

[研究論文]

Empirical Research on the Current Situation of Sister City Relationship: Example for the Japan-French Sister City

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Abstract

The purpose of this study is to survey Japanese-French sister cities. In this study, over the two years of 2017-2018 fiscal year, in Japan and France sister city relationship in recent years, we selected several local governments from Japan and France sister cities. This study focuses on questionnaire surveys and aims to clarify the causes of active sister city exchanges and the causes of stagnation. From the results, we were able to partially show that the meaning has changed in the global era.

Specifically, we were able to observe that the economic alliances of sister cities may not have been as successful for some reason, and that the concept of environmental exchange has occurred with the changing times. The content of sister city exchanges tended to be limited and unchanging because the travel cost in the annual sister city exchange budget had to be high. Furthermore, we pointed out that the chief's attitude toward sister city exchanges may adversely affect the situation of exchanges, resulting in intermittent sister city exchanges. Furthermore, there is no difference in issues and problems in sister city exchange between Japan and France, but there are differences in requests to their own governments and local governments between Japan and France. In other words, it is suggested that while the sister cities of Japan and France have similar issues and problems, there may be a certain degree of passion for their own governments and local governments.

In this study, in order to clarify the factors behind the active sister city exchanges in the Japan-France sister city relationship, we set up an estimation model. As a result of the analysis, regarding the positive factors in Japan, the degree of achievement of the main goals set at the time of tie-up with the partner sister city is high, if the current purpose of exchange is cultural exchange and human exchange, and the sister city exchange of the boss. Regarding the positive factors in Japan, the degree of achievement of the main goal with the partner sister city is high, the current purpose of exchange is cultural exchange and human exchange, and the boss is highly active in sister city exchange, these lead to the current sister city exchange is going well. Similarly, we suggested that the current sister city exchange is going well, if the fact that the main goals are highly achieved, and if the number of staff in charge of the partner sister city is substantial, regarding the positive factors in France. On the other hand, regarding the negative factors in Japan, it was suggested that the current sister city exchanges are not going well, and that low motivation of the partner sister cities leads to a slump in sister city exchanges. Similarly, regarding the negative factors in France, it was suggested that the current sister city exchanges are not going well, and that the shortage of staff has led to a slump in sister city exchanges.

Keywords: sister city relationship, France, Japan

1. Introduction

1.1 Background

The number of sister city relationships between Japanese and French local governments has reached 54 in 2018 since the first sister city relationship was signed between Kyoto and Paris in 1958. In some cases, the exchange deepens over the years, and in other cases, the tie-up is just a name and ends up in an anticlimax. In this study, over the two years of 2017–2018 fiscal year, in Japan and France sister city relationship in recent years, we selected several local governments from Japan and France sister cities. Then, we conducted a fact-finding survey (questionnaire survey and hearing survey) on sister city exchanges between Japanese and French local governments. Among them, this study focuses on questionnaire surveys and aims to clarify the causes of active sister city exchanges and the causes of stagnation. The purpose of this study was to survey all 51 Japanese-French sister cities registered with the Council of Local Authorities for International Relations [CLAIR] as of April 2017. In 2017, we conducted a questionnaire survey of 51 sister cities in Japan and received responses from all local governments. In 2018, a similar survey was conducted on sister cities on the French side, and 27 responses were obtained.

1.2 Previous research

Ishimi (1995) explored the actual conditions of sister city relationships and their effects on town planning, including the characteristics of local governments that have sister cities, expectations for sister cities, the reasons for sister cities, reasons for choosing sister cities. As a result of the analysis, the most common reason for sister city relations was “offer from partner city”, accounting for 29.5% of the total, and the next most common was “mayor’s proposal”. Regarding the reasons for selecting the partner city, except for the answer that “there was an offer from the partner city”, “the geographical characteristics are similar” and “the industrial structure is similar” were the most common.

In addition, it is reported that the answers given in the 2nd to 3rd place are “the country has strong ties with Japan” and “the population size is similar”.

Similarly, Iwami (1995) classified the countries where sister cities are located as “similarity,” “image,” “exchange,” and “country-prefecture ties.” Then, a chi-square test was performed on the relationship between the reason for selecting the partner city and the location of the sister city. As a result of the analysis, it was found that there is a relationship between the reason for selecting the partner city and the country where the sister city is located.

In addition, regarding the relationship between the reason for selecting the partner city and the population of the partner city, it was observed that the smaller the population, the more similar the city is.

Furthermore, regarding the relationship between the reasons for selecting the partner city and the population of its sister cities, the smaller the population, the higher the “similarity”. Regarding the population of the sister cities surveyed and the population of the partner sister cities, it has been reported that there is a tendency to partner with sister cities with similar population sizes.

As mentioned above, it seems that there are various backgrounds in the tie-up between sister cities, but there are not many that have verified the sister city relationship from an empirical approach. In this study, we will empirically verify the current situation of sister city exchanges based on a questionnaire survey.

