Funding tourism promotion and disaster management through hometown tax donation program:

Evaluation of the expenditures by local governments

Toshihiko Shimauchi (Advanced Course, Komatsu College, shimauchi@komatsu-c.ac.jp)

Hidetaka Nambo (Graduate school of Natural Science & Technology, Kanazawa University, nambo@blitz.ec.t.kanazawa-u.ac.jp)

Haruhiko Kimura (Faculty of Production Systems Engineering and Sciences, Komatsu University, haruhiko.kimura@komatsu-u.ac.jp)

Abstract

Since its start in 2008, Furusato Nozei Seido, or hometown tax donation program, has expanded its size. Many existing papers focus on the program's history, mechanism and "unhealthy" competitions among local governments. Little attention has been given to how the donations are used. In this study, the data for the program in 2018 were used to calculate policy project priority scores of local governments in allocating newly funded money. The results showed that the most prioritized project was child care, followed by education. Tourism was in the fourth place. The priority scores were also used to calculate correlations with official tourism and natural disaster data. The tourism scores and tourism data showed weak negative correlations, suggesting that local governments with lesser tourists used the fund from the program to promote tourism. The resilience scores and disaster damage data showed positive moderate correlations, suggesting that local governments with large damage utilized the fund from the program for recovery and future prevention of the disaster. Hometown tax donation program is a part of regional revitalization strategy, which set job creation as one of the most important objectives. The local governments are advised to use the fund more on tourism, one of the most promising growing industries.

Keywords

hometown tax donation program, tourism, disaster prevention, disaster recovery, local public finance

1. Introduction

Hometown tax donation program was introduced in 2008 to encourage people living in urban areas to donate money to their hometown or other local governments in rural areas with income and residential tax deduction incentives [Kato, 2010]. Until 2014 with exception in 2011, the number of participants remained low, ranging from 3.3 million to 13.4 million. Since 2015, the number of participants and the amount of donations have drastically increased to reach 2.9 million and 348 billion JPY respectively (Figure 1).

One of the reasons for this dramatic increase is the publication of one report by Japan Policy Council, a private think tank. The report was titled "city at risk of disappearing". It estimated that 896 municipalities would be at risk of disappearing by 2040, with 523 of them would be at higher risk because of their small population (less than 10,000). The report advised to take a double-track approach toward falling birthrate and excessive centralization of Tokyo metropolitan area [Japan Policy Coun-
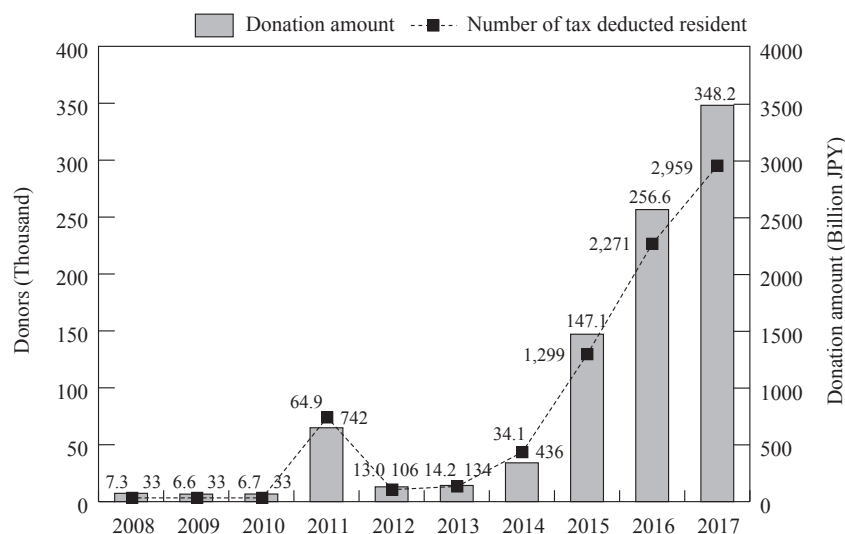

Figure 1: Time series data of Hometown tax donation program (national)
Source: MIC.

cil, 2014].

In line with this advice, the central government established "Long-term vision" and "Comprehensive strategy" for the regional revitalization in December 2014 [Nakanishi, 2015]. Home tax donation program has been incorporated in the strategy. By expanding (doubling the tax-deductible amount) and streamlining (one stop tax exemption service) the program, the amount and participants increased dramatically [Sato, 2018].

This study used the statistical data from the Ministry of Internal Affairs and Communications (MIC) published in 2018 to investigate how the local governments prioritize projects to invest the fund acquired through the program.

