Do Payment Methods, Forms of Travel, and Tourism Market Potential Contribute to Regional Development in Japan?:

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Background

- Foreign travelers to Japan have been expanding

  after the VJC set by the Japanese government in 2003

  *VJC: Visit Japan Campaign
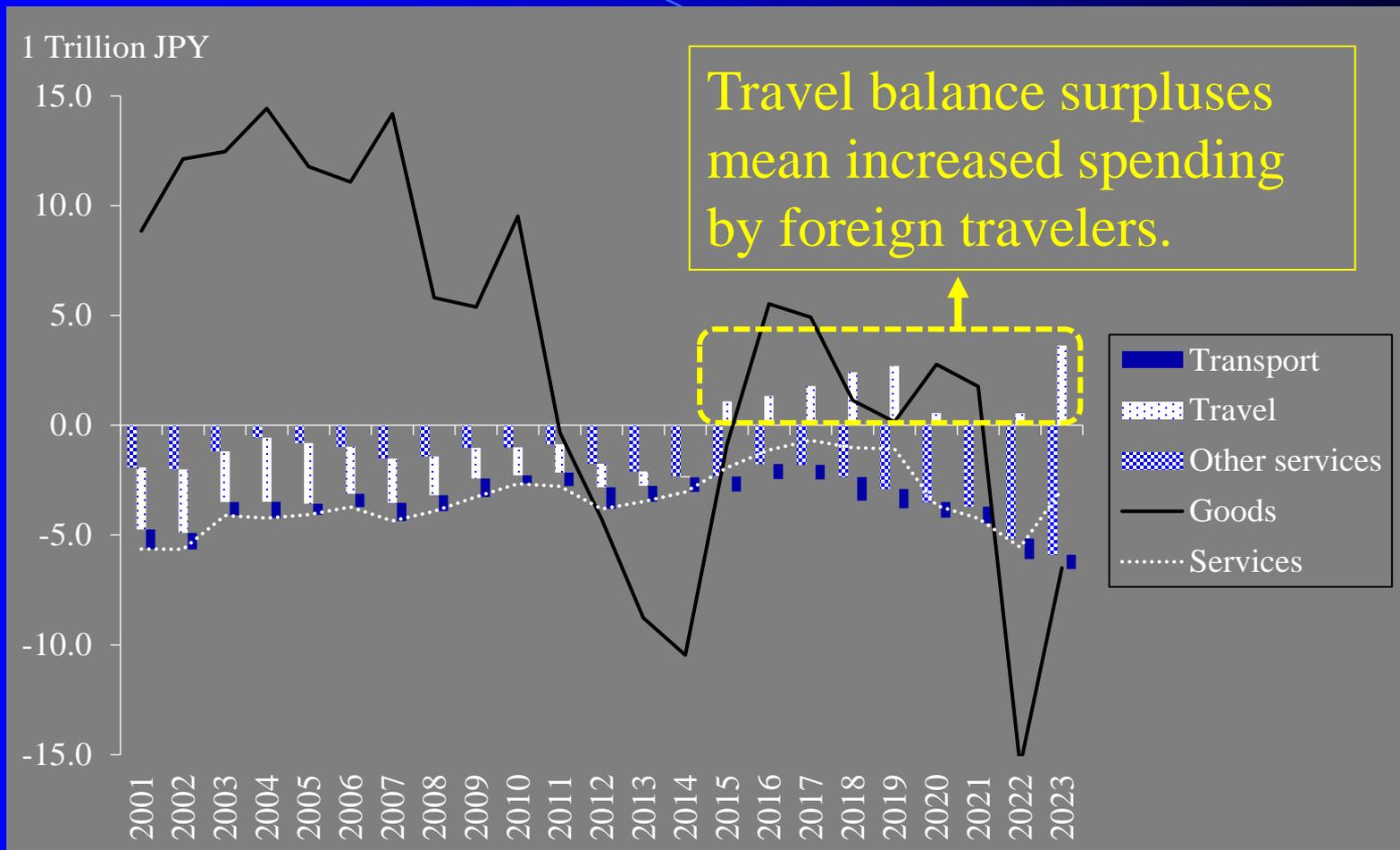
Number of foreign travelers

Year	million
2013	10.36
2014	13.41
2015	19.74
2016	24.04
2017	28.69
2018	31.18
2019	31.88

- Attracting foreign travelers throughout Japan

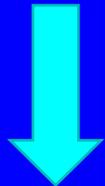|	
2020	4.12
2021	0.25
2022	3.83
2023	25.07
2024	36.87

Balance of Trade and Services in Japan

Source: http://www.mof.go.jp/international_policy/reference/balance_of_payments/bpnet.htm

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Tourism Promotion and Balance of Services

- Policy objective:

⇒By attracting inbound travelers to each region,

they can increase lodging and consumption

in their own region.