2. Questionnaire survey

In this study, referring to the questions in the questionnaire survey by Ishimi (1995) and Sato et al. (2000), we clarify the factors behind the active exchange and causes of stagnation in recent years between Japanese and French sister cities over the two years from 2017 to 2018.

As a survey target, we conducted a survey using a questionnaire to 51 Japanese and French sister cities registered with the Council of Local Authorities for International Relations [CLAIR] as of April 2017. In 2018, we conducted a web survey of the same number of sister cities with the same content as the previous year. As a result of the aggregation, we received responses from 51 Japanese local governments in 2017, while we received 27 responses from about half of the French local governments in 2018.

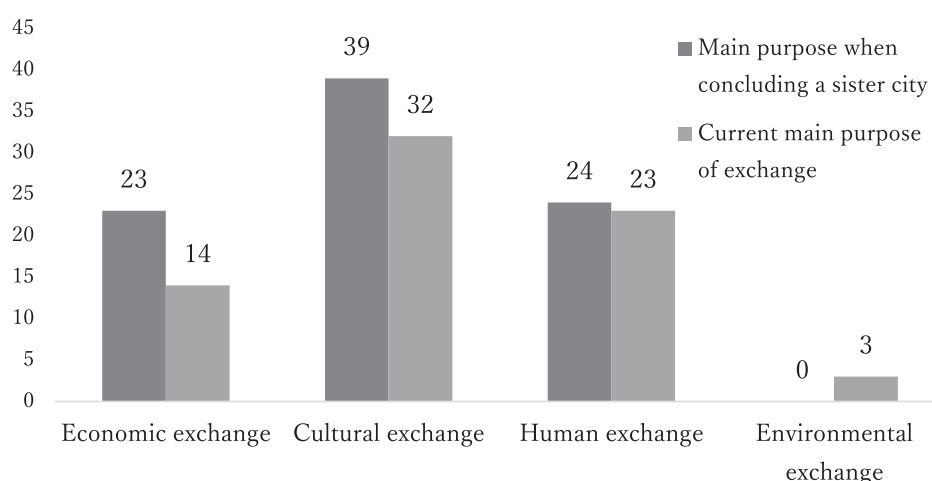
2.1 Questionnaire results of Japanese and French sister cities

2.1.1 Aggregation results of sister cities in Japan

As shown in Figure 2-1 regarding the main objectives of the sister city tie-up, in descending order of answers, “cultural exchange” (n = 39), “human exchange” (n = 24), and “economic exchange” (n = 23). Regarding the current purpose of exchanges between major sister cities, in descending order of answers, “cultural exchange” (n = 32), “human exchange” (n = 23), and “economic exchange” (n = 14), “Environmental exchange” (n = 3).

Among the stagnation trends in Japan-France sister city exchanges as a whole, what is particularly noteworthy is the significant decrease in economic and cultural exchanges and the occurrence of tourism exchanges. It suggests that the economic alliances of sister cities may not have been as successful for some reason. On the other hand, it can be said that the concept of environmental exchange, which was not involved in the sister city tie-up, is a relatively new purpose of exchange that arose with the changing times.

Figure 2-1 Changes in the main objectives of Japan's Japan-France sister city tie-up (N=51)



As shown in Figure 2-2, regarding issues and problems in sister city exchanges in France, in descending order of answers, “long distance” (n = 23) and “small budget for sister city exchanges in Japan” (n = 14), “Intermittent exchange due to change of local chief executive” (n = 9), “Insufficient number of staff” (n = 5), “Insecurity” (n = 3), “Inconvenient transportation” (n = 3), “the partner sister city is reluctant” (n = 2), and

“decreased motivation” (n = 1).

Considering the sister city exchange between Japan and France, the cost of traveling over long distances must be high. Apart from the anniversary events every 5 or 10 years, the travel cost of the annual sister city exchange budget has to be high, so the content of the sister city exchange tends to be limited and unchanging. Furthermore, we found that the chief’s attitude toward sister city exchange affects the exchange, and the sister city exchange becomes intermittent.