Before moving to the next chapter, definition of terms is in order. Local government includes both prefecture and municipalities. Municipality includes cities, towns, and villages.

2. Existing studies

Most of the existing studies on hometown tax donation program summarize the history and the mechanism of the program or analyse in detail activities of particular local governments [Noda et al., 2015; Suzuki et al., 2016].

Also, there are several studies about the excessive competition among local governments [Sato, 2018; Suzuki and Hashimoto, 2017]. Streamlining and expansion of the program have led local governments to compete fiercely to attract donations from taxpayers. In order to attract more donation, many local governments give a gift in return to each donor according to the amount of the donation. These gifts are getting luxurious and the central government has started to regulate not only the value but also the origins of the gifts [Sato, 2018].

Another line of studies put focus on marketing approach and positively evaluate the gifts in return [Hoda, 2015]. The gifts are deemed as effective tools to attract attention, raise interest, stimulate desire and finally to induce action from potential donors (AIDA theory).

There are, however, little attention on the output flow of the program, that is, how the local governments spend the fund collected from the program. Matsuoka [2017] analyses the impact of the program on educational expenditure by municipalities and finds a positive effect of the program in acquiring new resources, especially for lesser funded municipalities, leading to the improvement in bridging regional disparities.

In this study, the focus of attention is similar to Matsuoka and the outflow of the donation is the main focus of analysis. Specifically, expenditures on tourism promotion and disaster prevention are analysed in detail by using statistical method.

3. Method
3.1 Data

Since 2015, MIC has been conducting annual survey on hometown tax donation program to ascertain local governments' activities regarding the program. In this study, the most recent survey data conducted and published in 2018 were used. The total number of participating local governments were 1788.

Table 1: The number of local governments

Total	Prefecture	City*	Town	Village
1788	47	814	744	183

Note: * 23 special wards in Tokyo included.

Table 1 shows the breakdown of the participating governments according to administrative divisions.

The survey is composed of two parts: one for the amount of donation received, and the other for the amount of tax deduction applied to their residents. In this study, the donation survey was used, which had five sections. In section 4, each local government was asked to answer three main policy projects conducted in 2017 with descending order of the amount of expenditure through the donations received. These answers were used to calculate policy project priority scores. Table 2 shows the policy projects listed in the survey.

Table 2: The number of answers for policy projects

Policy project	Nm. of Answers		
	1st	2nd	3rd
1 Town management & Civic action	115	99	89
2 Sports & Culture promotion	71	82	112
3 Health, Medicine & Welfare	148	203	226
4 Environment	74	140	149
5 Education	306	232	192
6 Child care	365	205	126
7 Revitalization of region & industry	128	186	171
8 Promotion of tourism & immigration	124	134	96
9 Safety & disaster prevention	39	48	63
10 Disaster assistance & recovery	22	17	3
11 Other	232	83	68

3.2 Scoring

The projects with first to third priorities were given scores according to following rules:

- first priority = 3 points
- second priority = 2 points
- third priority = 1 point

The scores were aggregated and averaged at the prefecture level ($n = 47$). The formula for calculating project score is as follows:

For each prefecture,
$$Pm \sum_{i=1}^{n} (1st \times 3 + 2nd \times 2 + 3rd \times 1) \text{ / total response}$$

where

$\underline{P}$ = project, m = 1–11 and
n = number of governments in each prefecture

"Other" category contained numerous specific projects, such as road management, world heritage promotion, and cancer screening, which should be included in the survey list. This category also contained amorphous answers; 191 answers out of 383 were discretions of administrative chiefs or the incorporation into general accounts. Because of these reasons, this category was aggregated and averaged, but not analyzed.

4. Results

4.1 Overview

Table 3 shows descriptive statistics for aggregated average scores at the prefecture level.

Table 3: Descriptive statistics for aggregated average scores ($n = 47$)

Projects*	Mean	SD	Median	1Q	3Q
1	14.27	5.92	12.94	10.10	18.13
2	11.66	7.04	10.24	7.10	14.25
3	24.39	7.65	25.33	19.08	29.48
4	14.97	6.62	15.25	10.32	19.29
5	36.96	9.19	37.58	31.25	42.50
6	37.56	8.61	38.00	32.33	43.85
7	21.18	9.82	17.98	14.47	27.30
8	16.81	7.45	15.79	11.35	20.49
9	6.27	5.55	5.41	2.18	8.46
10	2.40	4.44	0.00	0.00	3.23
11	21.19	9.34	20.00	14.44	26.30

Note: * the numbers correspond to those in Table 2.

