Systems, and usually designed and set by the staff in the stations without guidelines.

















4. IDENTIFICATION AND AGGREGATION OF “PROBLEM SIGNS”

4.1 Arrow Problem

Table 6. Aggregation of the signs of “Arrow Problem”

Tsukuba Station			 	 	 	 	 	 
Problem signs/ Collected signs (percentage)	2/18 (11.1%)	0/1 (0.0%)	2/26 (7.7%)	10/17 (58.8%)	0/1 (0.0%)	0/0 (0.0%)	0/0 (0.0%)	3/5 (60%)
Takatanobaba Station			 	 	 	 	 	 
Problem signs/ Collected signs (percentage)	6/86 (7.0%)	2/15 (13.3%)	5/104 (4.8%)	18/30 (60.0%)	8/13 (61.5%)	0/4 (0.0%)	0/6 (0.0%)	13/14 (92.9%)

Ikebukuro Station			 	 	 	 	 	 
Problem signs/ Collected signs (percentage)	6/295 (2.0%)	13/65 (20.0%)	18/354 (5.1%)	40/109 (36.7%)	12/46 (26.1%)	0/49 (0.0%)	0/32 (0.0%)	29/37 (78.4%)

The percentages of “problem signs” in “↶” “↷” “U turn” three kinds of arrows are highest. The percentages of “problem signs” in “↶” “↷” are over 20%. The percentage of “U turn” is over 60%.

4.2 Foreign Language Display Problem

Table 7. Aggregation of the signs of “Foreign Language Display Problem”

Tsukuba Station	Low visibility	Lack of unity	Unfairness	Unnaturalness	Collected signs
	Problem signs(percentage)				
Suspended	0(0.0%)	5(18.5%)	0(0.0%)	4(14.8%)	27
Wall-mounting	0(0.0%)	0(0.0%)	0(0.0%)	2(25.0%)	8
Posting	4(13.3%)	0(0.0%)	4(13.3%)	0(0.0%)	30
Free-standing	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	2
Floor face	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0
Totals	4(6.0%)	5(7.5%)	4(6.0%)	6(9.0%)	67

Takatanobaba Station	Low visibility	Lack of unity	Unfairness	Unnaturalness	Collected signs
	Problem signs(percentage)				
Suspended	10(8.0%)	3(2.4%)	8(6.4%)	13(10.4%)	125
Wall-mounting	2(6.3%)	1(3.1%)	0(0.0%)	1(3.1%)	32
Posting	1(3.0%)	0(0.0%)	23(69.7%)	1(3.0%)	33
Free-standing	1(33.3%)	0(0.0%)	0(0.0%)	0(0.0%)	3
Floor face	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	9
Totals	14(6.9%)	4(2.0%)	31(15.3%)	15(7.4%)	202

Ikebukuro Station	Low visibility	Lack of unity	Unfairness	Unnaturalness	Collected signs
	Problem signs(percentage)				
Suspended	61(13.7%)	32(7.2%)	15(3.4%)	24(5.4%)	445
Wall-mounting	44(23.9%)	5(2.7%)	0(0.0%)	13(7.1%)	184
Posting	11(8.9%)	4(3.3%)	14(11.4%)	0(0.0%)	123
Free-standing	7(25.9%)	6(22.2%)	0(0.0%)	0(0.0%)	27
Floor face	0(0.0%)	0(0.0%)	9(52.9%)	0(0.0%)	17
Totals	123(15.5%)	47(5.9%)	38(4.8%)	37(4.6%)	796

The percentage of the “Problem Signs” in “Low visibility” grows in response to the scale of the station.

The percentage of the “Problem Signs” in “Unfairness” is high if it is Posting or Floor face type whose standards are less than the other types in the guidelines.

4.3 Nora Signs

Table 7. Aggregation of the signs of “Nora Signs”

Tsukuba Station	Nora signs	Percentage	Collected signs
Suspended	0	0.0%	27
Wall-mounting	0	0.0%	8
Posting	3	10.0%	30
Free-standing	0	0.0%	2
Floor face	0	0.0%	0
Totals	3	4.5%	67

Takatanobaba Station	Nora signs	Percentage	Collected signs
Suspended	0	0.0%	125
Wall-mounting	0	0.0%	32
Posting	20	60.6%	33
Free-standing	0	0.0%	3
Floor face	0	0.0%	9
Totals	20	9.9%	202

Ikebukuro Station	Nora signs	Percentage	Collected signs
Suspended	10	2.2%	445
Wall-mounting	3	1.6%	184
Posting	43	35.0%	123
Free-standing	0	0.0%	27
Floor face	5	29.4%	17
Totals	61	7.7%	796

The percentage of the “Problem Signs” in “Nora Signs” grows in response to the scale of the station.

The percentage of the “Problem Signs” in “Nora Signs” is high if it is Posting or Floor face type whose standards are less than the other types in the guidelines.

5. CONCLUSION

5.1 Arrow Problem

Setting position, display aspect of the sign and the meaning the arrow expresses should be thought together when sign design and setting.

The percentages of “problem signs” in “↖↗” “↘↙” and “U turn” are high in three sample stations. The signs including those three arrows should be improved.

5.2 Foreign Language Display Problem

The visibility of the signs in the large scale stations where there’s more information on the signs should be improved.

The signs that display in only Japanese should be improved.

5.3 The Lack of Cooperation

The Nora signs which are designed and set without guidelines in the stations are the problem which should be solved.

The area that maps of stations covering is not incomplete.

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