Figure 2-2 Problems in France’s sister city exchange

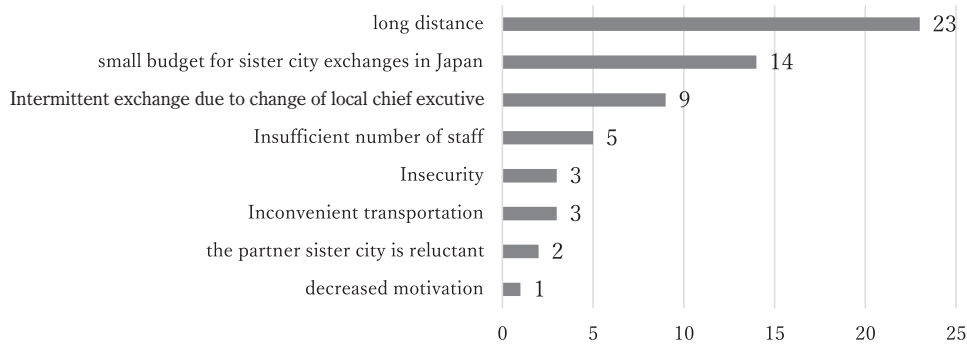
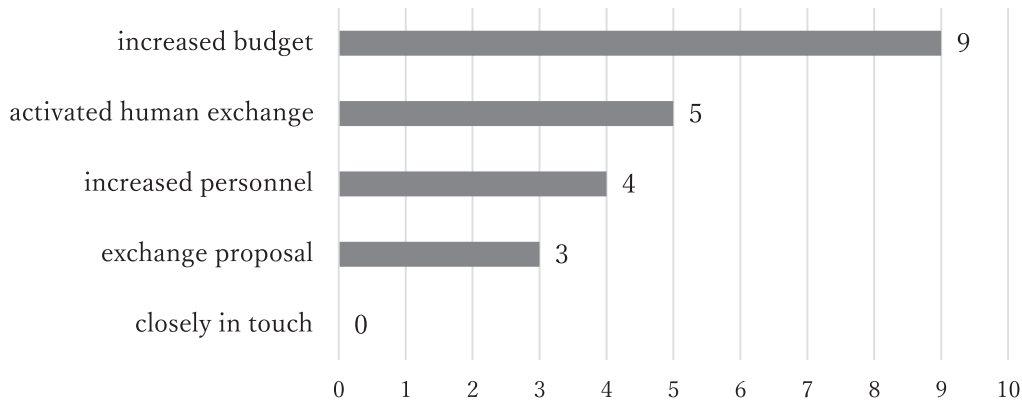


Figure 2-3 Requests to the government and local governments



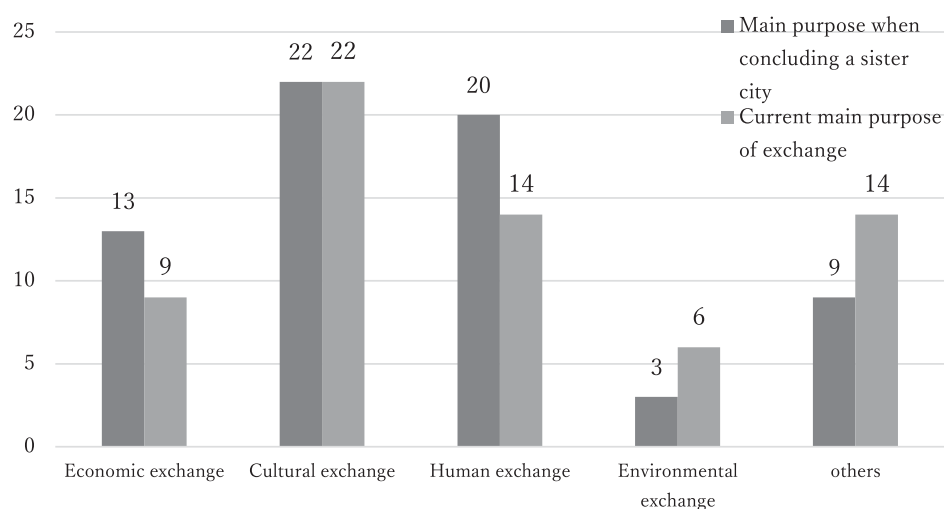
As shown in Figure 2-3, the sister cities of Japan responded to questions about requests to the Japanese government and local governments in descending order of “increased budget” (n = 9) and “activated human exchange” (n = 5), “increased personnel” (n = 4), and “exchange proposal” (n = 3).

In addition, since there was no demand for “closely in touch”, it is suggested that local governments may not want the active involvement of the country in the exchanges between sister cities.

2.1.2 Aggregation results of sister cities in France

As shown in Figure 2-4, in order of the number of answers to the questions regarding the main purpose of the sister city tie-up, “cultural exchange” (n = 22), “human exchange” (n = 20), and “economic exchanges” (n = 13), “Others” (n = 9), and “Environmental exchanges” (n = 3). In addition, in descending order of the answers to the questions regarding the current purpose of exchange in the main sister cities, “cultural exchange” (n = 2), “human exchange” (n = 14), “others” (n = 14), “economic exchange” (n = 9), and, “envi-

Figure 2-4 Changes in the main objectives of France's Japan-France sister city tie-up

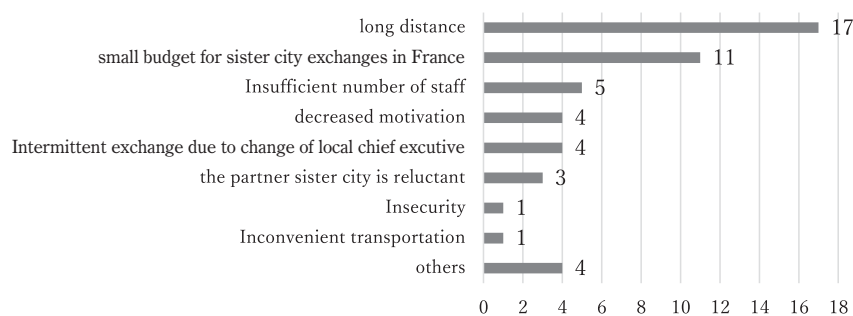


ronmental exchange" (n = 6).