4.2 Detailed scores for each prefecture

Table 4 shows detailed scores for each prefecture. Each row consists of the name of prefecture, the number of local governments, response rate (response / the number of governments × 3), scores for each policy project, and four aggregated indexes. Health index is composed of scores of policy projects from 1 to 4; Education index is composed of scores of projects 5 and 6; Revitalization index is composed of projects 7 and 8; and Resilience [National Resilience Promotion Office, n.d.] index is composed of projects 9 and 10.

4.3 Tourism promotion

Table 5 shows the correlation matrix of tourism project scores in Table 4 and tourism statistics published by Japan Tourism Agency. Since the survey was conducted in 2018 with questions about the projects done in 2017, the assumption is made that each municipality used the fund from the program based on the performance in the previous year. Hence, the tourism statistics of 2016 are used for the analysis.

4.4 Resilience projects

Table 6 shows the correlation matrix of resilience score and disaster damage data from 2015 to 2017 published by Fire and Disaster Management Service [2016; 2017; 2019]. The years are selected according to the same reason as described in the preceding section.

5. Discussion

5.1 Overview

The top three policy projects are child care, education and health. These projects are usually supported by most of the voters. They also contribute to falling birth rate, one of the main issues advocated in the report by Japan Policy Council as shown in the introduction. However, comprehensive strategy for regional revitalization put job creation its most pressing issues [Cabinet Secretariat, n.d.]. Low project scores for tourism and regional revitalization mean local governments have different priority compared to the national government. They tend to use the fund from the program more on projects which are easier for the voters to comprehend the results.

5.2 Tourism promotion

The scores and the tourism data showed a weak negative correlation. The result suggests that local governments already accepting many tourists used the fund from the program in projects other than tourism. On the other hand, those with less tourists used the fund for tourism promotion.

The tourism is one of the growing economic sectors in the world [World Travel and Tourism Council, 2018]. The industry also contributes significantly to the growth of Japanese economy [Japan Travel Agency, 2018]. Its contribution share to the nominal economic growth from 2012 to 2016 was 4.5%, double the share of ICT services (2.3 %).

To convince younger generation to stay in local communities, creating the opportunity to have decent work is one of the policy objectives in regional revitalization [Cabinet Secretariat, n.d.].

The low scores in Table 4 and weak correlations in Table 5 suggest the local governments did not invest sufficient amount of fund from the program into this promising industry. They are advised to use more fund from the program for the promotion of tourism in order to create job in the communities which younger resident want to land.

5.3 National Resilience

Casualties and economic loss have moderate correlations with resilience index. These results indicate that local authorities which have suffered from the natural disasters in preceding years tend to use the fund from the program for disaster prevention and recovery measures.

Kumamoto is a typical case. In 2016, Kumamoto was hit by several large-scale earthquakes, claiming 261 lives [Kumamoto Prefecture, 2018]. The earthquakes also heavily damaged Kumamoto Castle [Kamura, 2018], one of the key tourist destinations in the prefecture. The large-scale damages lead to increases in disaster recovery expenditure by 45 municipalities in the prefecture from 5.6 million JPY in FY 2015 to 38.3 million JPY in FY 2016 [Kumamoto Prefecture, 2017].