- Reduction of transportation balance deficit;
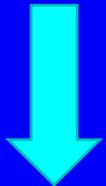
⇒Increase in payment for transportation

by foreign visitors coming to Japan

- Reduction of the travel balance deficit;

⇒Increase in payments

by them during their stay in Japan

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Do local governments play an important role in attracting inbound travelers?

- Japanese local governments' policy objective:

  ⇒By promoting tourism increase

  the number of inbound travelers.

- When looking at the number of inbound travelers from eastern Asia regions, urban areas have an advantage over rural areas in attracting their.

- However, more inbound travelers from eastern Asia visited Nagasaki, Oita, Miyazaki, and Kagoshima prefectures than Hiroshima and Okayama prefectures, which have the larger population size.

# Lodging trends of Koreans and Chinese in various regions of Japan in 2014

A) number of lodging,

B) number of sister-city ties

C) number of overseas offices established in Korea and China

Region	Korea A)	%	China A)	%	Korea B)	%	Korea C)	%	China B)	%	China C)	%
Hokaido	367,850	8.5	671,850	8.6	9	5.8	1	4.8	13	3.7	2	3.2
Tohoku	37,260	0.9	31,420	0.4	9	5.8	5	23.8	42	11.8	5	7.9
Kanto	1,116,950	25.7	3,516,730	45.1	24	15.4	1	4.8	67	18.9	9	14.3
Hokushinetsu	55,620	1.3	91,370	1.2	7	4.5	2	9.5	35	9.9	5	7.9
Chubu	159,960	3.7	921,180	11.8	15	9.6	1	4.8	38	10.7	7	11.1
Kinki	971,960	22.4	1,935,720	24.8	20	12.8	1	4.8	55	15.5	9	14.3
Chugoku	80,320	1.9	52,010	0.7	29	18.6	3	14.3	34	9.6	4	6.3
Shikoku	43,380	1.0	19,270	0.2	3	1.9	0	0.0	18	5.1	2	3.2
Kyushu	1,108,130	25.5	248,920	3.2	40	25.6	7	33.3	49	13.8	18	28.6
Okinawa	397,530	9.2	307,790	3.9	0	0.0	0	0.0	4	1.1	2	3.2
Total	4,338,960	100.0	7,796,260	100.0	156	100.0	21	100.0	355	100.0	63	100.0
Mean	433,896		779,626		16		2		36		6	
Standard Deviation	455744.10		1130648.7		12.60		2.28		19.47		4.90	
coefficient of variation	1.05		1.45		0.81		1.09		0.55		0.78	

Source: Japan Tourism Agency (https://www.mlit.go.jp/kankocho/index.html), CLAIR(https://www.clair.or.jp/)

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Do local governments play an important role in attracting inbound travelers?

- Japanese local governments' policy objective:

  ⇒By promoting tourism increase
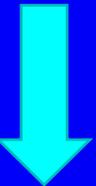
  the number of inbound travelers.

- Local governments have been improving an environment that provides Wi-Fi access in public facilities and enables cashless transactions for various procedures.

- These improvements indirectly contribute to inbound travelers visiting Japanese local areas.

Do local governments play an important role in attracting inbound travelers?

- Local governments have been improving an environment that provides Wi-Fi access in public facilities and enables cashless transactions for various procedures.

- These improvements indirectly contribute to inbound travelers visiting Japanese local areas.

- Did inbound tourism before COVID-19 have an impact on regional tourism, GRP (productivity), and wages?

Research Question and Purpose

- In this paper, we examine how inbound travelers' IT responses and TMPs have affected productivity and wages in prefectures by using panel data for prefectures in 2014-19.

- This paper utilizes the number of visitors to Japan is measured in terms of Tourism Market Potential (TMP), which is "the size of local (tourism) demand from foreign visitors to Japan. It does not measure the effect of Gross by the simple scale of the number of visitors to Japan, but the effect of Net, which includes accessibility from origin to destination.

The Definition of TMP

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Productivity and spillover effects of the local tourism industry

● Liu, A. and D. S. Wu (2019), Tourism productivity and economic growth, *Annals of Tourism Research*, 76, 253-265.

⇒The results demonstrate the impact of tourism productivity on economic growth and illustrate the spill-over effects between tourism and other sectors caused by the externalities of physical and human capital and public services.

● Lia, S., A. Liub and H. Songc (2019), Does tourism support supply-side structural reform in China?, *Tourism Management*, 71, 305-314.

⇒The calibration of 30 provincial CGE models demonstrates that the impact of tourism on reform in provinces with severer industry overcapacities is much stronger.

Productivity and agglomeration effects of the local tourism industry

- Paci and Marrocu（2013）, Tourism and regional growth in Europe, Papers in Regional Science, 26

 ⇒Analyzing the impact of domestic and international guest numbers on urban economies, focusing on 179 cities in the EU.