Similar to the results shown in Fig. 2-1, there was a downward trend in "economy" and "human exchange". In addition, there was an increasing trend in "environmental exchange" and "others". In particular, factors related to "others" included art, sports, and exchanges between schools. As with environmental exchanges, it is suggested that the range of exchanges may have expanded in response to changes in the times.

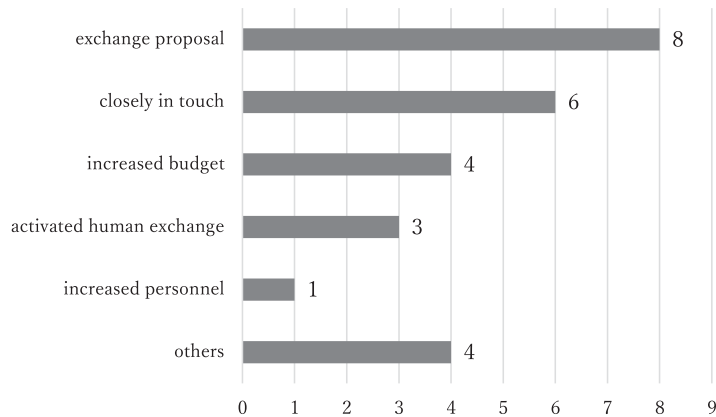
As shown in Figure 2-5, in order of the number of answers to the questions regarding issues and problems in Japan's sister city exchange, "long distance (n = 17)", "Japan's sister city exchange budget is small (n = 11)", "Insufficient number of staff (n = 5)", "Low motivation (n = 4)", "Intermittent exchanges due to change of chiefs" (n = 4), "Others" (n = 4), "Japanese sister cities are not aggressive (n = 3)", "unsafe (n = 1)", and "poor transportation (n = 1)".

Figure 2-5 Issues and problems in Japan's sister city exchange



As shown in Figure 2-6, the French sister cities responded to questions about requests to the French government and local governments in descending order of the number of answers, "Proposal for exchange from Japan (n = 8)", and "Close contact. (n = 6)", "Increase in sister city budget (n = 4)", "Others" (n = 4), "Activation of human exchange (n = 3)", and, "Increase in the number of sister city exchanges" (n = 1)".

Figure 2-6 the French sister cities responded to questions about requests to the French government and local governments



2.1.3 Issues and problems in sister city exchanges, and differences between the two countries in requests to their own governments and local governments

In order to verify the differences between the two countries regarding issues and problems in sister city exchanges, a chi-square test was performed on the cross tabulation table in Table 2-1. As a result, no significant difference was observed, and it could not be said that there was a difference in issues and problems in sister city exchange between Japan and France.

Table 2-1 Cross-tabulation table on issues and problems in sister city exchanges

	long distance	small budget for sister city exchanges in France	Insufficient number of staff	decreased motivation	Intermittent exchange due to change of local chief executive	the partner sister city is reluctant	Insecurity	Inconvenient transportation	others	total
France	17	11	5	4	4	3	1	1	4	50
Japan	23	14	5	1	9	2	3	3	0	60
total	40	25	10	5	13	5	4	4	4	110

($\chi^2(8) = 10.34, p > 0.1$)

In addition, in order to verify the difference between the two countries regarding the requests to the local government and local governments, a chi-square test was performed on the cross tabulation table in Table 2-2, and a significant difference was found. Therefore, it was found that there are differences in the requests to the local government and local governments between Japan and France.

Table 2-2 Cross-tabulation table regarding requests to the local government and local governments

	others	increased personnel	activated human exchange	increased budget	closely in touch	exchange proposal	total
France	4	1	3	4	6	8	26
Japan	0	4	5	9	0	3	21
total	4	5	8	13	6	11	47

($\chi^2(5) = 16.15, p < 0.01$)

2.2 Estimated model

In this study, we clarify the factors that cause active sister city exchanges in the Japan-France sister city relationship, that is, the factors that have a positive influence and the factors that have a negative influence.

Therefore, we set a positive factor estimation model and a negative factor estimation model for each of Japan and France.

2.2.1 Positive factor estimation model

The questionnaires conducted in the sister cities of Japan and France are all the same, although the format is different between the paper and the WEB. In this study, we prepare a question item that asks the current degree of sister city exchange (1-5), and set the sister city exchange degree (ASR_i) as the dependent variable. In order to clarify what factors have a positive effect or a negative effect on this sister city exchange smoothness (ASR_i), we analyze it with a multiple regression model by the least squares method.