Table 4: Policy scores and index for each prefecture

Prefecture	Governments	% response	1	2	3	4	5	6	7	8	9	10	11	Health	Education	Revitalization	Resilience
Hokkaido	180	85.0 %	20.48	10.24	23.97	13.51	33.99	31.59	32.46	20.04	5.23	1.31	15.69	68.19	65.58	52.51	6.54
Aomori	41	71.5 %	13.64	2.27	29.55	5.68	31.82	39.77	38.64	27.27	1.14	0.00	26.14	51.14	71.59	65.91	1.14
Iwate	34	90.2 %	10.87	6.52	19.57	14.13	41.30	36.96	27.17	10.87	6.52	8.70	21.74	51.09	78.26	38.04	15.22
Miyagi	36	78.7 %	12.94	10.59	14.12	18.82	35.29	45.88	22.35	16.47	2.35	12.94	14.12	56.47	81.18	38.82	15.29
Akita	26	85.9 %	22.39	5.97	26.87	16.42	37.31	31.34	16.42	23.88	0.00	8.96	19.40	71.64	68.66	40.30	8.96
Yamagata	36	99.1 %	12.15	2.80	26.17	9.35	28.04	54.21	31.78	24.30	4.67	0.00	7.48	50.47	82.24	56.07	4.67
Fukushima	60	64.4 %	12.93	12.07	15.52	10.34	44.83	33.62	29.31	14.66	5.17	14.66	22.41	50.86	78.45	43.97	19.83
Ibaraki	45	87.4 %	6.78	13.56	31.36	15.25	44.07	30.51	12.71	13.56	8.47	1.69	29.66	66.95	74.58	26.27	10.17
Tochigi	26	83.3 %	15.38	20.00	30.77	16.92	47.69	32.31	18.46	10.77	3.08	0.00	10.77	83.08	80.00	29.23	3.08
Gunma	36	82.4 %	11.24	11.24	25.84	24.72	31.46	21.35	17.98	24.72	8.99	0.00	23.60	73.03	52.81	42.70	8.99
Saitama	64	80.2 %	13.64	14.94	29.22	21.43	44.16	41.56	11.69	8.44	8.44	1.30	12.34	79.22	85.71	20.13	9.74
Chiba	55	73.9 %	17.21	8.20	31.97	10.66	27.87	38.52	10.66	14.75	4.92	0.00	40.16	68.03	66.39	25.41	4.92
Tokyo	63	58.7 %	17.12	26.13	35.14	19.82	32.43	27.93	9.91	5.41	5.41	0.00	37.84	98.20	60.36	15.32	5.41
Kanagawa	34	87.3 %	15.73	16.85	32.58	17.98	16.85	34.83	13.48	20.22	3.37	0.00	33.71	83.15	51.69	33.71	3.37
Niigata	31	92.5 %	11.63	8.14	18.60	10.47	33.72	38.37	19.77	30.23	6.98	3.49	25.58	48.84	72.09	50.00	10.47
Toyama	16	95.8 %	17.39	6.52	21.74	17.39	23.91	45.65	39.13	17.39	0.00	0.00	13.04	63.04	69.57	56.52	0.00
Ishikawa	20	96.7 %	13.79	12.07	27.59	18.97	39.66	46.55	17.24	6.90	5.17	0.00	12.07	72.41	86.21	24.14	5.17
Fukui	18	81.5 %	36.36	9.09	11.36	0.00	40.91	36.36	59.09	2.27	11.36	2.27	4.55	56.82	77.27	61.36	13.64
Yamanashi	28	86.9 %	8.22	6.85	15.07	27.40	41.10	43.84	12.33	12.33	5.48	0.00	28.77	57.53	84.93	24.66	5.48
Nagano	78	78.2 %	10.93	17.49	23.50	23.50	30.60	37.70	16.94	20.77	6.56	0.00	19.67	75.41	68.31	37.70	6.56
Gifu	43	91.5 %	22.88	6.78	25.42	12.71	30.51	40.68	19.49	8.47	14.41	3.39	22.03	67.80	71.19	27.97	17.80
Shizuoka	36	96.3 %	10.58	4.81	21.15	19.23	27.88	41.35	14.42	25.96	12.50	0.00	25.96	55.77	69.23	40.38	12.50
Aichi	55	90.9 %	10.67	8.67	28.67	10.00	42.00	45.33	17.33	8.67	9.33	2.00	20.67	58.00	87.33	26.00	11.33