 ⇒To verify that the number of foreign guests is significantly positive.

- Kim, Y. R, M. Williams, S. Park and J. L. Chen (2021), Spatial spillovers of agglomeration economies and productivity in the tourism industry: The case of the UK, *Tourism Management*, 82, 104201

 ⇒Based on individual survey data from the UK, this study examines how Marshallian externalities affect labor productivity in the tourism industry.
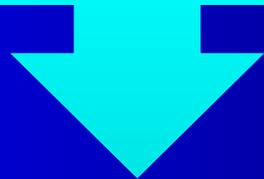
Survey based on research questions

- Previous studies

⇒Analysis of the demand side of consumers, specifically tourists (visitors to Japan).

⇒The analysis of the supply side of producers (service providers) in the tourism industry is insufficient in Japan.

- The mainstream examples focus on transportation and accommodation facilities.
- Fukao, Kan, and Gon (2019): An analysis of the productivity of the tourism industry in Japan as a whole

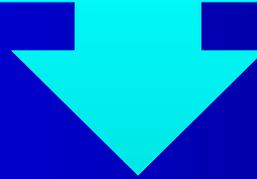# Sum up of Survey based on Research Questions

- Previous studies

  - The mainstream examples focus on transportation and accommodation facilities.
  - Fukao, Kan, and Gon (2019): An analysis of the productivity of the tourism industry in Japan as a whole

- The analysis of inbound numbers at the regional level is insufficient, and the analysis of the agglomeration effects of tourism at the regional level is also inadequate.

Research Design

- This study aims to clarify what has contributed to regional tourism by analyzing inbound tourism trends before COVID-19, focusing on regional (prefectural) levels from 2014 to 2019.

- Analyzing the contribution of the consumption behavior of inbound travelers to the productivity of regions in Japan, and further analyzing the contribution to the productivity of Japan's regional tourism industry.

About regional productivity, we focus on the prefectural GRP.

In Japan's industrial classification, there is no category for the tourism industry. Therefore, in the analysis of the local tourism sector, we will focus on the accommodation and food services industry.

Verification Task

- Did inbound tourism contribute to the GRP (productivity) and wages of the prefectures?

- Did inbound tourism contribute to the total added value (productivity) and wages of the accommodation and food service industries in the prefectures?

- Verification based on a group of variables related to the consumption behavior of inbound tourists

Verification Task

- Verification based on a group of variables related to the consumption behavior of inbound tourists

  ⇒ ① Travel arrangement methods of inbound tourists

  ⇒ ② Accommodation methods of inbound tourists

        (supply capacity of the receiving facilities)

  ⇒ ③ Payment methods of inbound tourists

        (degree of DX penetration in receiving facilities)

  ⇒ ④ Indicators of regional tourism industry

        agglomeration (TMP)

Empirical Specification

- 1）The base of the productivity estimation

$$\ln\left(Y_{it} / L_{it}\right) = \alpha \ln\left(K_{it} / L_{it}\right) + \delta Inbound_{it} + \eta_i + \mu_{it}$$

- 2）The base of the wage estimation formula.

$$\ln w_{it} = \alpha \ln K_{it} + \beta \ln L_{it} + \delta \ln Inbound_{it} + \eta_i + \mu_{it}$$

Express the variable *Inbound*, as shown in these basic forms, with a group of variables derived from the consumption behavior of inbound tourists, and verify their effects.

Tourism Market Potential (TMP based on travel time)

$$TMP_{it} = \frac{NoFVJ_{it}}{t_{iit}} + \sum_f \frac{NoFVJ_{ft}}{Time_{fit}}$$

⇒*NoFVJ*（**Number of foreign visitors to Japan**）

The Japan Tourism Agency's "Accommodation Travel Statistics Report (Annual Edition)" shows the number of overnight guests by nationality and prefecture.
Inbound foreign travelers (from South Korea, China, Hong Kong, and Taiwan) account for 71.0% of all tourists (average value from 2007 to 2019).）

⇒**Destination (Prefecture)***i*、**Departure (Foreign)***f*

⇒**Travel time** *t* **within the destination**

⇒*Time***: International Travel time from** *f* **to** *i*

Complement：Measurement of Travel Time

● **Travel time t within the destination**

⇒Travel time from international airports in

each prefecture to the JR hub stations

⇒Measured time by https://roote.ekispert.net/.

＊If there is no international airport, the time from the nearest
international hub airport to the railway (JR) hub station in the
relevant prefecture.

Complement : Measurement of Travel Time

- **Time: International Travel time from f to i**

⇒The travel time from the departure airport f (Incheon, Pudong, Hong Kong, Taoyuan) to the international airport in the prefecture.

⇒Measured time by GLOBAL BUSINESS TRAVEL.

＊If there is no international airport, the time from the nearest international hub airport to the railway (JR) hub station in the relevant prefecture.