Regarding whether or not the main goals set at the time of tie-up with the partner sister city were achieved in the Japan-France sister city exchange, we expect that the degree of achievement of that goal has a positive effect on the smoothness of the sister city exchange (ASR_i). Therefore, the following null hypothesis ($H1'$) and alternative hypothesis ($H1$) are set.

$H1'$: Achievement of the main goals set at the time of sister city tie-up does not affect the smoothness of sister city exchange

$H1$: Achievement of the main goals set at the time of sister city tie-up will affect the smoothness of sister city exchange

The degree of achievement of the main goal set at the time of tie-up with the partner sister city was set as AP_i , and seven control variables were set to control this AP_i . We set dummy variables as follows. If the current objectives of exchange with the partner sister city i were economic exchange (ECE_i), cultural exchange (CE_i), human exchange (HE_i), and environmental exchange (ENE_i), each dummy variable is 1, and otherwise 0. Moreover, we set PPS_i that sets 1 if the exchange from the partner sister city i is active, and 0 otherwise. PB_i is a dummy variable if the boss of the sister city i is active in the sister city exchange, and 0 otherwise. $ASPS_i$ is a dummy variable if the number of staff in charge of the sister city i to the other sister city is sufficient, and 0 otherwise.

Based on the above, we set the model for analyzing the positive effects in the Japanese sister cities is Model J+, and the model for analyzing the positive effects in the French sister cities is Model F+, as follows.

Model J+ :

$$ASR_i = \alpha_1 + \beta_1 AP_i + \beta_2 ECE_i + \beta_3 CE_i + \beta_4 HE_i + \beta_5 ENE_i + \beta_6 PPS_i + \beta_7 PB_i + \beta_8 ASPS_i + \varepsilon_i$$

Model F+ :

$$ASR_i = \alpha_2 + \beta_9 AP_i + \beta_{10} ECE_i + \beta_{11} CE_i + \beta_{12} HE_i + \beta_{13} ENE_i + \beta_{14} PPS_i + \beta_{15} PB_i + \beta_{16} ASPS_i + \varepsilon_i$$

Table 2-3 Variable definitions for Model J+ and Model F+

Variables	Variable definitions
ASR_i :	=Sister city i's degree of exchange with partner sister cities(Achivement of Sister-city Relation : 1-5)
AP_i :	=Achievement of purpose for sister city i(Achivement of Purpose : 1-5)
ECE_i :	=Dummy variable set to 1 if the current purpose of exchange of sister city i with the other sister city is economic exchange, otherwise 0.(Economic Exchange)
CE_i :	=Dummy variable set to 1 if the current purpose of exchange with the sister city of sister city i is cultural exchange, and 0 otherwise.(Culture Exchange)
HE_i :	=Dummy variable that is 1 if the current purpose of exchange with the sister city of sister city i is human resources exchange, and 0 otherwise.(Human Exchange)
ENE_i :	=Dummy variable set to 1 if the current purpose of exchange with the sister city of sister city i is environmental exchange, and 0 otherwise.(Environment Exchange)
PPS_i :	=Dummy variable set to 1 if the exchange from the partner sister city with respect to the sister city i is active, and 0 otherwise.(Positiveness of Parter Sister-city)
PB_i :	=Dummy variable set to 1 if the boss of sister city i is positive towards the other sister city, 0 otherwise(Positiveness of Boss)
$ASPS_i$:	=Dummy variable set to 1 if the number of staff in charge of sister city i for the partner sister city is sufficient, and 0 otherwise(Adequacy of Staff for Parter Sisteri-city)
α_1, α_2 :	=const
ε_i :	=error term

2.2.2 Negative factor estimation model

In the questionnaire conducted to the sister cities of Japan and France, the answer item “Cannot answer because it is not going well” was prepared in the question item “Currently, the reason why the exchange between sister cities of Japan and France is going well”. The choice of “Cannot answer because it is not going well” suggests that sister city exchanges may be stagnant. Therefore, we will clarify what factors have an effect, using the proxy variable NA_i , which indicates that sister city exchanges are stagnant, as the dependent variable. Similar to the positive factor estimation model, the analysis is performed using a multiple regression model using the least squares method.

In the Japan-France sister city exchange, if the sister city exchange with the partner sister city is smooth (ASR_i), it is expected to have a positive effect on the sister city exchange as well as the positive factor analysis. On the other hand, if the degree of smoothness of sister city exchange (ASR_i) is low, it is expected to have a negative impact on sister city exchange. Therefore, the following null hypothesis ($H2'$) and alternative hypothesis ($H2$) are set.

$H2'$: Sister city exchange smoothness does not affect the stagnation of sister city exchange

$H2$: Sister city exchange smoothness affects the stagnation of sister city exchange

In order to control the smoothness of sister city exchange (ASR_i), eight control variables were set in the analysis of negative factors in Japan, and nine control variables were set in the analysis of France.