Mie	30	75.6 %	8.82	10.29	32.35	10.29	32.35	32.35	23.53	14.71	14.71	0.00	26.47	61.76	64.71	38.24	14.71
Shiga	20	95.0 %	19.30	15.79	29.82	22.81	21.05	43.86	15.79	19.30	1.75	0.00	15.79	87.72	64.91	35.09	1.75
Kyoto	27	61.7 %	8.00	40.00	18.00	8.00	52.00	38.00	14.00	16.00	2.00	4.00	26.00	74.00	90.00	30.00	6.00
Osaka	44	77.3 %	14.71	5.88	14.71	7.84	41.18	47.06	13.73	18.63	15.69	1.96	29.41	43.14	88.24	32.35	17.65
Hyogo	42	96.8 %	13.93	13.11	28.69	7.38	38.52	47.54	14.75	13.93	5.74	3.28	14.75	63.11	86.07	28.69	9.02
Nara	40	53.3 %	10.94	15.63	43.75	9.38	18.75	29.69	9.38	29.69	7.81	0.00	42.19	79.69	48.44	39.06	7.81
Wakayama	31	72.0 %	8.96	17.91	13.43	19.40	43.28	32.84	14.93	14.93	23.88	0.00	17.91	59.70	76.12	29.85	23.88
Tottori	20	86.7 %	9.62	9.62	1.92	26.92	42.31	46.15	30.77	15.38	5.77	3.85	17.31	48.08	88.46	46.15	9.62
Shimane	20	85.0 %	7.84	7.84	29.41	17.65	41.18	27.45	23.53	31.37	1.96	0.00	11.76	62.75	68.63	54.90	1.96
Oakayama	28	81.0 %	19.12	7.35	22.06	13.24	32.35	48.53	30.88	8.82	2.94	0.00	22.06	61.76	80.88	39.71	2.94
Hiroshima	24	83.3 %	20.00	11.67	23.33	1.67	48.33	38.33	21.67	20.00	8.33	0.00	15.00	56.67	86.67	41.67	8.33
Yamaguchi	20	88.3 %	18.87	13.21	24.53	20.75	45.28	39.62	9.43	16.98	5.66	0.00	16.98	77.36	84.91	26.42	5.66
Tokushima	25	69.3 %	23.08	13.46	17.31	5.77	40.38	15.38	15.38	19.23	23.08	0.00	34.62	59.62	55.77	34.62	23.08
Kagawa	18	90.7%	6.12	30.61	14.29	18.37	46.94	57.14	8.16	4.08	0.00	0.00	22.45	69.39	104.08	12.24	0.00
Ehime	21	100.0 %	9.52	15.87	31.75	19.05	38.10	33.33	25.40	14.29	9.52	3.17	6.35	76.19	71.43	39.68	12.70
Kochi	35	78.1 %	12.20	6.10	21.95	29.27	42.68	24.39	28.05	19.51	6.10	0.00	19.51	69.51	67.07	47.56	6.10
Fukuoka	61	81.4 %	15.44	9.40	17.45	15.44	37.58	45.64	15.44	11.41	0.00	4.03	36.91	57.72	83.22	26.85	4.03
Saga	21	98.4 %	19.35	9.68	37.10	19.35	32.26	41.94	14.52	11.29	0.00	0.00	16.13	85.48	74.19	25.81	0.00
Nagasaki	22	87.9 %	12.07	5.17	27.59	8.62	31.03	36.21	29.31	24.14	0.00	0.00	29.31	53.45	67.24	53.45	0.00
Kumamoto	46	60.1 %	8.43	2.41	25.30	10.84	30.12	31.33	24.10	10.84	12.05	19.28	36.14	46.99	61.45	34.94	31.33
Oita	19	84.2 %	22.92	12.50	22.92	10.42	54.17	18.75	25.00	25.00	0.00	12.50	10.42	68.75	72.92	50.00	12.50
Miyazaki	27	93.8 %	7.89	15.79	27.63	11.84	31.58	43.42	34.21	15.79	1.32	0.00	13.16	63.16	75.00	50.00	1.32
Kagoshima	44	85.6 %	22.12	8.85	30.09	13.27	25.66	35.40	27.43	34.51	2.65	0.00	7.96	74.34	61.06	61.95	2.65
Okinawa	42	59.5 %	6.67	8.00	25.33	21.33	62.67	34.67	17.33	12.00	4.00	0.00	20.00	61.33	97.33	29.33	4.00