The List of Variables

- *Y,K,L,w* : GRP, capital, labor, wages

  Source: "Prefectural Economic Accounts"

- *Cash, Credit, Devit* : **Payment methods in the regions visited by inbound tourists.**

  Source: "Survey on Consumption Trends of Foreign

  Visitors to Japan"

- *Grouptour, FIT* : **Travel arrangements for visitors to Japan regarding their destination areas.**

  Source: "Survey on Consumption Trends of Foreign

  Visitors to Japan"

*FIT : Foreign Independent Tour

Estimation Result;
Dependent Variable: ln(Y/L) of total industry
Fixed Effects Model from 2014 to 2019 (N=282)

	1-1a		1-1b	
	Coef.	p-value	Coef.	p-value
ln (K/L)	0.20246	0.000	0.21846	0.000
ln TMP	0.01781	0.001		
Cash-share	0.00007	0.909	0.00045	0.484
Credit-share	0.00028	0.246	0.00070	0.001
Debit-share	-0.00042	0.157	-0.00010	0.727
Grouptour	0.00055	0.225	0.00107	0.015
FIT	0.00019	0.624	0.00044	0.270
Adj. R^2	0.330		0.298	

Estimation Result;
Dependent Variable: lnW of total industry
Fixed Effects Model from 2014 to 2019 (N=282)

	1-3a		1-3b	
	Coef.	p-value	Coef.	p-value
ln K	0.21728	0.000	0.25065	0.000
ln L	0.01996	0.852	0.08456	0.466
ln TMP	0.03637	0.000		
Cash-share	0.00034	0.616	0.00109	0.133
Credit-share	0.00048	0.063	0.00130	0.000
Debit-share	-0.00064	0.046	-0.00001	0.967
Grouptour	0.00140	0.005	0.00235	0.000
FIT	0.00137	0.002	0.00176	0.000
Adj. R^2	0.523		0.437	

Discussion about total industry

- The effects of tourism market potential (TMP) are significantly positive on ln (Y/L) and lnW

- The effects of *Credit-share* are significantly positive on lnW

- The effects of *Devit-share* are significantly negative on lnW

- The effects of *Grouptour* and *FIT* are significantly positive on lnW

Estimation Result;
Dependent Variable: ln(Y/L)
of accommodation and food services
Fixed Effects Model from 2014 to 2019 (N=282)

	2-1a		2-1b	
	Coef.	p-value	Coef.	p-value
ln (K/L)	0.79755	0.000	0.68886	0.000
ln TMP	0.11138	0.000		
Cash-share	0.00139	0.367	0.00299	0.087
Credit-share	0.00152	0.007	0.00400	0.000
Debit-share	-0.00007	0.921	0.00181	0.022
Grouptour	0.00035	0.749	0.00307	0.011
FIT	0.00108	0.260	0.00222	0.041
Adj. R^2	0.615		0.498	

Estimation Result;
Dependent Variable: lnY
of accommodation and food services
Fixed Effects Model from 2014 to 2019 (N=282)

	2-2a		2-2b	
	Coef.	p-value	Coef.	p-value
ln K	0.48716	0.000	0.24121	0.007
ln L	0.15110	0.000	0.21263	0.000
ln TMP	0.09714	0.000		
Cash-share	0.00029	0.850	0.00102	0.544
Credit-share	0.00147	0.007	0.00344	0.000
Debit-share	-0.00123	0.105	-0.00031	0.709
Grouptour	0.00035	0.742	0.00254	0.025
FIT	0.00090	0.331	0.00173	0.090
Adj. R^2	0.308		0.150	

Discussion about accommodation and food services

- The effects of tourism market potential (TMP) are significantly positive on $\ln Y$

- The effects of *Credit-share* are significantly positive on $\ln (Y/L)$ and $\ln Y$

- The effects of *Devit-share* are significantly negative on $\ln W$

- The effects of *Grouptour* and *FIT* are significantly positive on $\ln W$

Conclusion

● **The tourism market potential (TMP) can be considered as the effect of tourism agglomeration (inbound concentration), and it has shown a significantly positive effect on the productivity and wages of prefectures.**

● **In terms of payment methods;** *Credit*, **and travel arrangements;** *Grouptour* **and** *FIT*, **were found to be significantly positive.**

⇒ The promotion of digital transformation is necessary. Group tours work according to a time plan, and economies of scale are at work in food reservations.

Conclusion

- **In terms of payment methods; *Credit*, and travel arrangements; *Grouptour* and *FIT*, were found to be significantly positive.**

  ⇒ **The promotion of digital transformation is necessary.**

  ⇒ **Group tour works according to a time plan, and economies of scale are at work in food reservations.**

  ⇒ **Individual travel can be interpreted as contributing to the local community due to its high unit price.**

Thank you !!