We set dummy variables as follows. If sister city i has issues/problems in partner sister city exchange about “intermittent exchange due to change of chief” ($IRHR_i$), “partner sister city is reluctant” (IPS_i), “insufficient number of staff” (LS_i), “decreased motivation” (DI_i), “long distance” (FD_i), “small budget for French sister city exchange” (SBS_i), “others” (OR_i), each dummy variable is 1, and otherwise 0. Moreover, we set PS_i and BT_i that sets 1 if the Japanese sister city i answered each “poor security” or “bad transportation”, and 0 otherwise.

Based on the above, we set the model for analyzing the negative impacts of the Japanese sister cities is Model J-, and the model for analyzing the negative impacts of the French sister cities is Model F-, as follows.

Model J- :

$$NA_i = a_3 + \gamma_1 ASR_i + \gamma_2 IRHR_i + \gamma_3 IPS_i + \gamma_4 LS_i + \gamma_5 DI_i + \gamma_6 FD_i + \gamma_7 SBS_i + \gamma_8 OR_i \\ + \gamma_9 BT_i + \gamma_{10} PS_i + \varepsilon_i$$

Model F- :

$$NA_i = a_4 + \gamma_{11} ASR_i + \gamma_{12} IRHR_i + \gamma_{13} IPS_i + \gamma_{14} LS_i + \gamma_{15} DI_i + \gamma_{16} FD_i + \gamma_{17} SBS_i \\ + \gamma_{18} OR_i + \varepsilon_i$$

Table 2-4 Variable definitions for Model J- and Model F-

Variables	Variable definitions
ASR_i	=Sister city i's degree of exchange with partner sister cities 1-5(Achivement of Sister-city Relation)
$IRHR_i$	=Dummy variable that is 1 if sister city i responds as "intermittent exchange due to change of chief" as a problem in partner sister city exchange, otherwise 0(Intermittent Relationship)
IPS_i	=Dummy var able that is 1 if sister city i responds that "the partner sister city is reluctant" as a problem in partner sister city exchange, otherwise 0(Inactive of Parter Sister-city)
LS_i	=Dummy variable that is 1 if sister city i answers "insufficient number of staff" as a problem in partner sister city exchange, otherwise 0(Lack of Staff)
DI_i	=Dummy variable that is 1 if sister city i answers "decreased motivation" as an issue in partner sister city exchange, otherwise 0(Depression of Incentive)
FD_i	=Dummy variable that is 1 if sister city i answers "long distance" as a problem in partner sister city exchange, otherwise 0(Far Distance)
SBS_i	=Dummy variable that is 1 if sister city i responds that "the budget for sister city exchange in Japan is small" as an issue in partner sister city exchange, otherwise 0(Small Budget for)
OR_i	=Dummy variable that is 1 if sister city i answers "Other" as an issue in partner sister city exchange, otherwise 0(Other Reason)
BT_i	=Dummy variable that is 1 if sister city i answers "inconvenient transportation" as a problem in partner sister city exchange, otherwise 0(Bad Transportation)
PS_i	=Dummy variable that is 1 if sister city i answers "unsafe" as a problem in partner sister city exchange, otherwise 0(Poor Security)
α_3, α_4	=const
ε_i	=error term

2.3 Descriptive statistics and correlation matrix

The descriptive statistics and correlation coefficients of the variables of Model J+, Model F+, Model J-, and Model F- are as follows. From Table 2-6, there is no strong correlation between the explanatory variables, so there is no risk of multicollinearity by multiple regression analysis. On the other hand, from Table 2-8, a strong correlation was found between some explanatory variables (-0.65 between ASR and IRHR, -0.74 between ASR and IJS), so multicollinearity was found using VIF in multiple regression analysis.

2.4 Result of analysis

The analysis results of each model are shown in Table 2-9.

From the analysis results of Model J+, AP, CE, HE, and PB were statistically significant. In other words, the degree of achievement of the main goals set at the time of tie-up with the partner sister city is high, the current purpose of exchange is cultural exchange (CE_i) and human exchange (HE_i), and the boss's A high degree of positiveness towards sister city exchanges suggest that the current sister city exchanges are going well. Similarly, from the analysis results of Model F+, AP and APSP were statistically significant. In other words, if the degree of achievement of the main goals set at the time of tie-up with the partner sister city is high and the number of staff in charge of the partner sister city is sufficient, it suggests that the current sister city exchange is proceeding smoothly. From the above results, the null hypothesis H1' was rejected and the alternative hypothesis H1 was accepted.