Note: Numbers in gray cell exceed national average.

Table 5: Correlation matrix: tourism scores and tourism data

	1	2	3	4	5	6	7	8	9
1 Tourism	–	−.207	−.358	−.273	−.217	−.238	−.349	−.294	−.280
2 Stay JPN		–	.840	.907	.646	.961	.843	.830	.609
3 Day JPN		**	–	.900	.786	.917	.992	.970	.779
4 Stay INT		**	**	–	.738	.926	.900	.921	.678
5 Day INT		**	**	**	–	.710	.818	.769	.929
6 Stay TA JPN		**	**	**	**	–	.933	.932	.709
7 Day TA JPN		**	**	**	**	**	–	.980	.824
8 Stay TA INT		**	**	**	**	**	**	–	.766
9 Day TA INT		**	**	**	**	**	**	**	–

Notes: ** $p < .01$, * $p < .05$. JPN; Japanese tourists, INT; International tourists, Stay; Stay-over trip, DAY; Day trip, TA; Total Amount.

Table 6: Correlation matrix: resilience index and natural disaster damages

	1	2	3	4	5	6	7	8	9
1 Resilience	–	.462	−.018	.450	.455	.491	.498	.487	.481
2 death toll	**	–	.182	.975	.974	.969	.955	.958	.990
3 missing			–	.073	.093	.006	−.004	−.037	.170
4 Injuries Serious	**	**		–	.987	.953	.936	.951	.960
5 Injuries Minor	**	**		**	–	.956	.943	.955	.968
6 Resident TD	**	**		**	**	–	.987	.992	.979
7 Resident HD	**	**		**	**	**	–	.979	.968
8 Resident PD	**	**		**	**	**	**	–	.970
9 Economic loss	**	**		**	**	**	**	**	–

Notes: ** $p < .01$, * $p < .05$. TD; Totally Damaged, HD; Half Damaged, PD; Partially Damaged.

Table 7 shows the amount and the number of donations to the local governments in Kumamoto. The earthquakes in August 2016 led to a sharp increase in the amount and the number of the donation. The rates of increase from the preceding year were 582.7 % and 441.8 % respectively. Those of the national total were 72.1 % and 75.1 % respectively. These results suggest that many people were willing to contribute to the recovery of Kumamoto, showing their sincere sympathy to the people in the prefecture. The fund from the home tax donation program functioned as a valuable supplementary revenue for the municipalities faced with an unprecedented disaster.

The resilience also contributes to the promotion of the tourism to Japan. Because of its geographical features, Japan experience various types of natural disasters every year. There are 110 active volcanos in Japan, occupying 7.1 % in the world. Be-

tween 2003 and 2013, Japan experienced 326 earthquakes with Richter magnitude scale of 6 or more, occupying 18.5 %. Three fourth of the land is covered by mountain areas, making flow of many rivers fast [Water and Disaster Management Bureau, 2018].

As such, for many Japanese, natural disasters are not special events. But for international tourists, depending on their native countries, even a small-scale disaster is rare and perceived danger or unsafe facilities can prevent potential inbound tourists to change the destination toward more safe and secure countries [Ichinosawa, 2006; Kozak et al., 2007; Wang, 2009]. Disaster planning is necessary not only for local residents but also for international tourists [Murphy and Bayley, 1989]. Well planned disaster prevention can alleviate fears for international tourists, which in turn bring economic gains to local governments. Us-

Table 7: Hometown tax donation to Kumamoto governments (1 prefecture, 45 municipalities)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Amount	67.1	103.6	93.4	98.0	120.2	132.7	250.5	1,178.6	8,046.6	5,384.5
Number	1.2	1.4	1.3	1.2	1.7	3.0	11.3	50.5	273.7	226.0
Average	54.4	76.3	69.3	82.6	72.8	44.9	22.3	23.3	29.4	23.8

Notes: Unit; Amount (million JPY), Number (thousand people), Average (thousand JPY).
Source: MIC [2018].

ing the fund from hometown tax donation program for improving the resilience is practical and wise investment.

6. Conclusion and future direction

As existing studies suggest, there are several problems about the hometown tax donation program, especially on gifts in return competitions. However, the program does not receive sufficient analysis on its output. This study used three official statistics to analyse how the local governments used the fund from the program.

The top three policy project areas in which the local governments used more fund from the program were child care, education and health. The program is a part of the comprehensive strategy for regional revitalization. One of the main objectives is job creation. Intensive allocation in those three projects is not conducive to achieving job creation.

The correlation between the policy priority scores of tourism promotion and actual tourism data were negative weak, with -0.358 between the number of domestic day-trip tourists. Correlation with international tourists were much weaker, with −0.273. In order to prevent further concentration in Tokyo area, local governments need to provide decent work opportunity, especially to younger generation. The tourism is one of the most promising industries for this purpose. More fund from the program should be invested in tourism projects.

The correlation between the resilience index and actual natural disaster data were positive moderate, with 0.462 between death toll. For local governments faced with an unprecedented disaster like Kumamoto, the fund from the program is powerful supplementary source for the recovery and the future prevention. The resilience leads indirectly to the promotion of the tourism.

The study is based on one-year data for hometown tax donation program. In order to investigate how the fund from the program are utilized in local governments, the range of the study years should be expanded. Specifically, to understand the impact of the fund on tourism outcome, the project scores in year X should be correlated to the change of the tourism data between year X and year X + 1. This expansion would clarify a causal relation between home tax donation program and tourism related expenditures by local governments, which could open a new horizon for future tourism research.

Also, natural disasters have huge negative impact on tourism industry. In this study, Kumamoto earthquakes were analyzed. Expanding the scope to encompass other large-scale natural disasters could be one of the promising fields to establish the effectiveness of hometown tax donation program.

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