Table 2-5 Descriptive statistics of Model J+ and Model F+

Panel A : Model J+ (N=51)									
	ASR	AP	ECE	CE	HE	ENE	PPS	PB	ASPS
Mean	3.53	3.53	0.27	0.63	0.45	0.06	0.27	0.29	0.02
Sd	1.42	1.06	0.45	0.49	0.50	0.24	0.45	0.46	0.14
Min	1	1	0	0	0	0	0	0	0
Max	5	5	1	1	1	1	1	1	1
Panel B : Model F+ (N=27)									
	ASR	AP	ECE	CE	HE	ENE	PPS	PB	ASPS
Mean	4.33	4.26	0.33	0.81	0.52	0.22	0.11	0.44	0.07
Sd	1.11	0.98	0.48	0.40	0.51	0.42	0.32	0.51	0.27
Min	1	2	0	0	0	0	0	0	0
Max	5	5	1	1	1	1	1	1	1

Table 2-6 Correlation matrix of Model J+ and Model F+

Panel A : Model J+ (N=51)									
	AP	ECE	CE	HE	ENE	PPS	PB	ASPS	
AP	1.00								
ECE	0.02	1.00							
CE	0.19	0.20	1.00						
HE	0.18	0.15	0.21	1.00					
ENE	0.11	0.22	0.19	-0.06	1.00				
PPS	0.23	0.02	0.38	0.06	0.03	1.00			
PB	0.37	0.18	0.32	0.02	0.20	0.18	1.00		
ASPS	0.06	-0.09	0.11	0.16	-0.04	0.23	0.22	1.00	
Panel B : Model F+ (N=27)									
AP	1.00								
ECE	0.38	1.00							
CE	0.42	0.13	1.00						
HE	0.18	0.05	-0.08	1.00					
ENE	0.32	0.19	0.25	-0.20	1.00				
PPS	0.27	0.00	0.17	-0.13	0.09	1.00			
PB	0.38	0.16	0.43	-0.03	0.42	-0.32	1.00		
ASPS	-0.08	0.10	0.13	-0.01	-0.15	-0.10	-0.25	1.00	

In addition, from the analysis results of Model J-, ASR was statistically negative and DI was statistically significant. In other words, it suggests that the current sister city exchanges are not going well, and that low motivation of the partner sister cities leads to a slump in sister city exchanges. Similarly, from the analysis results of Model F-, ASR was statistically negative and LS was statistically positive. In other words, it suggests that the current sister city exchange is not going well, and that the shortage of staff has led to a slump in sister city exchange. From the above results, the null hypothesis H2' was rejected and the

alternative hypothesis H2 was accepted.

Table 2-7 Descriptive statistics of Model J- and Model F-

Panel A : Model J- (N=51)											
	NA	ASR	IRHR	IJS	LS	DI	FD	SBS	OR	BT	PS
Mean	0.25	3.53	0.18	0.04	0.10	0.02	0.45	0.27	0.27	0.06	0.06
Sd	0.44	1.42	0.39	0.20	0.30	0.14	0.50	0.45	0.45	0.24	0.24
Min	0	1	0	0	0	0	0	0	0	0	0
Max	1	5	1	1	1	1	1	1	1	1	1
Panel B : Model F- (N=27)											
Mean	0.15	4.33	0.11	0.07	0.15	0.11	0.59	0.37	0.30		
Sd	0.36	1.11	0.32	0.27	0.36	0.32	0.50	0.49	0.47		
Min	0	1	0	0	0	0	0	0	0		
Max	1	5	1	1	1	1	1	1	1		

Table 2-8 Correlation matrix of Model J- and Model F-

Panel A : Model J- (N=51)											
	ASR	IRHR	IJS	LS	DI	FD	SBS	OR	BT	PS	
ASR	1.00										
IRHR	-0.36	1.00									
IJS	-0.22	-0.09	1.00								
LS	0.11	0.19	-0.07	1.00							
DI	-0.25	0.31	-0.03	-0.05	1.00						
FD	-0.03	-0.01	0.02	0.10	-0.13	1.00					
SBS	0.21	-0.05	0.10	-0.06	-0.09	0.15	1.00				
OR	-0.17	-0.17	-0.12	-0.20	0.23	0.15	-0.08	1.00			
BT	0.20	0.10	-0.05	-0.08	-0.04	0.11	0.22	-0.15	1.00		
PS	-0.15	-0.12	-0.05	-0.08	-0.04	-0.06	-0.15	0.03	-0.06	1.00	
Panel B : Model F- (N=27)											
ASR	1.00										
IRHR	-0.65	1.00									
IJS	-0.74	0.35	1.00								
LS	-0.22	0.18	-0.12	1.00							
DI	-0.32	-0.13	0.35	0.18	1.00						
FD	0.05	-0.43	-0.05	-0.08	0.05	1.00					
SBS	-0.09	-0.03	0.08	0.33	0.46	0.01	1.00				
OR	0.17	-0.23	-0.18	-0.04	-0.23	-0.12	-0.33	1.00			

Table 2-9 The analysis results of each model

	Model J+			Model F+			Model J-			Model F-		
	β	t-value	VIF	β	t-value	VIF	β	t-value	VIF	β	t-value	VIF
const	0.361	0.767		-0.162	-0.295		1.154	6.727 ***		-0.286	-3.852 ***	
AP	0.581	4.314 ***	1.26	0.945	6.074 ***	1.95						
ECE	0.342	1.127	1.15	0.003	0.012	1.22						
CE	0.743	2.416 **	1.38	-0.178	-0.496	1.68						
HE	0.561	2.050 **	1.16	0.031	0.131	1.20						
ENE	-0.081	-0.143	1.12	-0.099	-0.326	1.39						
PPS	0.459	1.435	1.27	0.307	0.665	1.82						
ASPS	-0.075	-0.076	1.16	1.213	2.558 **	1.33						
PB	0.626	1.917 *	1.39	0.375	1.095	2.50						
ASR							-0.239	-6.170 ***	1.63	-0.246	-4.353 ***	6.3
IRHR							0.016	0.110	1.6	-0.089	-0.550	4.3
IJS							-0.083	-0.344	1.2	0.143	0.856	3.2
LS							0.070	0.451	1.18	0.208	2.453 **	1.5
DI							0.033	0.096 *	1.27	0.146	1.307	2
FD							-0.094	-1.026	1.14	-0.053	-0.794	1.8
SBS							-0.094	-0.919	1.15	0.070	1.109	1.5
OR							0.081	0.410	1.35	-0.060	-0.932	1.5
BT							-0.165	-0.867	1.18			
PS							0.036	0.321	1.1			
N	51			27			51			27		
Adj.R ²	0.595			0.746			0.523			0.876		
F-value	10.188 ***			8.925 ***			6.473 ***			24.004 ***		

The asterisks *, **, *** indicate that the coefficients are statistically different from zero at the 10, 5, and 1 percent level, respectively.

3. Summary and limits

At the time of the sister city tie-up boom 60 years ago, the peaceful significance of the sister city tie-up was strong, and the threshold for overseas travel was high geographically. However, in this study, we were able to partially show that the meaning has changed in the global era.

Specifically, while Japan-France sister city exchanges tended to stagnate as a whole, we were able to observe a significant decrease in economic and cultural exchanges and the occurrence of tourism exchanges as the main purpose of the alliance in Japan-France sister cities. It suggested that the economic alliances of sister cities may not have been as successful for some reason. On the other hand, it has been confirmed that the concept of environmental exchange has occurred with the changing times. In addition, art, sports, and exchanges between schools were cited as factors for the increasing trend in “others” in France.

Long-distance was the most cited issue and problem in France’s sister city exchange. Apart from the anniversary event, the content of sister city exchanges tended to be limited and unchanging because the travel cost in the annual sister city exchange budget had to be high. Furthermore, we pointed out that the chief’s attitude toward sister city exchanges may adversely affect the situation of exchanges, resulting in intermittent sister city exchanges. Regarding the requests from the sister cities of Japan to the Japanese government and local governments, there were many requests regarding budget and human resources, suggesting that the local governments may not want the active involvement of the government regarding exchanges after the sister cities.

Furthermore, when a chi-square test was conducted to verify the differences between the two countries regarding issues and problems in sister city exchanges, and the differences between the two countries regarding requests to their own governments and local governments, there was no significant difference in the former, but there was a significant difference in the latter. There is no difference in issues and problems in sister city exchange between Japan and France, but there are differences in requests to their own governments and local governments between Japan and France. In other words, it is suggested that while the sister cities of Japan and France have similar issues and problems, there may be a certain degree of passion for their own governments and local governments.

In this study, in order to clarify the factors behind the active sister city exchanges in the Japan-France sister city relationship, we set up an estimation model for positive factors and an estimation model for negative factors for each of Japan and France. As a result of the analysis, regarding the positive factors in Japan, the degree of achievement of the main goals set at the time of tie-up with the partner sister city is high, if the current purpose of exchange is cultural exchange and human exchange, and the sister city exchange of the boss.

As a result of the analysis, regarding the positive factors in Japan, the degree of achievement of the main goal with the partner sister city is high, the current purpose of exchange is cultural exchange and human exchange, and the boss is highly active in sister city exchange, these lead to the current sister city exchange is going well. Similarly, we suggested that the current sister city exchange is going well, if the fact that the main goals set at the time of tie-up with the partner sister city are highly achieved, and if the number of staff in charge of the partner sister city is substantial, regarding the positive factors in France.

On the other hand, regarding the negative factors in Japan, it was suggested that the current sister city exchanges are not going well, and that low motivation of the partner sister cities leads to a slump in sister

city exchanges. Similarly, regarding the negative factors in France, it was suggested that the current sister city exchanges are not going well, and that the shortage of staff has led to a slump in sister city exchanges.

From the above, it can be seen that the Japan-France sister city exchange is geographically distant, and that the budget and personnel for the sister city exchange are tight. However, it cannot be said that this study has truly clarified the background or cause of maintaining the exchange for a long period of time while enduring such adversity. This point needs to be verified again by methods such as interviews.

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